The Acquisition of the Verb "make" by Japanese Learners of English

Masato HAYASHI

Abstract

This study investigates how Japanese learners of English acquire the English verb "make" within the framework of language transfer and prototype. For this purpose, three kinds of tests were conducted, in which Japanese university students and adult native speakers of English participated. Major findings are   prototypical instances of the verb were shared by both participant groups,   the influence of Japanese was found in the Japanese participants' production of their instances,   the Japanese participants were not aware of mechanisms underlying the extension of senses of the verb, and   the prototypical sense of "make" was not necessarily easy for Japanese learners of English to acquire, and the influence of Japanese operated at the conceptual level as well as at the lexical level.

Key words

language transfer, prototypical instances, prototypical senses, the verb "make"

. Introduction

Lexical acquisition has been receiving growing attention in the field of second language acquisition SLA these days. This is because, with the growing popularity of cognitive linguistics and corpus linguistics, more importance has been placed on lexis in linguistics, which has a strong influence on SLA research. In fact, using findings obtained from cognitive linguistics, several studies on the acquisition of English polysemous words by Japanese learners of English have been conducted by several researchers see, for example, Cho,   ; Hayashi,   ,   ; Tanaka,   ; Tanaka, Takahashi and Abe,   ; Shirai,   ; Yamaoka,   ,   . These studies, which have been conducted within a framework of language transfer and prototype theory, have shown   prototypical senses of L   lexical items are easier for learners to acquire than less prototypical ones, and   learners' acquisition of various senses is influenced and constrained by their first language.

However, these studies are not without problems. First, only a few studies so far have investigated the way in which senses of a polysemous word are represented in Japanese learners' minds. One notable exception is a study done by Imai   investigating how the English verb "wear" is understood by native speakers of English and Japanese university students studying English. In order to fully investigate the acquisition of polysemous words by second language learners, I feel it is necessary to know the way learners understand each sense and how their understanding differs from that of native speakers. Another problem is that the previous studies involved an arbitrary distinction between instances and senses of a linguistic item. These studies argue that prototypical instances are those which take a concrete noun as their object, and that prototypical senses are easier to acquire than less prototypical ones, with the degree of deviation from the prototypical sense affecting the difficulty of acquisition. However, it does not seem so simple a matter. To take the prepo-

sition "on" as an example, the "on" in the sentence "The dog is on the chain," which takes a concrete noun as its object, would not seem to be easier to acquire than the "on" in the sentence "She lives on a pension." A clear distinction should be made between instances and senses when we investigate the acquisition of polysemous words within the framework of transfer and prototype.

This study, undertaken to address the shortcomings of previous studies, looks into how each sense of the verb "make" is understood by Japanese learners of English, and attempts to investigate the acquisition [i] of these senses by Japanese learners.

. Review of the literature

Several investigations into the acquisition of English polysemous words have been conducted within the framework of language transfer and prototype theory. Here, experimental studies on the acquisition of English verbs by Japanese learners of English are reported on.

Tanaka, Takahashi, and Abe   investigated the acquisition of the verb "make" by Japanese learners of English. In their study, the authors are concerned with the properties of noun phrases that this verb takes as direct objects, and examine how Japanese learners acquire the meaning potential of the verb. Three groups of Japanese learners at significantly different level of English proficiency were asked to judge the acceptability of the sentences containing the verb "make" by using a -point scale. These results were compared with those of native speakers. The study found that: prototypical items were accepted most frequently regardless of the level of the participants,   there was a strong correlation between L   proficiency and reliance on L , with participants at a higher proficiency level relying less on their L , and consequently more accurately judging the distinction between prototypical and non-prototypical items, and   the acceptability judgment by the Japanese participants at higher proficiency levels approached that of the native speakers.

Imai   investigates how native speakers of English and Japanese university students understand the English verb "wear." She conducted two experiments. In the first experiment, participants were given   sentences containing "wear," and were asked to sort the sentences into groups according to the sense of this verb. Data gained from this experiment was analyzed, with the use of the Multidimensional scaling   MDS procedure. The second experiment asked participants to judge the acceptability of   sentences containing "wear," thirteen sentences of which were unconventional, using a -point scale. The results show that the Japanese learners of English differed from the native speakers of English in the understanding of various senses of the verb "wear." While native speakers of English perceive senses of the verb as orderly and structured, Japanese participants' understanding of the verb is extremely impoverished, and influence from Japanese can be seen in their understanding of various senses of the verb.

Shirai   investigated the acquisition of "put" by Japanese learners of English. He pointed out the lack of consistency found in previous studies' use of the word "prototype," and categorized prototype into L   prototype and   L   prototype, which was subcategorized into native speaker prototype   NS prototype and interlanguage prototype   IL prototype . In his study, he stressed the importance of taking into consideration the interaction between L   prototype and L   prototype. The participants, three groups of Japanese learners of English and one group of native speakers as a control group, were asked to produce sentences with typical uses of "put," and were asked to judge the acceptability of   sentences containing "put" using a -point scale. The results of his study show   the learners' IL prototype formation tended to be constrained by L

transfer,　the learners had more difficulty acquiring less prototypical items within the L　,　the learners at higher proficiency levels had a more accurate knowledge of the meaning potential of "put," and　the development of the learners' knowledge about the meaning potential tended to be constrained by prototypicality and transfer.

In all of the studies reported here no attention is paid to the distinction between instances and senses. In Tanaka, Takahashi, and Abe　　　and Shirai　　　, there is an additional problem in that these studies do not investigate how senses of a polysemous word are represented in Japanese learners' minds.

. The Study

Three kinds of tests were used in this study: the Production Test, the Semantic Relatedness Test and the Acceptability Judgment Test　see Appendices A and B　.

Production Test

The purpose of this test was to elicit prototypical instances of the verb "make" for Japanese learners of English and native speakers of English. Eliciting prototypical instances served as a step to identify a prototypical sense and a lexical network for the verb "make."

Participants

The participants consisted of　Japanese learners of English and　native speakers of English. The Japanese participants　JSs　were　university freshmen,　sophomores,　juniors and　senior. Of the participants,　majored in English and　majored in elementary school education at the same university. The control group of　adult native speakers of English　NSs　consisted of one university student in the United States,　faculty members and　part-time teachers at a university in Japan, and　ALTs　assistant language teachers　in Toyama Prefecture.

Materials and Procedures

In this test, the participants were asked to write one sentence using the verb "make"　　see Appendix A　. In the case of the Japanese participants, the test was administered during regular class hours. The native speakers took the test individually.

Data Analysis

The collection and treatment of the data consisted of examining and categorizing sentences written by the participants, with sentences containing an incorrect use of the verb being grouped into a separate category. Japanese learners' examples of the verb were later compared with those of native speakers.

Results and Discussion

The two groups wrote　sentences　see Appendix C　. The sentences written by the two groups are categorized based on Lee　　　. Based on sentence patterns in which the verb "make" can occur, Lee　p. classifies the verb into the following six types.

Subject　*make*　Object　Prepositional Phrase

Subject　*make*　Object

Subject　*make*　Object　Complement

Subject　*make*　Indirect Object　Direct Object

Subject　*make*　Prepositional Phrase

Phrase verb with *make*

Table　below indicates categorization of the sentences produced by both participants based on Lee, with the category "others" provided for an incorrect use of the verb[ii].

Table　　Classification of Sentences Written Using the Verb "Make"

	Category							
	Type	Type	Type	Type	Type	Type	Others	Total
JSs　n								
NSs　n								

Type　Subject　*make*　Object　Prepositional Phrase　　Type　Subject　*make*　Object

Type　Subject　*make*　Object　Complement　　Type　Subject　*make*　Indirect Object　Direct Object

Type　Subject　*make*　Prepositional Phrase　　Type　Phrase verb with *make*

Results of NSs will be discussed first, followed by a discussion of Japanese participants' results. For each participant group, prototypical instances will be determined first, followed by descriptions and explanations of some characteristics found in the sentences.

The sentences produced by the native English-speaking participants are classified into Type , Type and Type , with the number of sentences in Type the largest. It can be said that the instances belonging to Type are prototypical. Looking at the instances in this Type shows that not only concrete nouns but abstract nouns such as "trouble" and "conversation" work as an object of the verb see Appendix C , which will contrast with results of the Japanese participants.

All the correct sentences written by the Japanese participants belong either to Type or to Type , with the number of sentences in Type nearly two times as large as that in Type . So, the instances in Type can also be considered prototypical for them. In most of the sentences belonging to Type , however, relatively small-sized concrete nouns, such as "chair" and "cake," work as an object of the verb see Appendix C . It would, therefore, be more appropriate to say that instances of "make" found in the construction of "make small-sized concrete object" are prototypical. One major reason for this is transfer from Japanese verb "tsukuru," which is considered by Japanese learners to be equivalent to "make."

Regarding the instances in Type , the contraction "subject make me happy" accounts for two -thirds of the production of the sentences. This construction might be learned and memorized as a chunk.

The following observations can be made for the Japanese participant' production of instances of the verb "make."

Instances that occur in the sentence pattern "Subject　*make*　Object" appear to be prototypical.

As compared with NSs, small-sized concrete nouns tend to be an object of the verb for the Japanese participants.

The Japanese verb "tsukuru" influences production of prototypical instances.

Semantic Relatedness Test

This test was used to determine a prototypical sense. Another purpose of the test was to investigate the ways in which English learners understand each sense of the verb "make" and how their understanding differs from that of native speakers.

Participants

The same Japanese learners of English and adult native speakers of English who participated in the Production Test participated in this Semantic Relatedness Test.

Materials and Procedures

Fourteen sentences, all of which included the verb "make," were prepared for the test see Appendix A. An attempt was made in these sentences to cover the full range of uses for the verb. Japanese instructions and Japanese translations of difficult words were given to the Japanese participants.

The participants were asked to sort the sentences into groups depending on the meaning of the verb used. They were also asked to describe the criteria they used to make each group. They were allowed to make as many groups as they wanted. It was also possible to have only one group. They were asked not to use dictionaries. Japanese participants took the test during regular class hours. The native speakers took it individually.

Data Analysis

Multidimensional scaling MDS [iii] was used to analyze similarity judgments made by individual participants. In addition to MDS, a hierarchical cluster analysis[iv] was used to investigate participants' perceptions of similar uses instantiated in the sentences. This was based on the values given to each use in each dimension. In this cluster analysis, the Ward method was employed.

Results and Discussion

The sentences used in the test are provided below for reference see Table. Before results are presented and discussed, it should be added that the sentence, "I'm not made for a doctor," has been excluded from this study, because, as we will see in Section ., native speakers' averaged acceptability rating of this sentence was very low.

Based on a stress value and an RSQ value that each matrix of each solution by the two groups of participants yielded, it was decided that a two-dimensional solution be adopted for MDS conceptualization of the verb. As for the cluster analysis, a four-cluster solution was adopted, which means the verb "make" is assumed by both the participant groups to have four senses. Each cluster solution by the two groups is provided in Appendix D.

The MDS representations of the verb perceived by the two groups are shown below see Figures and , with data obtained from the cluster analysis. The results of the native speakers will be discussed first, fol-

lowed by discussion of the Japanese participants' results.

Table   Sentences used in the Semantic Relatedness Test

A good conversation makes the meal.

Don't make so much noise.

Driver, can you make the airport by 4 o'clock?

He made a promise to go fishing on Sunday with his son.

He makes the hero a real snob in his new film.

I'm not made for a doctor.

Kris will make a fine athlete.

Please make me some coffee.

She made an apple pie.

She made him her secretary.

The hot bath made me feel so good.

The war made a hero of him.

Three and six make nine.

What do you make of the new teacher?

Let us look at the configuration of NSs first see Figure . A quick glance reveals that at one end of the first dimension the X axis are "make so much noise" ins , "made a promise" ins , "make me some coffee" ins and "make an apple pie" ins , and at the other end are "make a fine athlete" ins , "made him her secretary" ins , "made a hero of him" ins and "what ~ make of the new teacher" ins . So the first dimension can be characterized as representing a continuum between "production" and "causation" with the exception of "what ~ make of the new teacher." There is no clear interpretation for the second dimension.

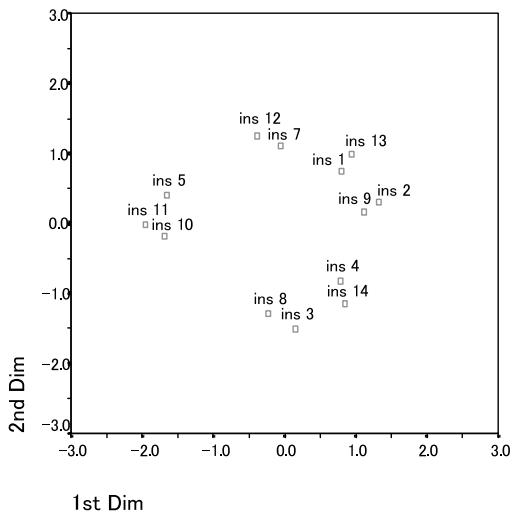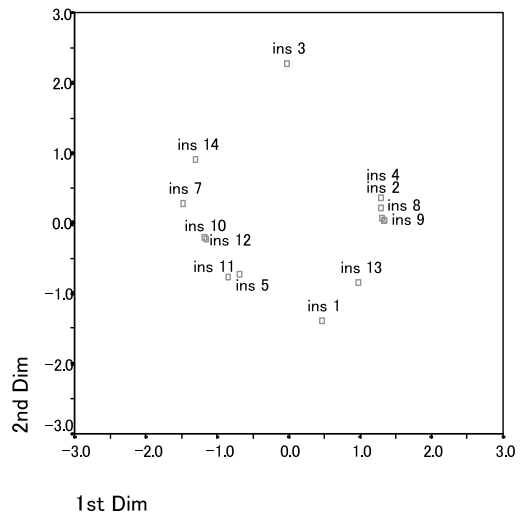**Figure   Configuration of "Make" by JSs**

Figure   Configuration of "Make" by NSs

The instances for NSs seem to be grouped into the following four clusters senses see Figure and Appendix D . Now let us briefly look at what instances make up each cluster sense they formed.

Cluster

This cluster consists of the instances of "make" in "make me some coffee" ins , "made an apple pie" ins , "make so much noise" ins and "made a promise" ins . What links these four instances is that the "production" aspect of the verb is highlighted in each. Judging from the results of the Production Test and other studies, this cluster can be said to represent the NSs' prototypical sense of the verb "make." Let us call this "Sense-Proto."

Cluster

The instances in "makes the meal" ins and "make nine" ins form this cluster. In these instances, as those in Sense-Proto, the "production" aspect of the verb is highlighted. In fact, at the next stage these two senses merge into a larger one. What, then, makes this sense different from Sense-Proto? It can be observed that in the instances here the subject becomes part of the object. In "A good conversation makes the meal," an act of conversation can be an important part of enjoying the meal. In "Three and six make nine," the subjects "three" and "six" combine to make up the object "nine." Kazumi , distinguishes between uses of "make" found in Cluster and those in this cluster, calling them " external factor-providing *make*" and "element-providing *make*," [v] respectively, though she states that the verb "make" shares the core meaning of "providing the essential s for" , p. . Let us call the sense represented by this cluster "Sense-A."

Cluster

This cluster consists of six instances. They are "make a fine athlete" ins , "what ~ make of the new teacher" ins , "made him her secretary" ins , "made a hero of him" ins , "makes the hero a real snob" ins and "made me feel so good" ins . What links these instances is the "causation" aspect of the verb. In these instances the "causation" aspect is highlighted.

Some explanation may be necessary for "make a fine athlete" and "what ~ make of the new teacher." According to Kazumi , , the instance in "make a fine athlete" is characterized as "element-providing *make*," and it should be clustered with the instances in Cluster . One possible reason this instance is not included in Cluster is that the "causation" aspect is felt more strongly among the NSs. In " Kris will make a fine athlete," it is easy to understand the "causation" aspect is working here when we put "herself" just after the verb. The instance "what ~ make of the new teacher" can be explained in the following way. In "what do you make of the new teacher," the subject "you" does not make an entity out of "the new teacher," but out of "the new teacher" it creates "judgment" about the person. So we can see metaphorical extension here. Let us call the sense represented by this cluster "Sense-B."
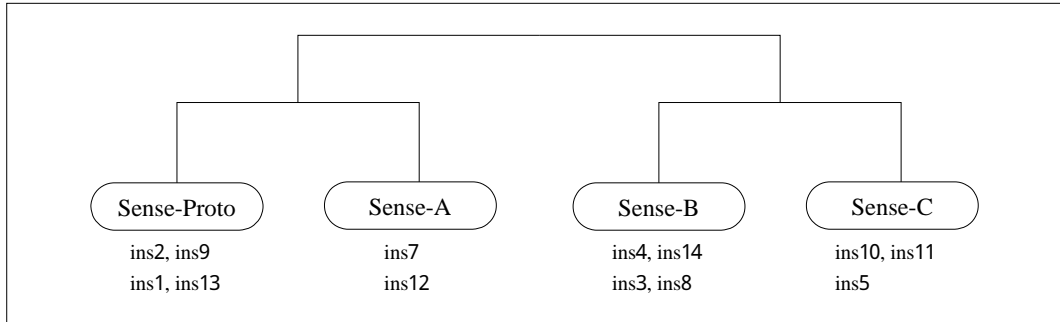
Cluster

This cluster consists of only one instance, "make the airport" ins . Lee , p. states that this is a natural extension of the sense exemplified in such a sentence as "He made a journey," and argues p. that the object in this kind of sentence can be a goal, which, in this case, is a location. The native participants, however, judged the instance as not related to the other senses. The sense represented by this cluster is named "Sense-C."

Regarding relationships among the four senses, the following can be observed see Figure . Sense-

Proto and Sense-A are close to each other. The "production" aspect found in all the instances in both the clusters is likely the reason for this. Sense-B and Sense-C are close to each other. The instances representing Sense-B are those in which the "causation" aspect is highlighted, while the instance that represents Sense-C is thought to be extended from Sense-A. So, the relation of Sense-C to Sense-A is not clear here.

Figure   Lexical Network of "Make" for NSs

Sense-Proto	Sense-A	Sense-B	Sense-C
ins , ins	ins	ins , ins	ins , ins
ins , ins	ins	ins , ins	ins

Now let us turn to results of the Japanese participants see Figure   . At one end are "make so much noise" ins , "made an apple pie" ins , "make nine" ins   and "makes the meal" ins , and at the other end are "make me feel" ins   , "made him her secretary" ins   and "makes the hero a real snob" ins   . So, for the Japanese participants, too, the first dimension can be characterized as representing a continuum between "production" and "causation." An interpretation of the second dimension was not possible.

The results from the Japanese participants form the following four clusters senses   see Figure   and Appendix D .

Cluster

This cluster consists of "make so much noise" ins   , "made an apple pie" ins   , "makes the meal" ins   and "make nine" ins   . What links these instances is the "production" aspect of the verb "make." Based on the results of the Production Test and other studies, this cluster can be said to represent the prototypical sense. Let us call this "Sense-Proto."

Cluster

This cluster consists of "make a fine athlete" ins   and "make a hero of him" ins   . One possible reason for this linking is that the "causation" aspect is strongly felt in these instances for the Japanese participants. Let us call the sense represented by this cluster "Sense-A."

Cluster

This cluster consists of "made a promise" ins   , "what ~ make of the new teacher" ins   , "make the airport" ins   and "make me some coffee" ins   . The formation of this cluster is difficult to interpret. The instances with the "production" aspect highlighted and those with the "causation" aspect highlighted are clustered together. They are clustered with no significant reason. The sense represented by this cluster is named "Sense-B."

Cluster

The instances "made him her secretary" ins   , "made me feel so good" ins   and "makes the hero a real snob" ins   form this cluster. The "causation" aspect highlighted in these instances is the reason for

this clustering. Let us name the sense represented by this cluster "Sense-C."

As for the relationships among the four senses, the following observations can be made   see Figure   . Sense-Proto and Sense-A are close to each other. This clustering cannot be explained, because Sense-Proto is composed of the instances representing the "production" aspect of the verb, and Sense-A is composed of those representing the "causation" aspect. Almost the same thing can be said about the linking of Sense-B to Sense-C. The location of the four senses for the Japanese participants does not seem to carry any particular significance.

Figure   Lexical Network of "Make" for JSs
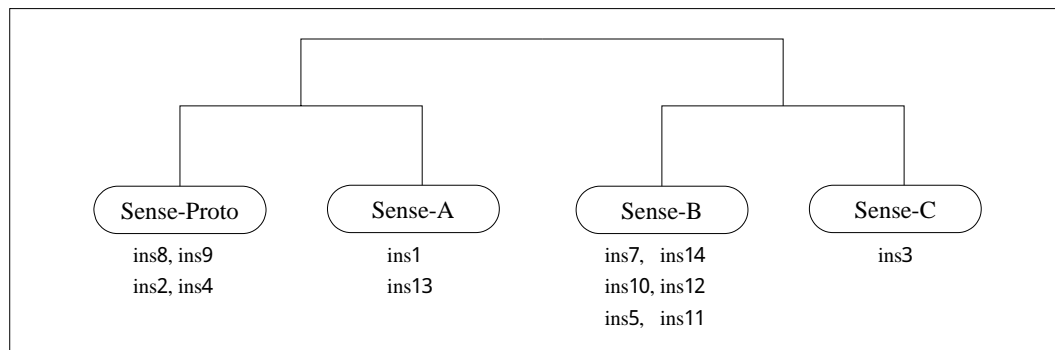
From the above, the following observations can be made.

Both the Japanese participants and the native speakers of English seemed to take into account the difference between the "causation" aspect and the "production" aspect of the verb when judging the similarity in meaning of the instances.

The native speakers' overall network of the senses of the verb can be to some extent explained, while that for the Japanese participants does not seem to carry any significance, which may indicate that the Japanese participants are not aware of mechanisms underlying the extension of senses.

Acceptability Judgment Test

The purpose of this test was to investigate acquisition of the verb "make." The influence of prototypicality and language transfer on the acquisition of instances and senses of the verb is investigated by having participants judge the acceptability of instances of the verb.

Participants

The Japanese participants JSs were   university freshmen,   sophomores, and   juniors, all of whom majored in English. The same twelve adult native speakers of English   NSs   who participated in the Production Test and the Semantic Relatedness Test participated in this study as a control group.

Materials and Procedures

The test was a paper-and-pencil acceptability judgment task   see Appendix B . There were   sentences with the verb "make." Among these,   sentences, which were also used in the Semantic Relatedness Test, used the verb correctly and remaining six sentences used the verb incorrectly. Japanese instructions and Japa-

nese translations of difficult words were provided to the Japanese participants.

The participants were asked to judge the acceptability of the verb underlined in each sentence on a -point scale, with " " being unacceptable and " " acceptable. There was no time limit. Participants were asked not to use dictionaries. Japanese participants took the test during regular class hours. The native speakers took it individually.

Data Analysis

The acceptability ratings given by participants for each instance were tallied for both the groups. These ratings were then averaged in order to arrive at the mean and the standard deviation of each instance for each group. One-way repeated-measures ANOVAs were then carried out, using the averaged scores for each of the instances as the dependent variable, and each of the instances as independent variables, in order to examine if there would be a significant difference across the instances. This was done for each of the groups. Unpaired t-tests were also carried out for all the instances, in order to determine if there would be a significant difference between the participant groups.

Results and Discussion

Table   summarizes the means and the standard deviations of the scores for each instance of "make" for both groups. The scores for each instance are the average of the participants' acceptability ratings given for each instance. Fourteen of the sentences illustrate conventional instances of the verb, and   of them unconventional instances. The unconventional instances are underlined in Table   . The means are also graphically represented in Figure   . A quick look at Table   shows that the acceptability rating for the sentence, "I'm not made for a doctor," is very low even for NSs. Consequently, this is excluded from the study.

A two-way repeated-measures ANOVA was carried out, using the participants' scores of the instances as the dependent variable and the type of the participant groups namely, NSs and JSs and the type of the instances as independent variables. The results see Appendix E show that the type of the instances being rated had a significant effect on the participants' acceptability rating: F   ,   , P   , but that the type of the participant groups did not have a significant effect: F   ,   , P   . The interaction between these two factors is significant   F   ,   , P   .

The main effects were then examined. First, one-way repeated-measures ANOVAs were carried out for each of the groups. This was done to see if there was a significant difference in scores across the instances for each group. The results showed significant differences for both the groups: NSs   F   ,   , P   , and JSs   F   ,   , P   . A Scheffé test was performed in order to determine where differences lay for each group. The results are shown in Table   .

Table   **Means and Standard Deviations for the Scores of Each Instance of "Make"**

	JSs	NSs
Conventional Instance		
A good conversation makes the meal.		
Don't make so much noise.		
Driver, can you make the airport by 4 o'clock?		
He made a promise to go fishing on Sunday with his son.		
He makes the hero a real snob in his new film.		
I'm not made for a doctor.		
Kris will make a fine athlete.		
Please make me some coffee.		
She made an apple pie.		
She made him her secretary.		
The hot bath made me feel so good.		
The war made a hero of him.		
Three and six make nine.		
What do you make of the new teacher?		
Ave.		
Unconventional Instance		
He <u>made a good job</u>.		
I don't want to <u>make any children yet</u>.		
I <u>made the text of my speech</u>.		
The farmer <u>makes potatoes</u>.		
We <u>made a good relationship</u>.		
You have to <u>make a good tradition</u>.		
Ave.		

ins   I'm not made for a doctor   is not included here.

Figure   **Acceptability Judgment by the participant groups**
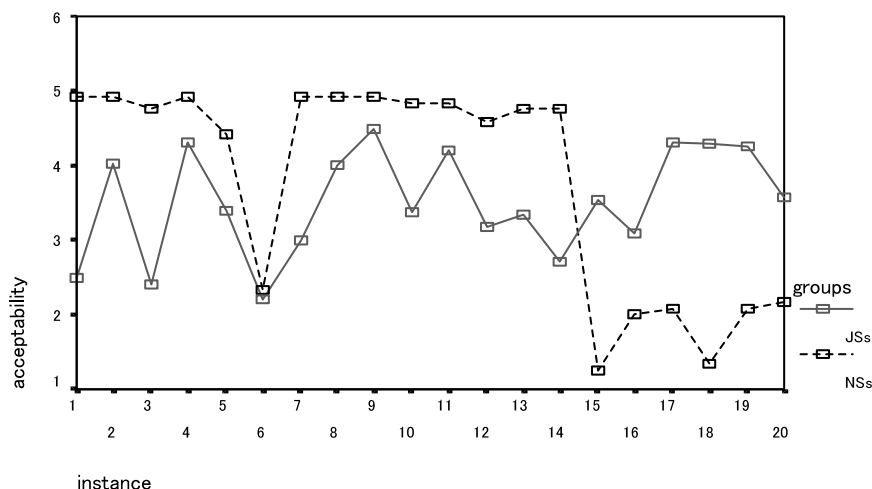
Table   The Order of Acceptability Ratings for the Instances of "Make"

Group	Order of Judgment
JSs	ins ins ins ins ins ins ins ins ins ins ins
	ins ins ins ins ins ins ins ins
	ins ins , ins , ins ins ins , ins ins ins , ins
	ins ins , ins ins ins , ins ins ins , ins
NSs	ins ins ins ins ins ins ins ins ins ins ins
	ins ins ins ins ins ins ins ins

The inequality sign >   indicates that there is a significant difference at the .   level.
The unconventional instances are underlined.

Let us then look at how JSs and NSs differ from each other in their ratings for each instance. In order to find out if there is a significant difference between JSs and NSs for each instance, Friedman tests were carried out. The instances that show no significant difference between NSs and JSs are listed in Table .

Table   Instances with no significant difference between NSs and JSs

Conventional Instance	Order of Correct Judgment			
She made an apple pie.	NSs	JSs	p	n.s.
The hot bath made me feel so good.	NSs	JSs	p	n.s.

Let us first look at the NSs participants. A quick look at Figure   reveals that NSs accept all the conventional instances and reject all the unconventional instances very distinctly. The average of their acceptability rating for the conventional instances is   , while that for the unconventional instances is   see Table   . This indicates consistency among NSs in distinguishing conventional instances from unconventional instances. There is a significant difference between each of the conventional instances and each of the unconventional instances. In addition, there is no significant difference in acceptance between any given two conventional instances, and there is no significant difference in rejection between any given two unconventional instances   see Table   .

NSs participants formed four senses in the Semantic Relatedness Test. Averaged acceptability ratings for Sense-Proto, Sense-A, Sense-B and Sense-C are   ,   ,   and   , respectively   see Appendix F . This indicates that they rate all the senses rather similarly.

How did the Japanese participants do? From Figure   we can see that they did not accept the conventional instances and reject the unconventional instances so distinctly. The average of their acceptability ratings for unconventional instances is higher that that for conventional instances,   and   respectively   see Table   . In fact, Table   shows that there are significant differences among the Japanese participants across the conventional instances and that three of the unconventional instances were rated significantly more acceptable than some of the conventional instances.

Senses formed for JSs were Sense-Proto, Sense-A, Sense-B and Sense-C, with average acceptability ratings of   ,   ,   and   , respectively   see Appendix F . It can therefore be said that the prototypical sense is not necessarily acquired easily.

Let us take a closer look at some of the instances. The Japanese participants have very high acceptability ratings for the ins   and ins . The high rating for ins   can be explained by the influence of the Japanese verb "tsukuru," which is thought by Japanese learners of English to be an equivalent of "make." As a "search for equivalent strategy"   see Tanaka,   argues, second language learners tend to think that there is a one-to-one correspondence between a lexical item in their mother tongue and that in the target language. And once they perceive that a lexical item in their mother tongue and that in the target language are similar, transfer occurs. As Table   shows, there is no significant difference in accepting this instance between JSs and NSs. It can be said that the Japanese participants have acquired this instance.

The high acceptability rating for ins   can be explained in the following way. As we saw in the Production Test, JSs produced quite a few instances belonging to Type   Subject *make* Object Complement , to which ins   belongs. True, most of the sentences they produced were those in which an adjective such as "happy" and "angry" works as a complement and only one sentence in which a verb root works as a complement was produced   see Appendix C . But frequent production of these sentences indicates that the Japanese participants are familiar with this construction. It is assumed that this use of "make" strikes Japanese learners of English as something very peculiar to English, and consequently making it a use that they do not soon forget. This may boost the Japanese participants' acceptability rating for ins .

The Japanese participant group has very high acceptability ratings for ins   , ins   and ins   , though all of them are unconventional. The high acceptability ratings are thought to be caused by the transfer from the Japanese verb "tsukuru." The instance   can be translated into Japanese, using "tsukuru," and the instances   and   can be translated, using "tsukutta," a past form of "tsukuru." It can be said that high acceptability ratings are the result of a "search for equivalent strategy."

One instance shows an interesting result. The Japanese participants have a low acceptability rating of   for ins   see Table   . This instance can be translated into Japanese, using "tsukuru." Why doesn't a "search for equivalent strategy" work here? This seems to be because the subject of the sentence is inanimate. The Japanese sentence in which the verb "tsukuru" is used takes an animate being as the subject.[vi] Their assumption that the typical sentence in which "tsukuru" is used takes an animate being as the subject leads them to rate the acceptability of ins   very low.[vii] Put more generally, the event the verb "tsukuru" describes influences the acceptability of "make." Here, we can observe the transfer working not at the lexical level, but at the conceptual level.

Let us then look at the relationship between the lexical network and acquisition of the instances for the Japanese participants. In order to investigate this, we need to examine whether or not there is any relationship between the results obtained from the Acceptability Judgment Test and those obtained from the Semantic Relatedness Test. Spearman's Rank-order correlation is used for this purpose.

According to the results obtained from Spearman's Rank-order correlation   see Appendix G , there is no correlation between the acceptability judgment of the instances and the lexical networks for the Japanese participant group.

An interpretation of this study yields following observations.

The prototypical sense of "make" is not necessarily easy for Japanese learners of English to acquire.

The acceptability ratings by Japanese learners of instances of "make" are influenced by the transfer from the Japanese verb "tsukuru."

The influence of "tsukuru" works not only at the lexical level but at the conceptual level as well.

There is no relationship between the lexical network of the verb and its acquisition.

. Summary

The purpose of this study was to investigate how Japanese learners of English acquire the English verb "make" within the framework of language transfer and prototype. A special focus is placed on the investigation of the way senses of the verb are represented in Japanese learners' minds and the reexamination of the hypothesis that prototypical senses are easier to acquire, with a clear distinction made between instances and senses. For this purpose, the following three experiments were conducted: the Production Test, the Semantic Relatedness Test and the Acceptability Judgment Test.

The Production Test was conducted to elicit prototypical instances for the verb "make" both for Japanese learners of English and native speakers of English. This serves as a necessary step to identify a prototypical sense and a lexical network for the verb. The results of this test revealed that instances that occur in the sentence pattern "Subject *make* Object" are thought to be prototypical both for the Japanese learners of English and the native speakers of English. The results also indicate that the Japanese verb "tsukuru" influences the Japanese learners' production of prototypical instances of the verb.

The Semantic Relatedness Test was conducted to examine the way senses of the verb were organized both in the minds of Japanese learners and in the minds of native English speakers. The results show that both the Japanese participants and the native speakers of English seemed to take into account the difference between the "causation" aspect and the "production" aspect of the verb when judging the similarity in meaning of the instances. It was also found that the Japanese participants' overall network of the senses of the verb cannot be explained, which indicates that they are not aware of mechanisms underlying the extension of senses.

The Acceptability Judgment Test was used to investigate how prototypicality and language transfer influence the acquisition of instances and senses of the verb. The results of the test revealed the following. The prototypical sense was not necessarily easy for the Japanese learners of English to acquire. The acceptability ratings of "make" by them were influenced by the transfer from the Japanese verb "tsukuru." The influence of "tsukuru" seems to operate at the conceptual level as well.

The relationship between the lexical network and acquisition of the instances of the verb for the Japanese participants was also examined. No correlation between them was found for the Japanese participant group.

Acknowledgments

NOTES

[i] In this paper, "acquisition" is discussed in Section , where it is decided that a Japanese participant group has acquired an item when there is no statistically significant difference between their acceptability judgment

of the item and that of the native speakers of English.

[ii] Only a sentence in which a mistake occurs that involves the verb "make," or the construction the verb forms, is grouped into the category "others." So, a sentence such as "I make him to go there" is included in "others," but the sentence "My mother makes a dinner" is included in Type .

[iii] Multidimensional scaling MDS is an exploratory technique used to visualize proximities between items in a low dimensional space. In MDS, in order to fully represent relationships between items, it is necessary to have the same number of dimensions as items. For example, when items are to be judged for their similarity to each other, an -dimensional representation is needed. However, it is impossible to describe an -dimentional representation. No more than three dimensions are recommended, with two-dimensional representations being most highly recommended.

[iv] The cluster analysis is a data analytical tool for solving classification problems. Its object is to sort items into clusters, the degree of association being strong between members of the same cluster and weak between members of different clusters.

[v] Kazumi , p. explains both uses in the following way: if the referent of the subject constitutes the referent of the object or possesses necessary qualities for the referent of the object, the use is called "element -providing *make*," and if the referent of the subject is a person who actually manufactures or produces the referent of the object, the uses of *make* is called " external factor-providing *make*."

[vi] A small experiment, in which Japanese university students were asked to write one Japanese sentence using "tsukuru," showed that students produced a sentence where a human being works as a subject, and that the other students produced a sentence in which a subject is omitted but the context tells us the human subject is omitted.

[vii] Some might say that Japanese learners generally tend to rate the acceptability of the sentence with an animate subject low, and that this leads to the low acceptability rating of ins . The high acceptability rating of ins , however, may be proof against this.

References

Cho, K. . A cognitive linguistic approach to the acquisition of English prepositions. *JACET Bulletin*, : .

Hayashi, M. . The acquisition of the prepositions "in" and "on" by Japanese learners of English. *JACET Bulletin*, : .

Hayashi, M. . A study on Japanese learners' acquisition of the English prepositions "in" and "on." *Bulletin of Hokuriku University*, : .

Imai, M. . Gaikokugo gakushuusha no goigakushuu ni okeru mondaiten Kotoba no imi hyoushou no kenchi kara What is missing in L word meaning representation?: Problems in second language vocabulary learning . *The Japanese Journal of Educational Psychology*, : .

Kazumi, Y. . Eigo-no dooshi *make* ni kansuru ichi koosatsu Another look at the English verb *make* . *Studies of Language and Culture*, : .

Kazumi, Y. . What makes the meaning of the English verb *make*? *Tsukuba English Studies*, : .

Lee, K. . Getting at the meaning of *make*. In E. H. Casad Ed. , *Cognitive linguistics in the Redwoods*: *The expansion of a new paradigm in linguistics* pp. . Berlin: Mouton de Gruyter.

Shirai, Y. . The acquisition of the basic verb "put" by Japanese EFL learners: Prototype and transfer. *Gogaku Kyouiku Kenkyuu Ronsou*, : .

Tanaka, S. . *Language transfer as a constraint on lexico−semantic development in adults learning a second language in*

acquisition−poor environments. Doctoral dissertation, Teachers College, Columbia University.

Tanaka, S., Takahashi, T. & Abe, H.   . Acquisition of the lexeme "make" by Japanese learners of English. *Eigo Eibungaku Shinchou*   ,   .

Yamaoka, T.   . A prototype analysis of the learning of "on" by Japanese learners of English and the potentiality of proto-type contrastive analysis   part   . *Hyogo University of Teacher Education Journal* ,   :   .

Yamaoka, T.   . A prototype analysis of the learning of "on" by Japanese learners of English and the potentiality of proto-type contrastive analysis   part   . *Hyogo University of Teacher Education Journal* ,   :   .

Appendix A   The Production Test and the Semantic Relatedness Test

Please write one sentence using the verb "make" or its inflected form such as "made" and "making" .

Below you will see   sentences containing the verb "make" or its inflected form . Please sort the sentences into groups depending on the meaning of the verb used. You can make as many groups as you wish. It is possible to have only one group. Then, please describe what criteria you used to make each group.

A good conversation makes the meal.

Don't make so much noise.

Driver, can you make the airport by   o'clock?

He made a promise to go fishing on Sunday with his son.

He makes the hero a real snob in his new film.

I'm not made for a doctor.

Kris will make a fine athlete.

Please make me some coffee.

She made an apple pie.

She made him her secretary.

The hot bath made me feel so good.

The war made a hero of him.

Three and six make nine.

What do you make of the new teacher?

Appendix B   The Acceptability Judgment Test

Below are   sentences containing the verb "make" or its inflected form . Please judge the acceptability of the verb underlined in each sentence according to the scale provided.

YOUR JUDGMENT: Number   would indicate an unacceptable use whereas number   would indicate an acceptable use. For example, if you think the underlined verb is unacceptable, you should circle number . If you are unsure, circle . A completely acceptable use would be indicated by circling number . Number   would indicate that you felt the use was probably unacceptable but weren't entirely sure. Likewise, number   would indicate that you felt the use was probably acceptable but weren't entirely sure.

A good conversation <u>makes</u> the meal.   Unacceptable   acceptable

Don't <u>make</u> so much noise.   Unacceptable   acceptable

Driver, can you <u>make</u> the airport by   o'clock?   Unacceptable   acceptable

He <u>made</u> a good job.   Unacceptable   acceptable

He <u>made</u> a promise to go fishing on Sunday with his son. Unacceptable   acceptable

He <u>makes</u> the hero a real snob in his new film.   Unacceptable   acceptable

I don't want to <u>make</u> any children yet.   Unacceptable   acceptable

I <u>made</u> the text of my speech.   Unacceptable   acceptable

I'm not <u>made</u> for a doctor.   Unacceptable   acceptable

The Acquisition of the Verb "make" by Japanese Learners of English

Kris will <u>make</u> a fine athlete.   Unacceptable   acceptable

Please <u>make</u> me some coffee.   Unacceptable   acceptable

She <u>made</u> an apple pie.   Unacceptable   acceptable

She <u>made</u> him her secretary.   Unacceptable   acceptable

The farmer <u>makes</u> potatoes.   Unacceptable   acceptable

The hot bath <u>made</u> me feel so good.   Unacceptable   acceptable

The war <u>made</u> a hero of him.   Unacceptable   acceptable

Three and six <u>make</u> nine.   Unacceptable   acceptable

We <u>made</u> a good relationship.   Unacceptable   acceptable

What do you <u>make</u> of the new teacher?   Unacceptable   acceptable

You have to <u>make</u> a good tradition.   Unacceptable   acceptable

Appendix C   Results of the Production Test

Japanese participants

This letter made me happy.

I will make him angry.

Can you make a cake?

The news made me happy.

I make him to go there.

I make a desk.

The news made me happy.

I make a box.

I make a chair.

You make my day.

The jacket is made in Japan.

I will make the cake tomorrow.

I make a cake.

My mother makes a dinner.

The news makes me happy.

My pets make me happy.

He makes me to drive his car.

I make a cake.

She makes me happy.

I make a cake.

We make a big desk.

I make a friend.

She makes a table.

He always makes me happy.

He makes a lot of chairs.

I make a cake.

I make a paper plane.

I made a cake.

He made me happy.

I make it possible.

I make much money by working.

I make you feel better.

My girlfriend makes me angry.

My father made a model car.

Native English–speaking participants

I like to make funny faces.

Don't make trouble for your little sister.

I will make an apple pie today.

Are you trying to make me write this?

Sorry I couldn't make it yesterday.

I have tried to make the most of my stay in Japan.

This morning I made my bed.

The humidity really makes me tired and sleepy.

I wish I could speak Japanese so I could make conversation with everyone at Shotoku.

I made a lot of copies yesterday.

Don't make things difficult for me.

I made a big mistake.

Appendix D   Dendrogram of the cluster analysis

JSs
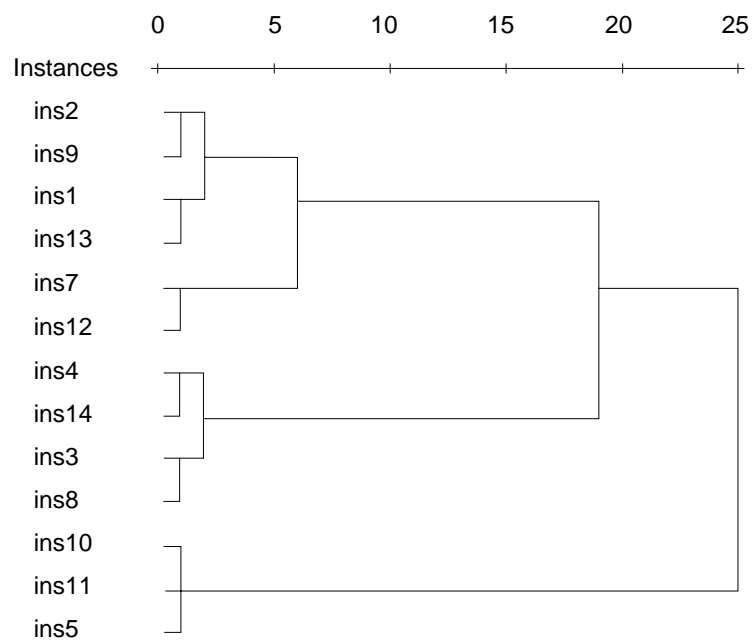
NSs
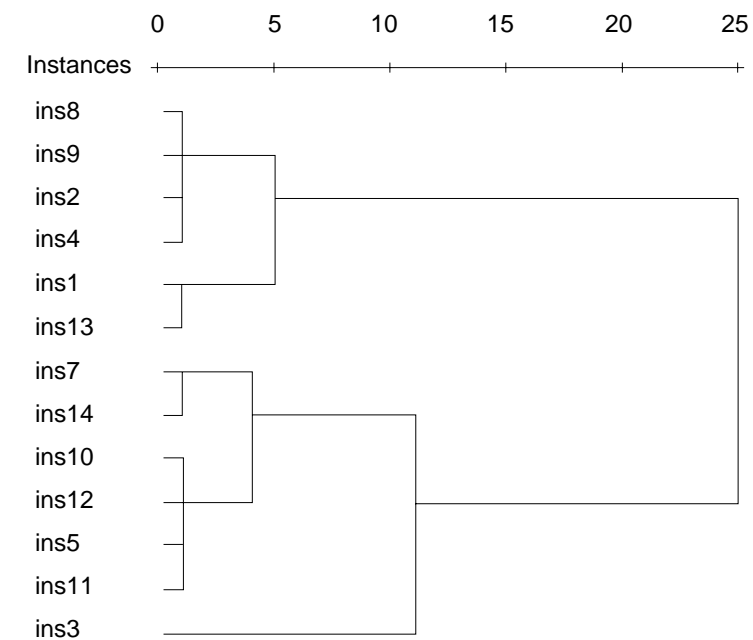
Appendix E   A two−way repeated−measures ANOVA

Source of variance	SS	df	MS	F
Groups A				n.s.
Instances B				
A × B				
Residual				
Total				

: p 001

Appendix F   Averaged acceptability ratings for Senses

Averaged Acceptability Rating of Four Senses of " Make" Obtained in Semantic Relatedness Test for JSs

Sense	Sense-Proto	Sense-A	Sense-B	Sense-C
instances making up sense	ins ins ins ins	ins ins	ins ins ins ins	ins ins ins
Averaged rating				

Averaged Acceptability Rating of Four Senses of " Make" Obtained in Semantic Relatedness Test for NSs

Sense	Sense-Proto	Sense-A	Sense-B	Sense-C
Instances making up sense	ins ins ins ins	ins ins	ins ins ins ins ins ins	ins
Averaged rating				

Appendix G   Spearman's Rank−order correlation

JSs

	st Dim	nd Dim
Acceptability judgment		