# Overgeneralization and Under-generalization in SLA: Evidence from Japanese

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**Abstract**

*The present study reveals the over and under-generalization errors by L1 Japanese speakers learning English as L2. Over and under- generalization errors are caused by the transfer of L1 knowledge. The present study supports the full transfer full access hypothesis (Schwartz and Sprouse, 1996). A group of 20 L1 Japanese speakers performed in the experiment. A group of 20 monolingual native English speakers served as a control group. The materials for the rating task consisted of short genitive phrases equally distributed into two lists. The lists were presented to the participants using the DMDX (reaction time experiment software) for rating task. The participants rated the s-genitive and of-genitive experimental phrases (comprised of 8 experimental conditions).The results indicate that L2 speakers either overgeneralize or under-generalize the linguistic features that are absent in their L1. Unlike English, the definiteness, animacy and prototypicality are absent in Japanese possessive constructions. There is no distinction between "S and of" possessive constructions. The particle "no" is used in all types of possessive expressions. White (1991) suggested that L2 learners may easily overcome under-generalization errors because learners can rely on "positive evidence" to broaden their grammar. However, it may be difficult for learners to unlearn over-generalized errors because for that L2 learners need to rely on "' negative evidence" to restrict their inter-language grammars.*

**Key words:** SLA, Possessives, genitives, overgeneralization, under-generalization

## INTRODUCTION

### Expression of possession in English

English uses a possessive clitic**'s**, a preposition **of** and pronominal form **my, your** to encode the possession. Semantically, a possessive relationship is used to refer to kinship relations (my brother) body parts (the girl's eyes) and legal ownership (jean's shirt). S-genitive is used with animate nouns while "of" is used with inanimate nouns. The present study will focus only on two types of possessive forms s-genitive vs. of genitive constructions. The nature of genitive-s is controversial and much debated issue. Some researchers view it as inflectional suffix (phrasal affix see Zwicky 1987, Lapointe 1990, Miller 1992, Longobardi 1996), others view it as a clitic (Carstairs 1987, Alexadiou 2005). While still there are some other researchers who treat it both as inflectional affix and as a clitic (see Rosenbach 2004, Plank, 1995).

### Expression of Possession in Japanese

Japanese language has only one word order for the possessive relations that is PR>PM order. Japanese language has no articles. It doesn't distinguish between singular and plural nouns except in few specific cases. The Genitive Particle "***no***" is the only particle that is used to indicate the possession irrespective of the gender differences or possession type. Like the Chinese morpheme de, the morpheme **no** is not only used in possessive structures but it occurs in relative clauses as well. Simpson (2001) compared the Chinese **de** and japans morpheme **no** and supported the view that they were originally determiners. Apart from the nature morpheme no, the important point to note here is that unlike the English, German and Greek, there are no articles in Japanese language. While in German and Greek both PM and PR are obligatorily marked with determiners and agree with them, Japanese has no definiteness agreement due to absence of articles. Almost all types of possessives are constructed by using only one way, same order. There is no distinction in Japanese internal possessives for animate and inanimate, prototypical and non

prototypical, alienable and inalienable etc. all types of possessive constructions are constructed in the same way without any kind of differentiation e.g.

1. a.    Kare   **no**     gita
        PR     GE    PM
        His guitar

1. b.    Kanojo **no**    gita
        PR     GEN  PM
        Her          guitar
        Her guitar

The Genitive case particle "no" is similar to English possessive's and can be used in similar manner to the apostrophe in English e.g.

2. c.    Tashiro  -**no**    shatsu
        PR-GEN  PM
        Tashiro        shirt
        Tashiro's shirt

But PM>PR order is not possible e.g.

2. b. *  shatsu  **no**    Tashiro
        PM     GEN   PR
        shirt    of      Tashiro

There is no distinction whether these are body part relations, part whole relations. Whether the PM or PR is abstract or concrete, they are   expressed in the say way using the same GEN Particle "no" mentioned earlier e.g.

3. a.    shonen- **no**   kao
        PR-GEN      PM
        Boy's        face
        Boy's face

3. b.    Jaketto **no**   eri
        PR     GEN  PM
        Jacket's      collar
        Jacket's collar

3. c.    Kyoshi -**no**      kyuryo
         PR      GEN    PM
         Teacher's        salary
         Teacher's salary

3. d.    Musen **no**      shingo
         PR      GEN    PM
         Radio's          signal
         Radio's signal

Examples 3.a. is an animate, prototypical, inalienable possessive relation.  3. b. is an inanimate, prototypical, alienable possessive relationship.  3. c. is animate, prototypical abstract possessive relationship while 3.c. is an inanimate non prototypical abstract possessive relation.  Note that in all of these examples there is no article, all of them are similar syntactically irrespective of the type they are. Table.1 summarizes the main typological differences between languages under investigation.

| | English | Japanese |
|---|---|---|
| **Order** | PR>PM PM>PR | PR>PM |
| **Articles** | DEF/INDEF No Agreement with the PR Or PM | N/A No Agreement with the PR Or PM |
| **Gender** | N/A | N/A |
| **Animacy** | Animate Inanimate distinction | N/A |
| **Prototype** | Prototype , Non-prototype distinction | N/A |
| **Possessive markers** | S / of | no |

**Table.1: shows the characteristics of possessive constructions and the difference between English and Japanese constructions**

## Experimental material[1]

The materials for the rating task: short genitive phrases consisted of a PR 1-2 syllables in length and a PM not more than three syllables. All

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[1] For detail on Animacy, Topicality and Prototypicality see. Ghilzai, S. A. (2017). The Influence of Cognitive and Psychological Factors on the Syntactic variation of Genitive Constructions: A comparison of English & Greek. PLLM, 111-148.

the PR and PM were singular count nouns. The experimental material was constructed by using 40 animate and 40 inanimate PR phrases. Both animate and inanimate PR phrases were further followed by 20 prototypical and 20 non-prototypical PM phrases. That resulted in four types of phrases i.e. animate prototypical, animate non prototypical, inanimate prototypical, and inanimate non prototypical. These four types of phrases were incorporated with definite and indefinite articles that produced eight conditions i.e. animate definite prototypical(+a+t+p), animate indefinite prototypical(+a-t+p), animate definite non-prototypical(+a+t-p), animate indefinite non-prototypical(+a-t-p), inanimate definite prototypical(-a+t+p), inanimate indefinite prototypical(-a-t+p), inanimate definite non prototypical(-a+t-p), inanimate indefinite non- prototypical(-a-t-p) . All of the eight conditions were once merged with s-genitive and once with of-genitive. The 8 conditions resulted in 10 items per condition that means 80 experimental items that constituted 10 items for each 8 condition. 30 filler items were used to distract the participants. Word order, mass count, and prepositional phrases were used as fillers.

The material was then equally distributed into two lists using the Latin square design. The two lists were randomized, so that one condition mix together properly and may not occur simultaneously. The lists were checked for semantic priming effects as well.  The lists were presented to the participants using the DMDX (reaction time experiment software) for rating task.

## Participants

A group of 20 L1 Japanese speakers learning English as L2 performed in the experiment. The experiment was conducted in a quiet room. A group of 20 monolingual native English speakers served as a control group. All participants had a corrected or corrected to normal vision. The participants‟ proficiency level was assessed by using the grammatical portion of a short placement test (oxford placement test by Allen, 1992). Majority of the participants got 6.5 OPT band. In order to check whether the participants were familiar with the vocabulary used in constructing the experimental material, the participants had taken a short vocabulary test to indicate the unfamiliar words on the vocabulary list. Almost all of the participants were familiar with the vocabulary used in the experiment.

## Method

The experiment was carried out in a psycholinguistics lab. All participants were tested individually in a quiet atmosphere. An experiment information sheet was given to the participants. Experiment method was explained to the participants both in written form and orally. DMDX was used to present the material and for recording the participants choice and reaction times. The experimental phrases were presented in black letters on a white back ground. Phrases appear in a pair wise fashion (containing one s-genitive and one of-genitive) in the middle of the screen for 2500 ms followed by hash marks in the middle of the screen and a 3500 time out. The experiment started with a practice trail to familiarize the participants with the experimental procedure. The participants have to indicate their preference by rating the phrases as quickly as possible by pressing the buttons for the first or second phrase on a dual Analoge pad. The experiment was carried out in a Lab at the University of Essex, UK.

## Results

### *Comparison of L2 Japanese with Native English control Group*

| Descriptive Statistics | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | English | | | | Japanese | | | |
| | s-genitive | | of-genitive | | s-genitive | | of-genitive | |
| Conditions | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| animate definite prototypical +a/+t/+p | 89 | 0.58 | 11 | 0.31 | 65 | 6.21 | 35 | 7.53 |
| animate definite non-prototypical +a/+t/-p | 84 | 0.72 | 16 | 0.22 | 55 | 5.41 | 45 | 9.58 |
| animate indefinite prototypical +a/-t/+p | 72 | 1.53 | 28 | 1.31 | 66 | 8.47 | 33 | 10.72 |
| animate indefinite non-prototypical +a/-t/-p | 64 | 2.04 | 36 | 2.15 | 56 | 10.32 | 43 | 14.27 |
| inanimate definite prototypical -a/+t/+p | 47 | 1.89 | 53 | 1.24 | 40 | 13.81 | 60 | 11.04 |
| inanimate definite non prototypical -a/+t/-p | 26 | 1.63 | 74 | 1.54 | 40 | 11.61 | 60 | 12.23 |
| inanimate indefinite prototypical -a/-t/+p | 15 | 0.45 | 85 | 0.56 | 31 | 15.78 | 68 | 13.75 |
| inanimate indefinite non-prototypical -a/-t/-p | 12 | 0.21 | 88 | 0.34 | 35 | 10.91 | 65 | 11.24 |

**Table 2. Shows the mean ratings and standard deviations of Native group and L2 Japanese speakers.**

The descriptive statistics show that the control group rated high number of s-genitives in the first four experimental conditions (M = 89, 84, 72) that shows their preference of s-genitive for the animate

conditions. It dropped down dramatically in the fifth condition and the rating gradually decreases in the last four inanimate conditions (M = 47, 26, 15, 12) which shows their less preference of s-genitive for the inanimate conditions. On the other hand, the Japanese L2 speakers rated less number of s-genitives in the first three conditions (M= 65, 55, 66 ), this can be ascribed to the under generalization effect. While, they rated high number of s-genitives in the last five conditions than the control group which can be attributed to overgeneralization effect.

The rating of of-genitive construction shows that the native English control group rated less number of of-genitives for the first four experimental conditions (M = 11, 16, 28, 36  respectively) than the last four experimental conditions (M = 53, 74, 85, 88 respectively). This shows their preference of of-genitive for inanimate and non prototypical condition. The L2 Japanese group performed inversely than the control group. They rated high number of of-genitives in the first three conditions (M = 35, 45, 33 respectively) than the control group, which is again a sign of overgeneralization. Surprisingly, they rated less number of of-genitives in the last five conditions (M = 43, 60, 60, 68, 65 respectively) as compared to the control group. This effect can again be interpreted as under generalization effect.
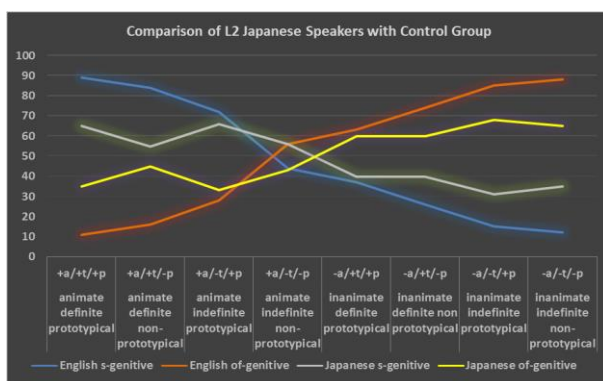


**Graph1. Shows the mean rating of s-genitive and of- genitive by control group and L2 Japanese speakers.**

The blue line shows rating of s-genitive by control group and grey line shows rating of s-genitive by Japanese speakers. The Japanese L2 speakers rated less number of s-genitive in the first four experimental conditions as compared to the native control group. This can be

attributed to under generalization effect. While, it shows clearly that in the last five conditions they rated high number of s-genitives than the control group. This can be ascribed to overgeneralization effect. The rust line shows rating of of-genitive by control group and yellow line shows rating of of-genitive by Japanese speakers. In the first three conditions Japanese L2 speakers rated high number of of-genitives than the control group. It indicates overgeneralization effect. While in the last five conditions the Japanese L2 speakers rated less number of of-genitive as compared to the control group which is again a sign of under generalization effect.

The control group preferences and ratings are based on animacy and prototypicality. Definiteness seems to play no role and the possible reason is that it is discourse related feature. In the rating task the phrases were presented separately and were not embedded into discourse. The ratings of L2 Japanese speakers are not based on animacy, definiteness and prototypicality. This is in line with the predictions based on typological differences because Japanese possessive constructions Lack the characteristics of animacy, definiteness and prototypicality. Since, Japanese possessive constructions follow only one order PR> PM which is more closely related to English possessive s order (PR>PM), prototypicality, it is predictable that they will prefer more s-genitive constructions in case of L1 transfer. On the contrary, results indicated no L1 transfer based on Possessor possessum order. Overall, the results indicate the overgeneralization and under generalization effects.

## CONCLUSION

According to Full transfer full access hypothesis (Schwartz and Sprouse, 1994, 1996, see Lydia white 2003: 67) the initial state in L2 acquisition is the L1 grammar, learners adopt the entire L1 grammar (excluding specific lexical items and phonetic exponents) at the initial state. Changes in the initial grammar can take place because when the Learners fail to accommodate the properties of the L2 input they resort to UG[2] resource. In order to make a more appropriate analysis of L2 input, they use the new UG options (that includes new

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[2] UG stands for Universal grammar postulated by Chomsky (1960). It means that all languages that human speak have rules of grammar and speakers of all languages learn the grammar of their language. Human beings are "pre-wired to learn languages.

parameter setting, functional categories and feature values) that are not yet initiated in the L1. This analysis may not necessarily be the same as that of a native speaker. The resulting inter-language grammars are UG contained. Note that this full transfer claim is about the initial sate, which follows a gradual grammar restructuring during the development.

Schwartz and Sprouse (1994) observed the developmental stages of a native Turkish speaker learning German as L2. They found the full transfer of L1 in the initial stage of L2 Learner's grammar. In the second stage when the learners is feel difficulty in accommodating the properties of the L2 input he resorts to the UG and restructures the transferred grammar. The restructuring results in non-target like structures that are neither like L1 nor L2. But the resulting inter-language grammar is UG constrained (means full transfer and learner have full access to the UG). The present study supports the full transfer full access hypothesis, since the over and under-generalization by Japanese L2 learners can be explained the full transfer full access hypothesis.

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