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Describing the Acquisition of the Passive Voice by a Child Learner of Japanese as a Second Language from a Processability Theory Perspective

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ABSTRACT

This longitudinal case study reports on the acquisition of Japanese as a second language (L2) by a child learner with English as his first language (L1) who was acquiring Japanese naturalistically. In particular this study focusses on the acquisition by the child of a non-canonical mapping structure, namely the passive voice in relation to canonical mapping structures (e.g., the active voice) within the framework of the Unmarked Alignment Hypothesis (UAH) and the Lexical Mapping Hypothesis (LMH). These hypotheses are two of the main pillars of the extended Processability Theory (PT) (Pienemann, Di Biase & Kawaguchi, 2005). When compared to a large body of studies on the L1 acquisition of the passive voice, there have been only few theoretically motivated studies on the L2 acquisition of this structure, and further no studies to date have been undertaken using L2 child informants. The results of the earlier PT-based research (e.g., Wang, 2009) found that the acquisition of the passive voice by adult L2 learners occurred later than did the active voice. The results of the current child Japanese L2 study confirmed this, supporting Kawaguchi's (2007) claim that the learner's choice of a syntactic structure is restricted by developmental skills in argument-function mapping as predicted by UAH and LMH. Further, the results indicate that, prior to the emergence of the passive voice, a developmental period for the child to attempt non-canonical mapping existed and that the passive verbal morphology often appeared in a non-target like way until the end of the observation period.

Key words: The Acquisition of the Passive Voice, Child Second Language Learner, Japanese as a Second Language, Processability Theory

INTRODUCTION

When mature L2 learners are engaged in communication in their target language they rely on both their linguistic and pragmatic competence to maintain an effective conversation. However, if learners have not achieved an adequate level of competence, they may fail to add a pragmatically preferable nuance to their speech. This may happen because they have not been able to use an appropriate grammatical structure even though they may want to choose it. One aspect of particular semantic importance in Japanese discourse is choosing whether to use the active or passive voice. However, Kawaguchi (2005) suggests that the pragmatic ability to successfully choose is constrained by learners' developmental syntax.

Kawaguchi's claim accords with the extended version of the Processability Theory (PT) (Pienemann, Di Biase & Kawaguchi, 2005) which indicates that the acquisition of the passive voice is developmental. This theory, however, is largely based on cross-sectional research mostly undertaken with L2 adult learners. Therefore the aim of the current study was to test the veracity of the extended PT by exploring the

acquisition of the passive voice and comparing the emergence of the passive voice with that of canonical mapping structures, including the active voice, in the interlanguage of a naturalistic child learner of Japanese as a second language (JSL). The primary question was: Does the passive voice emerge later than canonical mapping structures in the interlanguage of a child acquiring JSL naturalistically? The data for this case study were collected longitudinally and analysed using both quantitative and qualitative methods.

Studies on the Acquisition of the Passive Voice

There has been considerable amount of research undertaken into the acquisition of the passive voice in the L1 context. For example, a large body of evidence suggests that the production and comprehension of the passive voice by English speaking children is delayed in comparison to that of other syntactic structures, particularly the active voice (e.g., Harwood, 1959; Horgan, 1978; Borer & Wexler 1987, 1992; Maratsos, Fox, Becker & Chalkley 1985). Although children appear to be able to use the active voice by the age of three

or younger, they do not have enough capacity to comprehend the passive voice until four or even older (e.g., Baldie, 1976; Beilin, 1975 cited in Hakuta, 1982). In addition, the results of a range of psycholinguistic experiments (Bever, 1970; Maratsos, 1974; de Villiers & de Villiers, 1973; Strohner & Nelson, 1974) show that when English L1 children perform comprehension tasks they have trouble with patientive SUBJ(ect)s, often assuming that the first noun in a sentence, be it active or passive, was the agent. It has been proposed that the late acquisition of the passives occurs because of learners' reliance on canonical mapping: They assign the role of agent to that noun in the primary SUBJ position (Wang, 2009).

A similar situation occurs in children acquiring Japanese as their L1: The passive voice is rarely produced by Japanese children aged two to three years (e.g., Sugisaki, 1997). Hakuta (1982) investigated Japanese children's acquisition of word order from the ages of two to six years using an elicitation task and found that "the overwhelmingly majority of the sentences produced were subject-object-verb (SOV)/actives. There were very few passives produced, and all were in the SOV order" (p. 71). The children tended to mark the first noun in either an SOV or OSV sentence with the nominative particle *-ga*. Similar results from earlier Japanese L1 studies also suggest that under the age of six years the passive is much more difficult than the active voice and that children acquire it later than other grammatical features (e.g., Kokuritsu Kokugo Kenkyujo, 1977, Takahashi, 1975).

In the field of second language acquisition (SLA), despite the fact that many L2 teachers perceive the passive voice as one of the most challenging structures to teach (Hinkel, 2002) there have been very few studies on the grammatical development of this form. There is a similar paucity of studies on the acquisition of the passive in JSL, again despite the common brief that the passive voice is said to be one of the most difficult structures to acquire (e.g., Sawetayaram, 2008).

Of those studies that have investigated the acquisition of passives, most are either based on corpus studies or on error analysis of written data. In short, a developmental perspective has rarely been explored and few longitudinal studies have been undertaken in SLA (Wang, 2010). It is unclear whether the under-use of the passive by L2 learners can be explained solely by the learner's preference or because of possible developmental constraints. As Taguchi (2001) indicates, those mechanisms that contribute to the difficulty in acquiring the passive voice have not been sufficiently explored.

With regard to the characteristics of the passive voice in Japanese, Tanaka (e.g., 1996, 2005) suggests that, unlike English, Japanese people tend to use the passive voice with the speaker placed in the patientive SUBJ position rather than using an active voice with her/him placed in the patientive OBJ(ect) position. Therefore, the acquisition of the passive in Japanese allows the speaker to express this peculiarly Japanese viewpoint and to abide by the cultural norms of the voice system. Thus, from a pedagogical perspective, Tanaka emphasises the importance to JSL learners of understanding and learning this.

Among the few longitudinal studies, Matsumoto (2010) examined the acquisition of various Japanese grammatical structures by a nine year old boy who had Chinese as his L1. Unlike previous research this study was theoretically motivated, based within the framework of the original version of PT (Pienemann, 1998). The researcher analysed, among other features, such structures as verbal inflection, *V-te V* structures and passive constructions and compared her results with those of other PT based JSL studies (Di Biase & Kawaguchi, 2002; Iwasaki, 2008). The data were collected while the boy attended mainstream classes in the two year and nine months period from his arrival. Although the order of the acquisition of these three verbal structures paralleled that found in the previous studies, Matsumoto reported only two instances of passive structures being observed and only toward the end of the data collection period. This result is similar to that of Ito (1997)'s study about the order of acquisition of different syntactic structures by an eight year old Russian boy who was learning Japanese naturalistically upon his arrival in Japan. She found that no passive forms were produced by the boy during the 20 month data collection period.

Although these few JSL studies do provide some interesting insights into the order of acquisition of different structures, particularly passives, it is difficult to draw a direct comparison between them because of the differences in the methods of analysis that were used. Working within the parameters of PT does seem to provide a useful mechanism for establishing consistency in this type of research.

Extended Processability Theory (PT)

PT is claimed to be a universal SLA theory that can be applied across languages because it characterises language acquisition in terms of cognitive processability of linguistic structures and because it is based on a typologically plausible grammar theory called Lexical Functional Grammar (LFG) (e.g., Bresnan, 2001). A number of researchers have applied it to various L2s. This includes earlier work with Italian, Japanese (Di Biase & Kawaguchi, 2002) and Swedish (Pienemann & Håkansson, 1999) languages to more recent work once again including Japanese (Kawaguchi, 2015), and also Russian (Artoni & Magnani, 2015) and Spanish (Di Biase & Hinger, 2015). The focus of this latter research was to identify language specific outcomes fitting into the general developmental hierarchy as proposed by the extended PT. According to the original version of PT the hierarchical order of language development is (1) lemma access, (2) category procedure, (3) phrasal procedure, (4) S-procedure, and, – if applicable (5) subordinate clause procedure (Pienemann, 1998, p. 7).

Unmarked Alignment Hypothesis (UAH) and the Lexical Mapping Hypothesis (LMH)

Unlike the original PT (Pienemann, 1998), where the mechanisms of morphological and syntactic development are both based on LFG's feature unification (Bresnan, 2001), or information exchange between the constituents within or

beyond a phrase/clause, the extended PT (Pienemann et al., 2005) propounds the view that the development of syntax¹ should be explained by mappings between the three parallel structures, namely argument-structure (a-structure), functional-structure (f-structure) and constituent-structure (c-structure). Further, in relation to argument and functional mapping, it is claimed that the universal thematic and grammatical hierarchies play an important role. For instance, according to Bresnan (2001, p. 307) the hierarchy is as follows:

Agent > Beneficiary > Experiencer/Goal > Instrument > Patient/Theme > Locative

Such a hierarchy suggests that the further to the left, the higher the prominence. Therefore, when comparing Agent and Patient in an active sentence, the agent role stays in the speaker/listener's mind more prominently² than the patient role (Kawaguchi, 2005).

In a similar manner, the grammatical functions can be ordered hierarchically in Figure 1:

According to the principles of UAH (Pienemann, et al., 2005, p. 229) as learners first map the most prominent thematic role (Agent) onto the grammatical SUBJ, they are placed in the most prominent position. This results in the production of sentences involving canonical mapping, i.e., SOV (agentive SUBJ + patientive OBJ + Verb³) for the active voice in the case of Japanese. Because word order is quite flexible and ellipsis of constituent(s) is allowed in Japanese, OSV,

SV and OV are other possible word orders, but the verb final rule must be maintained (Shibatani, 1987, p. 142). In the extended PT, this canonical word order is considered as the unmarked, canonical syntactic alignment. As a consequence, beginning learners have no alternative but to opt for this type of canonical mapping even in contexts where the use of the passive voice is pragmatically preferable. An example of this mapping is shown using the active utterance, *hachi-ga inu-o sas-u* (bee-NOM dog-ACC sting: The bee stings the dog) Figure 2 below:

As explained by Kawaguchi (2005), while canonical mapping continues to be available, as learners develop they establish more advanced ways of mapping. For example, they can map the less prominent thematic role (patient) onto the grammatical SUBJ (promotion), and at the same time map the most prominent thematic role (agent) onto the ADJUNCT position (demotion). Together these lead to the realignment of the constituents which in turn means that more advanced learners are able to manipulate the mappings according to the demands of the discourse. According to LMH, the production of sentences involving non-canonical word order, such as the passive voice, is realised by this type of non-canonical mapping. An example of this in Japanese is the following passive sentence, *inu-ga hachi-ni sas-are-ru* (dog-NOM bee-DAT sting-PASS: The dog is stung by the bee) shown in Figure 3:

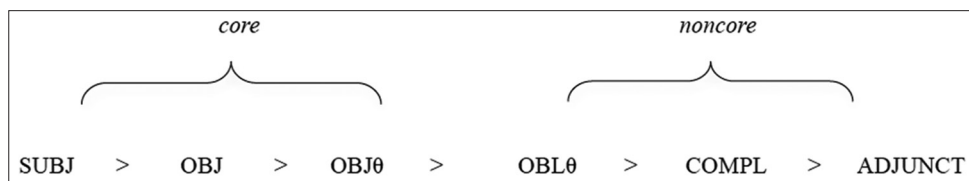


Figure 1. Relational hierarchy (Keenan and Comrie, 1977 cited in Bresnan, 2001, p. 96)

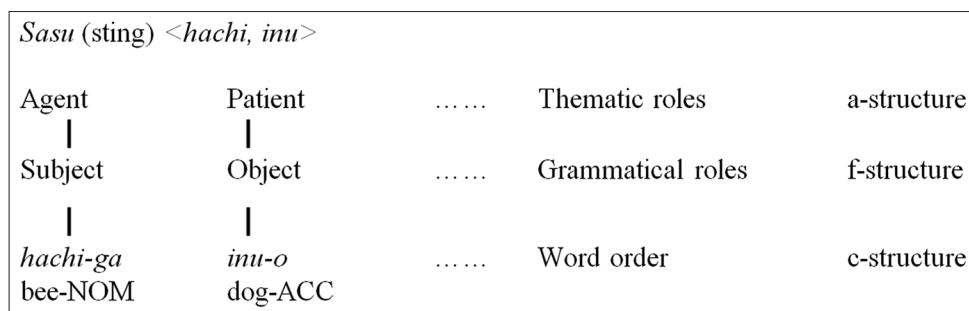


Figure 2. Canonical mapping for the active voice.

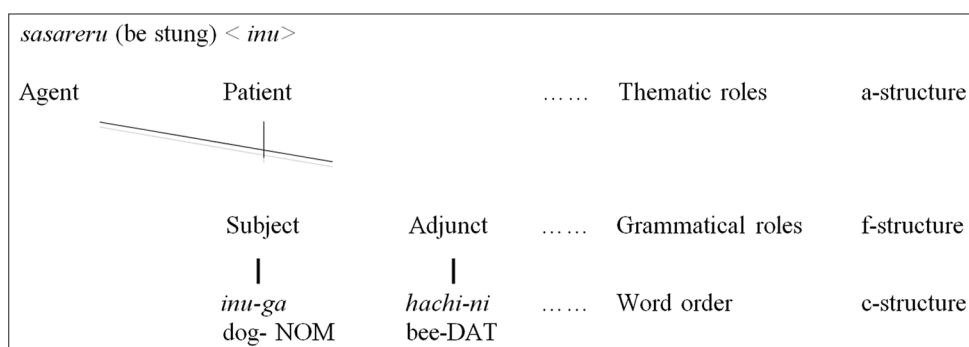


Figure 3. Non-canonical mapping for the passive voice.

The acquisition of canonical sentences such as the active voice which involves canonical mapping is hypothesised to occur at an earlier stage than that of non-canonical word order involving non-canonical mapping (e.g., Kawaguchi, 2007).

PT Extension Based Studies on the Acquisition of Passive Structures

Recently a number of studies examining the acquisition of the passive voice and based on PT have been undertaken. For example, Keatinge and Keßler (2009) investigated the developmental sequence of the passive voice in adults acquiring English as a second language (ESL). They did this using the *FishFilm* (Tomlin, 1995, 1997) an online animated cartoon task that was developed to elicit passive constructions. The results of the study demonstrated that Stage 4 of PT is the prerequisite stage for learners to comprehend passives and also to begin non-canonical patient-to-SUBJ mapping, although their passive morphology still tends to be non-target-like (NTL). By Stage 5 they found that learners were able to produce passives with agentive ADJ accompanying the preposition *from*, although the passive morphology was often NTL, and that finally the acquisition of the fully controlled passive structures occurred at Stage 6.

Wang (2009) also used *FishFilm* in his research on the acquisition of the English passives by six adult Mandarin speakers of three different proficiency levels. Working within the LMH framework his results indicated that, while beginner ESL learners consistently used the active structure in spite of the contextual and instructional cues given to elicit the passive structure, the advanced learners did achieve native-like performance. In contrast, the late intermediate learners appeared to resort to the use of an alternative strategy. Wang suggests this is developmental and occurs because of processing constraints and learners' sensitivity to discourse-pragmatic contexts which interacts with their L2 syntax.

In a range of longitudinal and cross-sectional JSL studies, Kawaguchi (2005, 2007, 2009) explored the acquisition of non-canonical mapping structures including the passive voice. She applied the UAH and LMH to JSL and predicted that passives, causatives, and benefactives emerge at a

later point than canonical word order structures, i.e., SOV or SV (with verb final). Her empirical data taken from the adult informants who were learning Japanese as a foreign language (JFL) in an Australian university supported the predictions of the UAH and LMH. In these studies, valid cases of the passive structure were counted depending on whether patientive SUBJ and/or agentive ADJ were overtly encoded with appropriate nominal morphology, whereas invalid cases were those where argument was wrongly marked. Based on UAH and LMH the developmental stages of the two different mapping skills which are hypothesised to occur after the initial lemma access stage (word/formulas) in Japanese are summarised in Table 1 below.

In conclusion, the validity of the UAH and LMH appears to be supported by empirical studies on the acquisition of non-canonical mapping structures, including the passive voice when learners acquire English and Japanese as an L2. However, these investigations have been undertaken with adult learners, in the main using cross sectional approaches. Clearly there is a need to test these findings with other types of learners (namely children) using alternative approaches (e.g. longitudinal studies) to provide further corroborating support for the extended PT.

Research Questions

Using longitudinal data from a younger learner this study seeks to test the extended PT, particularly UAH and LMH, and answer the following research questions:

- (1) Does the passive voice emerge later than canonical mapping structures in the interlanguage of a child acquiring JSL naturalistically?
- (2) How does the passive voice develop from NTL to TL use in the child language?

THE STUDY

The Informant

The informant of the current study, John⁴, is an Australian born English speaking child who was acquiring JSL in Australia at the time of the study. At the commencement of data collection John was 7 years old and had been enrolled as a Year One student at a primary school for Japanese chil-

Table 1. Developmental stages for Japanese L2 syntax based on UAH and LMH

a- to f- structure mapping	Structural outcomes in Japanese L2	Examples of Japanese structural outcomes from the current study
Non-canonical mapping (Single clause)	Non-canonical word order Passive Complex predicates e.g., causative and benefactives	Ichinensei-wa Sugi (xxx) okorarete imasendeshita. (Year One students were not being told off (xxx) Sugi.
↑	↑	↑
Canonical mapping, i.e., Most prominent thematic role is mapped onto SUBJ	Canonical word order (i.e., (S) OV, TOPSUBJOV	Ur... Treasure Island no hon yonda. ((I) read the Treasure Island book.)
↑	↑	↑
No mapping (Lemma access)	Single word/formulas	Un. (Yeah.)/Chigau! (Wrong!)

(Based on Kawaguchi, 2007)

dren for nine months. This school had been established to provide an education in line with the curriculum of the Japanese Ministry of Education and Science for the children of Japanese nationals living in Australia. All the children at the school, including John, were taught all subjects in Japanese.

On enrolment John's proficiency in Japanese was virtually zero. He was not able to speak or understand Japanese at all with an exception of a couple of formulaic expressions (e.g. greetings). He did not receive any explicit grammar instruction at school and, therefore, his acquisition occurred in an immersion context.

Research Design

The child was visited at home fortnightly and audio-recordings of his speech were made over a 21 month period. The recordings of all 26 sessions were transcribed and, out of the 26 sessions, data from 17 sessions were used for analysis. These were the first four fortnightly sessions, the subsequent monthly sessions and the last two follow-up sessions that were undertaken four months and nine months later. In each of these John performed between two to four different communicative tasks with other Japanese speakers. These tasks included free conversation, story telling, a spontaneous role play, and, a card game. The primary purpose for using the tasks was to maximise John's natural oral production, although it was also hoped that some tasks might elicit the use of particular syntactic structures such as the passive voice.

Coding and Data Analysis

All utterances were transcribed and then formulaic or echoic clauses were excluded from analysis. Next, in order to examine instances of canonical mapping structures, those clauses with a lexical verb⁵ involving one or two core grammatical arguments (i.e., SUBJ and/or OBJ) were separated from the entire corpus. In terms of word order, these clauses represent SOV, OSV, SV, and OV. It should be noted that when SUBJ is topicalised with the particle *-wa*, it is realised as TOP(ic)_{SUBJ}. Then, depending on whether or not the nominal particles (i.e., *-ga* or *-wa* to SUBJ or TOP_{SUBJ} and/or *-o* to OBJ) were attached to the argument(s), and whether the assignment of the particles was NTL, all cases of one or two argument clauses were coded accordingly.

In order to determine the emergence of the passive voice, based on Kawaguchi (2007), clauses with a passive verb were categorised depending on whether they were accompanied by SUBJ (Patient) and/or ADJ (Agent) and whether these arguments were assigned with the appropriate nominal particles. The following criteria were used and all passive verbs were coded accordingly:

- 1) Sufficient evidence: cases where a passive verb accompanied SUBJ/TOP_{SUBJ} marked with the target-like (TL) particle *-ga/-wa* and/or agentive ADJ marked with the TL particle⁶ *-ni*.
- 2) Positive but insufficient evidence: cases where a passive verb accompanied SUBJ/TOP_{SUBJ} and/or agentive ADJ marked with null particle.

- 3) Negative evidence: cases where a passive verb accompanied SUBJ/TOP_{SUBJ} and/or agentive ADJ marked with the NTL particle(s).

- 4) Verb morphology: cases where a passive verb only was supplied.

Based on Pienemann (1998), the first production of a syntactic rule was considered as validation that the rule had emerged.

RESULTS AND DISCUSSION

This section presents and discusses the results of the analysis for the acquisition of the passive voice by a child learner of Japanese L2 in relation to the acquisition of canonical mapping structures. The section consists of four parts. The first and second parts (3.1 and 3.2) present and discuss the occurrences of canonical mapping structures such as the active voice found in the child language, and those of the passive voice respectively. The third part (3.3) then provides a summary of the comparison of the emergence of the two structures, namely canonical mapping structures and the passive voice, and answers RQ1. The last part (3.4) provides a summary of the child's NTL and TL uses of the passive voice to answer RQ2.

Occurrences of Canonical Mapping Structures

From the data obtained, 984 instances of canonical mapping structures were identified and were divided into eight categories depending on how or if particles were assigned to an argument(s). Their distribution across the 17 sessions is outlined below (see Table 2):

From Table 2, it appears that canonical mapping structures had already emerged and had done so mainly in the form of one argument clauses in Session 1. It also appears that one-argument clauses (SUBJ or OBJ + V) outnumbered two-argument clauses (SUBJ and OBJ + V) and TL use of particles outnumbered NTL use. To illustrate this, examples of the occurrences of the canonical mapping structures in earlier sessions are discussed in detail below.

Session 1:

One-argument clauses involving either an intransitive or transitive verb, were typical in John's speech. Most were in the form of SV with the correct assignment of the nominative particle *-ga* to the SUBJ as in (1).

- (1) *inu-ga janpu shi-te sorede* bottle squashed
(English)

dog-NOM jump-COMP and then

"The dog jumped, and then the bottle squashed."

There was also one case of OBJ with the correct assignment of the accusative particle *-o* as in (2):

- (2) *xxx-ga sofutobooru sign up shi-ta*
xxx (English)-o

[inaudible]-NOM [inaudible] sign up-ACC do-PAST

"[inaudible] signed up softball."

Table 2. Occurrences of canonical mapping structures in John's interlanguage

	1	2	3	4	6	8	10	12	14	15	16	18	20	22	24	25	26	Total
One-argument clause	11	15	26	22	34	26	49	39	38	24	64	52	32	67	41	37	58	635
SUBJ or OBJ with a TLP + V																		
SUBJ or OBJ with null P + V	2	3	10	2	13	2	8	7	21	20	28	9	9	10	13	8	22	187
SUBJ or OBJ with an NTLp + V	2	1	4	3	1	1	1	1	1	1	1							16
Two-argument clause																		
SUBJ & OBJ with a TLP each + V			3	2	4	6	6	10	3	7	9	4	9	7	5	8	15	98
SUBJ & OBJ: one with a TLP & the other with null P + V	1		2	1	1	1	2	2	4	4	3	3	2	2	1		3	31
SUBJ & OBJ with null Ps + V			1		1		1				2	1					1	7
SUBJ & OBJ: one with a TLP & the other with a NTLp + V		2		1			2	1	1			1					1	9
SUBJ & OBJ with NTLps + V					1													1
Total	16	21	46	31	54	35	66	61	68	57	106	70	53	86	60	54	100	984

Unfortunately, the part marked by the nominative particle *-ga* was inaudible and therefore it is not clear what was meant. Therefore, this utterance was counted as OV.

Two utterances also appeared in the form OV as in (3). In these cases, no morphological marking for the OBJs was given (i.e., null particle):

- (3) *un sorede ikko akachan-ø tot-te*, [pause]
 yeah then one baby-ø take-COMP

“Yeah. Then, (the boy) took a baby, and then...”

Two instances of OV where OBJs were marked incorrectly by a nominal particle *-ga* were observed. One of them is the following utterance produced while John was talking about a TV program:

- (4) **bideo-no Simpsons (English)-ga mi-ta*
 video-GEN (TV program)-NOM watch-PAST
 *“(The Simpsons on video) watched.”

Intended: “(I) watched the Simpsons on video.”

There was one occurrence of a two-argument clause, but it was realised as OSV. John supplied OBJ, *last bat* (English), which was not encoded with the accusative particle *-o*. Even when he rephrased the English words with the Japanese demonstrative pronoun *sore* (that), it was not accompanied by *-o*. However, for the second argument the SUBJ was correctly marked by the nominative particle *-ga*.

- (5) *ast bat sore-ø Homer Simpson yat-ta tot-te*,
 (English)-ø (English)-ga [pause]
 last bat-ø that-ø (animated TV do-PAST take-
 character) COMP
 -NOM

“Homer Simpson did the last bat, that.”

Based on these examples it appears that by session 1 (representing nine months of his immersion in Japanese) John was successfully encoding the agentive role onto SUBJ and the patientive role onto OBJ, although some NTL use of the particle did occur.

Session 2:

Two cases of the clause involving two arguments (SOV) were observed. However, while SUBJ was correctly marked with *-ga*, OBJ in the second position was also marked with *-ga* as shown below. Together with examples (4) from Session 1 this suggests an overuse of the nominative particle *-ga*.

- (6) **maya-ga kumo-ga mot-te ki-te ne* [pause]
 (Person name)- spider- have- come- FP
 NOM NOM COMP COMP

*“Maya, a spider brought, right? And then...”

Intended: “Maya brought a spider, right? And then...”

In fact, the three cases of the NTL use of a particle in Session 2 all involved the overuse of *-ga* for OBJ. In this session there were only two cases of the production of *-o*, compared to 15 of *-ga*, including the three cases of overuse.

Session 3

There were three SOV utterances in which both nominative and accusative particles were assigned in a TL way. For example:

(7) *sorede okasan-ga jibun-no petto-o tot-ta*
 Then mother-NOM self-GEN pet-ACC take-PAST
 “Then the mother took her own pet.”

However, John also produced a two-argument utterance without a particle:

(8) *sorede boku-o picchaa-o su-ru*
 Then I-ø pitcher-ø do-PAST
 “Then I do a pitcher.”

In summary, it appears that John had already developed canonical mapping skills at the beginning of the data collection period. The production of canonical mapping structures consistently occurred in large quantities throughout the observation period. Whether the utterance was made up of one or two arguments, in most cases TL particles were used and such TL clauses (n=733) accounted for 74.49% of the total number of canonical mapping clauses produced throughout the 17 sessions (n=984). There were a small number of cases of clauses where an NTL particle was assigned to at least one argument (n=26), accounting for only 2.64% of the total number of clauses. The remaining 22.87% was for clauses containing at least one argument with null particle.

Occurrences of Passive Structures

During the data collection period John only produced nine utterances in the passive voice (see Table 3). These included five clauses involving patientive SUBJ and/or agentive ADJ, but in one of the cases, no particle was attached to the SUBJ (therefore representing positive but insufficient evidence). The remaining four utterances were with a passive verb only (i.e. verb morphology). Thus it is clear that the production of the passives which requires non-canonical mapping was scarce compared to that of canonical mapping structures.

Beginning at Session 10, during which time it appears that the passive voice begun to emerge, examples of the occurrences of the structures are discussed in detail below.

Session 10:

During this session there were four attempts by John at passive constructions. There were also many times when John did not use the passive form, even though potentially it could have been used. For example, when John played the card game with his school friend, Taro, in contrast to the intended purpose of the game (i.e., to elicit the use passives), John mostly used an active voice to describe the boy pictured on his cards. In the following example (9), he is describing a boy wearing a T-shirt with the name “John” printed on it and Taro was looking for the same picture.

(9)
 J: *dareka-o boku-no kutsu-o ashi-ni fun-deru.*
 Someone-ø I-GEN shoe-ø foot-on step-DUR
 “Somebody is stepping on my shoe, foot.”
 T: *ashi-o fun-deru?*
 foot-ø step-DUR
 “(Is he/she) stepping on your foot?”
 J: *un.*
 “Yeah.”

Table 3. Occurrences of the passive voice in John’s interlanguage

	1	2	3	4	6	8	10	12	14	15	16	18	20	22	24	25	26	Total	
No argument																			
Passive verb morphology only							1			2			1 ⁷					4	
One Argument Clause																			
SUBJ or ADJ with a TLP + PV							1									1		2	
SUBJ or ADJ with null P + PV							1											1	
SUBJ or ADJ with an NTL P + PV																			1
Two Argument Clause																			
SUBJ & ADJ each with a TLP + PV																			
SUBJ & ADJ: one with a TLP & the other with null P + PV											1								1
SUBJ & ADJ with null Ps + PV																			
SUBJ & ADJ: one with a TLP & the other with a NTL P + PV																			
SUBJ & ADJ both with NTL P + PV							1												1
Total							4			2	1		1					1	9

- T: *kuruma-ga?*
car-NOM
“A car?”
- J: *dareka-ø onnanoko-ga* [pause]
somebody-ø girl-NOM
“Somebody, a girl...”
- T: *onnanoko-ø* [pause] *niban.*
girl-ø No.2
“A girl...No. 2.”
- J: *atari*
“You are right!”

Instead of using the indirect passive voice such as “*Boku-ga dareka-ni ashi-o fum-are-ta* (I-NOM someone-DAT foot-ACC step-PASS-PAST: I had my shoe stepped on by someone), i.e. My foot was stepped on by someone), John produced the active utterance as shown in the first line of the example. However, this was sufficient for Taro to understand and to locate the correct picture. This could be what Wang (2010) calls “the later intermediate learner’s use of an alternative strategy” or simply can be explained as occurring because this communicative task does not force players to use the passives.

Further into the card game John produced the passive form twice, first just a passive verb and later the same verb accompanied by SUBJ marked with null particle (i.e. positive but insufficient evidence) as in (10). The TL form of the active verb “to tell off” is “*okoru*”, and its TL passive form is “*okor-are-ru*” (tell off-PASS). It can be assumed that by adding the meaning of progressive aspect, John intended to say “*okor-are-teru*” (tell off-PASS-PROG: I am being told off). However, he produced the NTL passive morpheme “-at-” instead of “-are-”, resulting in the utterance, “**okor-at-teru*” twice:

- (10)
- J: *etto okor-at-teru.*
tell off-PASS-PROG
“Let me see, (I) am being told off.”
- T: *kyuu ban.*
“No. 9.”
- J: *bubbu.*
“Wrong.”
- T: *uso*
“No way (lit., a lie)!”
- J: *boku-ø o kor-at-teru. haato-ga kowashi-teru.*
I-ø tell off-PASS-PROG heart-NOM break-PROG
“I am being told off. The heart was breaking.”
- T: *go ban. Ichiichi okot-teru. de tsugi-wa?*
No.5 each time tell off-PROG then next-TOP
“No. 5. [Someone] is angry each time. And next?”

During a short conversation that followed, John, Taro and the researcher talked about the story they were to recite for their homework. John got out his textbook and began telling the story about a fish called “*Suimii*”. Coincidentally there was an utterance in the story containing a passive utterance: “*Ookina sakana-ni tabe-rare-te shima-u yo* (big fish-DAT eat-PASS-COMP complete FP: You will end up with being eaten by big fish!)”.

Interestingly John had difficulty reading the passive morpheme embedded in a *V-te V* structure, i.e., “*taberarete shimau*”. He tried to use its contracted form, “*tabe-rare-chau*”

but could not produce the passive affix *-rare-* correctly, resulting in a double consonant after “-ra” as in “*tabe-rac-chau*” as he did for “*okor-at-teru*” as shown in Example (10). It was only when the researcher modelled the passive affix that he could form the inflection correctly.

- (11)
- J: *ookina sakanatachi-ni tabe-rac-chau* [pause]
tab-era [pause] *ra* [pause]
big fish-DAT eat-PASS-PERF
eat-INT INT
You will end up with being eaten by big fish...being eaten...en”
- R: *rete* [pause]
[part of PASS-COMP]
(eat)en, and...
- J: [pause] *rete shima-u yo*
[part of PASS-COMP] complete FP
“(you) will end up being (eaten).”

Since this was an echoic production, it was not counted as the production of a passive. However, this incident signifies an important point of change in John’s interlanguage.

After John had read the story, the researcher asked him a question as to why all of the fish grew bigger. John then produced a passive with ADJ to say “Because they are (Intended: were) not eaten by this big fish” as in (12). Although the passive morpheme was NTL (i.e. he used *-rawa-* instead of *-rare-*) and the non-past tense (*-nai*) was overused in what should have been a past tense context (*-nakatta*), the passive form accompanied ADJ marked with the dative particle *-ni*:

- (12)
- J: *e kono sakana-ni tabe-rawa-nai kara.*
This fish-DAT eat-PASS-NE because
“Hmm? Because they are (intended: were) not eaten by this fish.

Although this meets the criterion for sufficient evidence for the passive, it is somewhat problematic to conclude that John produced the patientive ADJ marked with the dative particle *-ni*, i.e., “*kono sakana-ni* (by this fish)” with full recognition of lexical mapping. This is due to the timing of the production – given that it occurred straight after the recitation and it contained the same lexical verb “*taberu* (eat)” as the text. It is also important to note that John was still struggling to produce a TL form of the passive morpheme, *-rare-*, suggesting problems at the phonological and/or morphological level.

The next task performed was storytelling and again a passive was produced as in (13):

- (13)
- J: **sorede hachi-ga....*
then bee-NOM
“And then, the bees...”
- R: un
Hmm.
- J: *etto* [pause] *inu-ni sas-are-te to*
omot-te i-te [pause]
dog-DAT sting-PASS-COMP QUOT
think-COMP exist-COMP
uh... are thinking that (they) will be stung by the dog, and then...”

Despite the fact that in the story a dog was nearly stung by bees, as a result of reversed particles (i.e., the nominative marker *-ga* and the dative marker *-ni*) John's utterance was ill-formed. This is clearly a case of negative evidence demonstrating that he did seem to have trouble with argument-functional lexical mapping which is necessary for the production of a passive utterance. Therefore, although it appears that sufficient evidence exists in the data as in (12), it is premature to conclude that Session 10 is the point of emergence for the acquisition of passives. It is possible that his production was the result of remembering a similar utterance he had read immediately prior to this.

In Sessions 12 and 14, although the story telling task was used, there was not one occurrence of a passive form.

Session 15

In this session there was just one turn in which John produced a passive - "be stung". It was produced without the patientive SUBJ or the agentive ADJ. While it was TL in terms of verb inflection, i.e., "*sas-are-ta* (got stung-PASS-PAST)", when John attempted to say it again this resulted in a completely different lexical item (i.e., the verb "*sasayai-ta*" [whisper-PAST]). This verb sounds similar to "*sas-are-ta*", suggesting John's possible lexical or phonological confusion of the word. See the interaction below.

(14)

- J: *kumanbachi-ø* [pause]
wasp- \emptyset
"Wasp."
R: *un kumanbachi-ga do shi-ta no*
yeah wasp-NOM what do-PAST EP
"Yeah. What happened to the wasp?"
John-wa do shi-ta no
John-TOP_{SUBJ} what do-PAST EP
"What happened to you, John?"
J: *unto sas-are-ta* [pause] *sasayai-ta.*
sting-PASS-PAST whisper-PAST
"Hum, (I) was stung... I whispered (intended: [I] was stung)"
R: *a so ka. OK. Juu-ni ban desho.*
"Oh, I've got it. OK. It is No. 12, isn't it?"

It can be seen that in the two passive utterances the TOP_{SUBJ} "*boku* (I)" is missing. However, it did seem that the SUBJ was "*boku* (I)" because the researcher had provided TOP_{SUBJ} when saying "*John-wa do shi-ta no?* (As for John, what happened to him?) in her utterance in the previous turn. It can be assumed that he shared the established topic "John" with the researcher and therefore omitted it, suggesting that John comprehended the notion of lexical mapping in relation to passives.

Session 16

Again in this session only one passive verb form was observed and it appeared during the spontaneous teacher/student role play. Because John had previously said that his class had often been noisy, he was asked by the researcher whether or not his real school teacher growled at them that day. He answered using a polite past progressive negative form for the passive even though the researcher had used the active voice in her question, i.e., "*Sensei wa kyo wa okorimashita ka?* (Did your teacher tell off [class] today?):

(15)

- J: *un okot-tenai desu.*
tell off-PAST.NEG COP
"Hum, (he) did not tell off (class)."
ichinensei-wa Sugi xxx okor-are-te
i-masendeshita
yr 1-TOP_{SUBJ} (name) [inaudible] tell off-PASS-COMP
exist-POL.PAST.NEG
"Year One students were not being told off (by) Sugi [inaudible]."

This example is close to a full passive sentence and provides sufficient evidence of the emergence of a non-canonical mapping structure. Although part of the utterance was unfortunately inaudible, John clearly provided the patientive SUBJ in the form of TOP, "*ichinensei-wa*". In addition, the word just before the inaudible part was his teacher's name "*Tsugi*". Although he pronounced this as "*Sugi*", because he was sometimes troubled with the sound "*tsu*" placed at the beginning of a word, the missing part and the particle could be "*sensei-ni* (by Mr [Lit., Teacher] Tsugi)" and as such this could be counted as the agentive ADJ without the dative particle *-ni* (i.e., positive but insufficient evidence in the same utterance).

In Session 18, 20⁸, 22 and 24 no passives were produced, even though the story telling task was used in both Sessions 18 and 22.

Session 25:

While telling the "Tortoise story" in Session 25, John described the scene where the dog was chased by the bees in a way that appeared to be an attempt at the use of a passive as in (16).

(16)

- J: *sorede mada inu-wa sas-at-te*
i-masen.
then not yet dog-TOP_{SUBJ} sting-PASS-COMP
exist-NEG
"Then, the dog has not been stung yet."

His utterance includes "*sasatte imasen*" possibly from the intransitive verb "*sasar-u*" meaning "stick in". Therefore, it literally sounds like "the dog has not stuck in (the bee) yet". Given that John had previously described the same picture using the passive form, i.e. "*sas-are-ru* (sting-PASS)" from the transitive verb "*sas-u* (sting)", albeit with some lexical or phonological difficulty, it is reasonable to assume that he intended to say "the dog has not been stung yet". In addition, it is most likely that, just as he produced "*okor-at-teru*" instead of "*okor-are-teru*" in Session 10, he still tended to use a double consonant "*-at-(te)*" as in "*sas-at-te*" instead of "*-are-*" as in "*sas-are-te*" when producing the passive morpheme. Therefore, although patientive SUBJ supplied was clearly marked with the TOP marker *-wa*, this was coded as positive but insufficient evidence.

In the final Session 26 there was no incidence of passives.

In summary, despite the infrequent occurrences of the passive form, which are consistent with data taken from the naturalistic productions in other longitudinal studies (e.g., Matsumoto, 1998), it seems reasonable to conclude

that there is sufficient evidence to suggest that John acquired non-canonical mapping to produce passives (i.e., in Session 16⁹). According to Pienemann (1998), unlike the emergent point of verbal morphology which requires more stringent criteria to distinguish it from memorised chunks, one case of the production of a syntactic structure is sufficient to justify the emergence of that rule. Based on this rule of emergence, John's production of passives suggests sufficient evidence of acquisition.

Emergence of Canonical Mapping Structures and the Passive Voice

RQ1: Does the passive voice emerge later than canonical mapping structures in the interlanguage of a child acquiring JSL naturalistically?

For the purpose of comparison, total numbers of occurrences of these structures in each session in Tables 2 and 3 are combined in Table 4 below. The dotted lines show that the canonical mapping structures such as the active voice emerged earlier than the passive voice as a non-canonical mapping structure.

The table clearly shows that there were differences in the production between these two kinds of structures in terms of the quantity and the emergence point. The results indicate that in John's use of Japanese the acquisition of canonical sentences such as the active voice occurred much earlier and in larger quantities than that of the passive voice involving non-canonical mapping. This result is consistent with earlier research (e.g. Kawaguchi, 2007) suggesting that the learner's choice of a syntactic structure is constrained by his/her developmental skills in argument-function mapping as predicted by UAH and LMH. Therefore, regardless of age or context, there is evidence to support these two hypotheses predicting the order of acquisition of canonical and non-canonical mapping structures.

NTL and TL Productions of the Passive Voice

RQ2: How does the passive voice develop from NTL to TL use in the child language?

To answer this research question, not only quantitative but qualitative analyses using examples of the passive voice in John's language was undertaken.

The results of this study clearly show that the passive voice was acquired at a much later point in time, namely in Session 16, when compared to canonical mapping structures such as the active voice (in Session 1), but that between these emergent points, some interlanguage structures, i.e. NTL and TL use of the passive voice were observed, hence there appears to be a developmental sequence of the passive voice in terms of accuracy.

Table 4 shows that whereas canonical mapping structures were present from the beginning through to the end of the data collection period, the passive voice, which demands more advanced mapping, i.e., non-canonical mapping, began occurring in both TL and NTL ways in Session 10. This session where sufficient evidence, insufficient evidence and negative evidence of the acquisition of the passives were all

Table 4. Occurrences of the canonical mapping structures and passive voice in John's development

	1	2	3	4	6	8	10	12	14	15	16	18	20	22	24	25	26	Total	
Passives																			
Canonical mapping structures	16	21	46	31	54	35	66	61	68	57	106	70	53	86	60	54	100	984	5 (4)

1. The figure before the first slash means the number of cases of sufficient evidence;
2. The figure before the second slash means the number of cases of positive but insufficient evidence;
3. The figure after the second slash means the number of cases of negative evidence;
4. The blank cell means that no evidence was available.
5. Cases of passive verb morphology are indicated in the bracket.

present could be considered to be what Keatinge and Keßler (2009) call a prerequisite stage. The use of an alternative strategy, namely the use of the active voice in the passive context (Wang, 2009) was also observed during the same session. It was only in Session 16 that the near full passive sentence containing patientive TOP_{SUBJ} marked by the topic particle *-wa*, finally emerged. Furthermore, and similar to the results of the study by Keatinge and Keßler (2009), in the current study the passive verb morphology of the child was unstable throughout the data collection period.

CONCLUSION

The main aim of this study was to test the veracity of the extended PT, and particularly with reference to UAH and LMH, by exploring the acquisition of the passive voice by a child learner of Japanese L2. The goal of the study was to compare the emergence of the passive voice with that of canonical mapping structures, including the active voice, in the interlanguage of the naturalistic child learner. The results of the study show that the child acquired the passive voice much later than canonical mapping structures. This developmental sequence follows the stages based on the extended PT, demonstrating that the learner's choice of a syntactic structure is restricted by developmental skills as predicted by the UAH and LMH. The results of the current study match those of earlier research with regard to the acquisition of non-canonical mapping structures by adult learners (e.g. Kawaguchi, 2007). Further, the current study shows that as with the adult ESL learners in the study by Keatinge and Keßler (2009), the child JSL learner appeared to have a "prerequisite" stage in the acquisition of the passive voice where he resorted to the use of an alternative structure, namely the active voice, but also attempted to produce the passive voice. After that prerequisite stage, he was able to produce the passive voice in a TL manner by successfully synchronising his advanced linguistic skills with pragmatic competence. However, overall his passive morphology was NTL until the end of the data collection period.

Finally, although the strength of this study comes from the use of a theory, namely the extended version of PT, readers should be reminded of the limitations of the study too: this is a case study of a single informant acquiring JSL in Australia. Therefore more PT-based longitudinal studies on the development of the passive voice need to be conducted in the future to provide evidence for the validity of UAH and LMH. Such research would also serve to establish whether or not a prerequisite stage in the acquisition of the passive voice is common in a variety of L2 learning contexts.

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ENDNOTES

1. The other main Hypothesis describing the development of syntax and underpinned by the extended PT is the

Topic Hypothesis (TH) which more recently has been updated to the Prominence Hypothesis (PH) (Bettoni & Di Biase, 2015; Kawaguchi, 2015). Note, however, both the TH and PH are outside the scope of the current study.

2. Because the term 'prominence' was previously used in LMH, Kawaguchi (2015) warns readers not to confuse LMH with the Prominence Hypothesis (Bettoni & Di Biase, 2015; Kawaguchi, 2015). However, as this study does not deal with the PH and focuses on comparing canonical (UAH) and non-canonical (LMH) mapping structures, in this paper we use the term 'prominence' based on Kawaguchi (2005, 2007, 2009).
3. If V is an intransitive verb, the sentence is SV. Contrary to Platzack (1996) who claims that SVO is the universal canonical word order across languages, the UAH (Pienemann et al., 1995) takes a stance that canonical word order is language specific.
4. The names of the informant and his interlocutor in this paper are pseudonyms.
5. In this study, this includes a lexical or main verb in the V-*te*V structure.
6. TLP is used in the table below to represent target-like particle and NTLP non-target like particles.
7. The word used by John was "*nigerareta*", but it is not clear whether this was a case of passive or potential verb morphology as the verb "*nigeru* (escape)" is a vowel-stem verb which conjugates in the same way for both passives and potentials.
8. See Endnote 8. This case is ambiguous.
9. Aside from the passives, there are two other syntactic structures that require canonical mapping in Japanese: the causatives and benefactives (Kawaguchi, 2007). Although this paper does not touch upon the acquisition of these structures, they both emerged after the passives, that is, the emergence point of non-canonical mapping structures as a whole in John's language was indeed Session 16.

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APPENDIX. LIST OF ABBREVIATIONS

ACC	accusative
COP	copula
COMP	complementiser
DAT	dative
DUR	durative
EP	extended predicate
FP	final particle
GEN	genitive
INT	intermediate (form)
NEG	negative
NOM	nominative
P	particle
PASS	passive
PAST	past
PERF	perfective
POL	polite
PROG	progressive
QUOT	quotative
φ	zero (i.e., ellipsis)