The Effect of Animacy Status on the Acquisition of English Relative Constructions by Japanese Learners: A Comparison of Spoken and Written Language

OKUGIRI, Megumi (Tokyo Healthcare University)

Abstract

This paper examines the frequency of animacy status of the head noun phrases modified by relative clauses in spoken and written English among Japanese learners and English native speakers. It analyses their production in terms of the usage-based approach to determine when and how the learners produce relative constructions. Regarding the effect of animacy status, Ozeki and Shirai (2007) suggest that the animacy status of the heads is a crucial factor in the second language acquisition of Japanese attributive clauses. This current study will investigate whether animacy status plays an important role in the L2 acquisition of English relative constructions as well. The results indicated differences in the animacy status of the head NPs between Japanese learners and native English speakers as well as between the spoken and written modes, but no difference in the relative clause type. Learners seemed to over-depend on a strategy to express or identify human referents with RCs whereas native speakers could accomplish this in various ways. The overall results revealed that animacy status affects the acquisition of English relative constructions among both Japanese learners and native English speakers, suggesting that semantic properties might play a crucial role in the acquisition of relative constructions.

Keywords: the acquisition of relative constructions, corpus, animacy, strategy, frequency

This paper investigates the frequency of animacy status of the head noun phrases (NPs) modified by relative clauses (RCs) in spoken and written English produced by Japanese learners and native

English speakers. Relative constructions—complex sentences including RCs—are difficult syntactic items for second language (L2) learners to acquire. In their study of first language (L1) English and German, Kidd, Brandt, Lieven, and Tomasello (2007) focused on the acquisition of the semantic properties of RCs and found that animacy is a key factor affecting RC use. Among L2 studies, Ozeki and Shirai (2007) also demonstrated that the animacy status of the heads is a crucial factor for determining the L2 acquisition of Japanese attributive clauses, which are RC-like constructions in Asian languages (Comrie, 2002, 2007); however, the acquisition differed depending on learners' L1s.

The current study investigates the animacy status of the head NPs of RCs in spoken and written English in order to examine the motivation of L2 learners' and native speakers' RC production as well as to determine when and how the learners produce relative constructions. This study focuses on learners' production data from the perspective of the usage-based approach as frequency is a key determinant for discovering learners' actual use of language and predicts acquisition order of RCs (Diessel, 2004; Tomasello, 2003). Learners' production is examined according to their proficiency—namely, low-intermediate, high-intermediate, and advanced. The results highlight differences in the animacy status of the head NPs between Japanese learners and native English speakers as well as between the spoken and written modes; differences also emerged depending on the learners' proficiency. The overall results reveal that animacy status affects the acquisition of English relative constructions of Japanese learners as well as native English speakers, suggesting that semantic properties play a crucial role in the acquisition of relative constructions.

Previous Studies

Although many studies in the past decades have investigated L2 acquisition of RCs, few conclusions have been reached on this topic. In these studies, much of the interest has been on the accordance of the acquisition order using the NPAH, a typological hypothesis proposed by Comrie and Keenan (1979) to predict the presence of RCs in natural languages. Their hypothesis predicts the

presence of each RC in the order of subject RC > direct object RC > indirect object RC > oblique RC > genitive RC > object of comparative particle RC (*A*>*B* indicates that the presence of *B* implies the presence of *A* in a language, but the presence of *A* does not imply the presence of *B*). Although the NPAH is a typological hypothesis and does not focus on language acquisition, a large number of L2 studies in European postnominal RCs (e.g., Eckman, Bell & Nelson, 1988; Gass, 1982; Hyltenstam, 1984) have examined whether or not the hierarchy is adoptable to predict acquisition order in L2. And their results have been supportive of the NPAH as a predictor of acquisition difficulty.

The NPAH, however, predicts only the syntactic properties of RCs. It does not predict either the acquisition of the heads modified by RCs or the semantic and discoursal properties of relative constructions. Thus, the current study does not put its primary focus on the NPAH. Instead, it examines the animacy status of the heads in order to reveal the semantic properties in the L2 acquisition. One of the L1 studies focusing on the semantic properties of RCs was Kidd et al. (2007), who exhibited the importance of semantic properties. They conducted an error analysis of English and German RCs among L1 children who completed a sentence repetition task. Their analysis revealed that both English and German children converted more object relatives to subject relatives than they did subject relatives to object relatives. For example:

(1) This is the girl that you pushed on the bus this morning.

(2) This is the girl who pushed on the bus this morning. (Kidd et al., 2007, p. 873)

The children tended to convert object RCs, as in (1), to subject RCs, as in (2). In addition, the object relative to subject relative conversions occurred when the head NP was animate (human beings and animals), as in the quoted examples, because an animate head is highly topicworthy and makes a good candidate as an agent, thereby resulting in subject relatives.

Traxler, Morris, and Seely (2002), Mak, Vonk, and Schriefers (2006), and Diessel (2009) found similar results as Kidd et al. (2007) on the strong association between the agentivity and RC types. Ming and Chen (2010) also demonstrated that animacy plays an important role in the production of relative clauses specific to the Chinese language. Mak et al. (2006) propose that the processing difficulty of

Dutch RCs in a reading task is explainable by the interaction of the animacy of the subject as a topic and the RC type: The head of an RC tends to be the topic of the RC as the RC is a statement about the head. Consequently, the readers preferred animate entities to be the subject of the RC. In other words, animate heads are highly plausible candidates for agents; thus, they result in a subject RC. Diessel (2009) and Fox and Thompson (1990) found the supportive results in children's L1 and in adults' L1 English respectively. From the discoursal point of view, as Du Bois (1980) and Fox and Thompson (1990) maintained, inanimate referents, which are less agentive referents, tend to be non-subject. In addition, these inanimate referents are often made relevant in the discourse by relating them to the humans (animate referents) who own and use them, which are highly agentive in L1 English general discourse.

With regard to L2 acquisition, Ozeki and Shirai (2007) examined animacy status of the head in Japanese attributive clauses. Japanese attributive clauses are more closely associated with semantic interpretation than grammatical (or formal) aspects, unlike European languages such as English (Matsumoto, 2007; Teramura, 1984, 1991,1993). Ozeki and Shirai (2007) examined the L2 acquisition of Japanese attributive clauses in an oral interview corpus of 90 learners of Japanese—30 English, 30 Korean, and 30 Chinese speakers—as well as 15 native Japanese speakers. The results revealed that subject relatives were not easier for the learners to produce than direct object and oblique RCs. Moreover, the learners strongly associated subject RCs with animate heads and objects whereas they associated oblique RCs with inanimate heads. However, this was not the case for native Japanese speakers, who were not biased to use subject RCs to modify animate head nouns. The following Japanese examples were created by the author based on examples in Ozeki and Shirai (2007):

(3) kompyūtā o   katta   gakusei

computer ACC[1] bought   student

"the student who bought a computer"

(4) josei o   hiita   basu

woman ACC   ran over   bus

"the bus that ran over a woman"

The learners tended to use subject RCs when the head was animate, as in Example (3), but less frequently produced subject RCs when the head was inanimate, as in Example (4). The same cannot be said of native speakers, who produced subject RCs with both animate and inanimate heads. Ozeki and Shirai (2007) concluded that the animacy status of the heads is a crucial factor for determining the L2 acquisition of Japanese attributive clauses. The present study will show whether or not the animacy plays an important role in the acquisition of English relative clauses by Japanese speakers as well as in the acquisition of Japanese attributive clauses.

In the acquisition of L2 English RCs, in an exploratory study of the written language by Japanese learners, Okugiri (2012) found that both native speakers (n = 28) and Japanese learners of English (n = 94) produced subject RCs the most frequently regardless of the animacy status of the heads. On the other hand, the native speakers produced object and oblique RCs more frequently in the case of inanimate heads than they did in the case of animate heads. The current study will include the spoken language in order to obtain a more conclusive result.

This study focuses on the production data as frequency is a key determinant in discovering actual use of language by the learners and predicts the acquisition order of RCs. Frequency reveals the nature of the learners' language in the perspective of the usage-based approach (Diessel, 2004; Tomasello, 2003), in which utterances are defined as strings of speech used for getting things understood, and the strings constitute a construction that has a meaning (Lieven & Tomasello, 2008; Tomasello, 2003). Furthermore, Bybee (2008) suggested that the most frequent strings of speech have the strongest representations in memory and serve as analogical bases for forming novel instances of the construction; namely, the most frequent pattern is the central pattern. The present study will exhibit a learners' frequent pattern of RCs to reveal the crucial representation in their L2 acquisition.

Current Study

Research Questions

Based on the previously discussed literature, this paper aims to address three research questions:

1. Does a difference exist in the animacy status of the head NPs between Japanese learners and native English speakers?

2. Does a difference exist in the animacy status between the spoken mode and the written mode?

3. Do semantic properties such as animacy status affect the acquisition of English relative constructions among Japanese learners and native English speakers?

Method

The relative constructions of Japanese learners and native English speakers at different levels of competence were extracted from the National Institute of Information and Communications Technology Japanese Learner English Corpus (Izumi, Uchimoto & Isahara, 2005) and the Nagoya Interlanguage Corpus of English (Sugiura, 2008); the former is a spoken corpus and the latter is a written corpus. Both corpora include data from Japanese learners and native speakers of English. The Japanese learners' data for this study were extracted depending on the levels of English proficiency. The learners were grouped into three levels according to their scores on the Test of English for International Communication (TOEIC): a lower-intermediate group (scores of 405–600), a high-intermediate group (scores of 605–780), and an advanced group (scores of 785–990).[2] The number of files tagged with the TOEIC score in the spoken corpus was 123 for the lower-intermediate group, 241 for the high-intermediate group, and 194 for the advanced group. For the native group, 20 files were available. Since the author wanted to have more files in order to be able to gain more conclusive results, the correlation between the TOEIC level and the speaking test level in the spoken corpus was subsequently analysed. Kendall's rank correlation and the Spearman's rank correlation coefficient were performed. A direct correlation was found between the levels of the TOEIC and the speaking test: ($W = 0.615, p = 0.01$) ($r_s = 0.677, p =$

0.01). Thus, the results show that, the higher the TOEIC scores, the higher the speaking test levels. Accordingly, 25 files among the highest level (Level 9) were added to the advanced group. The final numbers of files in the spoken corpus were 123 lower-intermediate, 241 high-intermediate, 219 advanced learners, and 20 native speakers of English. The number of files in the written corpus were 37 lower-intermediate, 32 high-intermediate, 25 advanced learners, and 28 native speakers of English.

The RC data were gathered by extracting relative pronouns (i.e., *that, which, who, whom,* and *whose*) and by hand.[3] After the extraction, the heads were categorised as animate, concrete inanimate, or abstract inanimate, based on Ming and Chen (2010) as follows:

Animate: human beings and animals (e.g., *a man, a bird, a dog*)

Concrete Inanimate: concrete objects (e.g., *a box, a room, a store, a restaurant*)

Abstract Inanimate: abstract concept and anything else that is not concrete

(e.g., *kindness, information, feeling*)

Also the RCs were categorised as subject (e.g., the man who saw the woman), object (e.g., the car that I saw), and oblique (e.g., the boy who your were talking with).

Results and Discussion

For the RC types, the frequency of subject RCs was the highest in both modes of all groups (in the spoken mode, 77.09% for Low-Intermediate, 69.89% for High-Intermediate, 69.90% for Advanced, and 59.77% for Native; in the written mode, 82.82% for Low-Intermediate, 79.05% for High-Intermediate, 63.90% for Advanced, and 75.96% for Native). The percentages of object and oblique RCs were much smaller than that of subject RC in both modes of all groups (for the object RC, in the spoken mode, 16.67% for Low-Intermediate, 22.58% for High-Intermediate, 26.06% for Advanced, and 29.03% for Native: in the written mode, 7.81% for Low-Intermediate, 13.33% for High-Intermediate, 9.23% for Advanced, and 12.50% for Native; for oblique RC, in the spoken mode, 6.25% for Low-Intermediate, 7.53% for High-Intermediate, 10.05% for Advanced, and 11.20% for

Native; in the written mode, 9.38% for Low-Intermediate, 7.62% for High-Intermediate, 2.31% for Advanced, and 11.54% for Native). The results in all groups support the NPAH, i.e., subject RC was the most frequent, and exhibited no difference between the groups and modes.

Table 1 shows the detailed results of the frequency of animacy of the head in each group and mode. The most frequent type of animacy in each mode and group is highlighted in grey. The low-intermediate group had a strong tendency to use concrete inanimate heads in the spoken mode (66.67% in spoken and 9.38% in written) and animate heads in the written mode (22.92% in spoken and 65.63% in written). The high-intermediate group had a similar tendency to the low-intermediate group (49.10% in spoken and 9.52% in written for concrete inanimate and 37.63% in spoken and 61.90% in written for animate). The advanced group used animate heads more than concrete or abstract inanimate heads in both modes (40.50% in spoken and 45.38% in written for animate, 36.26% in spoken and 23.85% in written for concrete inanimate, and 23.23% in spoken and 30.77% in written for abstract inanimate). The native group used more concrete inanimate heads (50.28%) than the others in the spoken mode and more abstract inanimate heads (47.12%) in the written mode. The chi-square analysis yielded a significant difference between the spoken and written data in all groups: χ^2 (2, N = 112) = 40.219, $p<.0001$* for low-intermediate, χ^2 (2, N = 384) = 51.619, $p<.0001$* for high-intermediate, χ^2 (2, N = 767) = 7.997, $p = .0183$* for advanced, and χ^2 (2, N = 735) = 69.125, $p<.0001$* for native speakers.

Table 1

Frequency of Animacy of the Heads in Each Group and Mode

level	Mode	Animate	Concrete Inanimate	Abstract Inanimate	Total
Low-Intermediate	spoken	11 (22.92%)	32 (66.67%)	5 (10.42%)	48 (100%)
	written	42 (65.63%)	6 (9.38%)	16 (25.00%)	64 (100%)
High-Intermediate	spoken	105 (37.63%)	137 (49.10%)	37 (13.26%)	279 (100%)
	written	65 (61.90%)	10 (9.52%)	30 (28.57%)	105 (100%)
Advanced	spoken	258 (40.50%)	231 (36.26%)	148 (23.23%)	637 (100%)
	written	59 (45.38%)	31 (23.85%)	40 (30.77%)	130 (100%)
Native	spoken	115 (21.82%)	265 (50.28%)	147 (27.89%)	527 (100%)
	written	75 (36.06%)	35 (16.83%)	98 (47.12%)	208 (100%)
Total		730	747	521	1998

Therefore, the statistical results showed that all groups used different head types depending on the modes.

In the spoken mode, concrete inanimate heads were used the most frequently among the two intermediate groups and the native group. As for the concreteness of the heads, inanimate referents are often made relevant in spoken discourse by relating them to the humans who own and use them (Du Bois, 1980; Fox & Thompson, 1990). In order for humans to control the referents, they are more likely to be concrete inanimate rather than abstract inanimate. Another reason for the frequent occurrence of concrete inanimate heads can be ascribed to the reduced need to identify human referents in the spoken mode. In spoken discourse, more deictic and human referents are available, such as *I, you, he, she, it, this* and *that* (Chafe, 1984a), and more shared knowledge might be already present between the interlocutors, especially when they are acquaintances. Thus, a speaker has less need to identify human referents in order to maintain coherence as many human referents are already presupposed or visible. Therefore, identifying referents—mostly human referents in the spoken mode—is required much less than in the written mode. As a result, referents that need to be explained in spoken language are more restricted to concrete inanimate referents.

For the advanced learners, the most frequent heads in the spoken mode were animate. The proportions of animate, concrete inanimate, and abstract inanimate in the spoken mode of each group are shown in Figure 1.
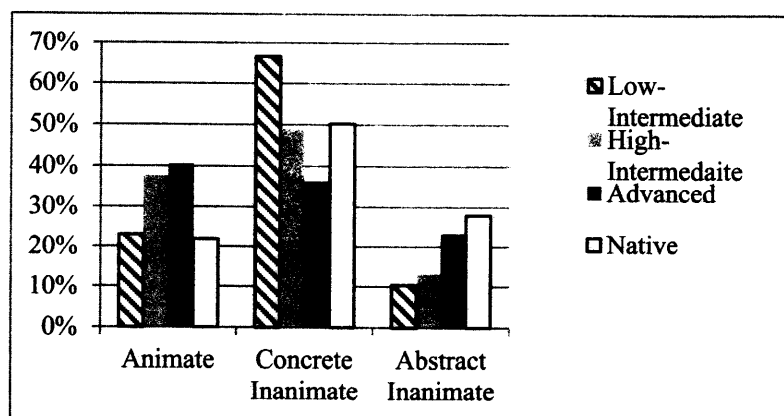

Figure 1. Percentages of animacy in the spoken mode of each group

Figure 1 demonstrates that the percentage for animate heads increases as the learners become more proficient in English. In other words, the more advanced learners used more animate heads instead of concrete inanimate heads in the spoken mode, although that is not the case for the native group. One possible reason for these results is that advanced learners' strategy for identifying human referents by means of RCs is more firmly established in their interlanguage as a result of achieving communicative success by using RCs to identify human referents. As a result, the learners might over-depend on a strategy to express or identify human referents with RCs (e.g., the person who got the death penalty)[4]. Meanwhile, native speakers can accomplish this in various ways, i.e., not only by relative clauses but also by variety of noun phrases (e.g., the murderer, murdering monsters, they)[5]. The dependency on this strategy seems to lead learners to diverge from the RCs of the native speakers. The results suggest that, although advanced learners are grammatically more advanced, their discoursal competence might not be as advanced due to their use of a different communicative strategy than native speakers, which the learners acquired by achieving communicative success regardless of its degree of appropriateness in terms of native speakers' norms of use.

For the low-intermediate group, while the percentage for animate heads is as low as the native group, the percentage for concrete inanimate heads is the highest among all groups. The learners might put more of their focus on concrete inanimate referents than they do on animate referents in the discourse. Although it requires further analysis to draw a conclusion, it cannot be discussed here due to the lack of space.

The percentage of animate heads in the written mode, however, decreases as the learners become more proficient (65.63% for low-intermediate, 61.90% for high-intermediate, 45.38% for advanced, and 36.06% for native). These results are illustrated in Figure 2. The learners' frequent use of animate heads in the written mode can be explained quite easily. In general written discourse, the writer might not know the reader; in addition, the deictic referents (i.e., contextually presupposed NPs such as *I* or *you*) and any other referents visible to the writer and the reader are very few. Thus, the writer has an increased need to identify human referents in written language. Hence, the frequent occurrence of

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animate heads in the learner groups might stem from the need to identify human referents in the written

mode. Again, the results imply learners' over-dependency upon the strategy of expressing human

referents using RCs. As the learners had enough time to plan and edit their language production in the

written mode, even the less advanced learners were able to use relative constructions, which are a

complex form of NPs. Meanwhile, the more advanced learners were able to come up with other forms

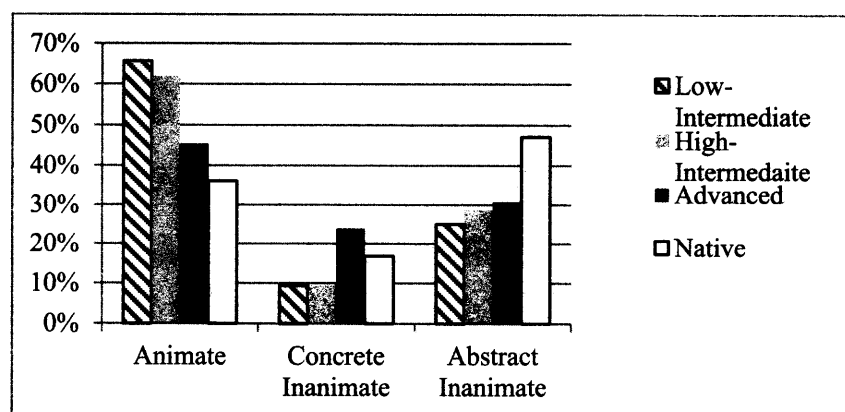of NPs to denote human referents, much like the native speakers did.

Figure 2. Percentages of animacy in the written mode of each group

On the other hand, the native group showed a strong tendency to use abstract inanimate heads

in the written mode. In terms of abstractness, the native speakers' production of abstract inanimate heads

might be due to the nature of psychological detachment in written English (Chafe, 1984a, 1984b). Chafe

(1984b) argues that psychological detachment is exhibited in more abstract language. Thus, the native

speakers in this study probably included more abstract inanimate referents in their writing as a result of

psychological detachment and due to the nature of the topics. On the other hand, the learners did not

show such detachment in the written mode, which might stem from two possible explanations: They

were not able to manage or did not know the linguistic forms associated with the written mode, or they

had not been taught the formal written style of English. This outcome is left for discussion by future

researchers as it requires more detailed and further investigation to draw a certain conclusion.

Conclusion and Implications

This study examined the animacy status of the head NPs of Japanese learners and native speakers. It found no difference in the RC types, but there were differences between the groups and modes. The learners of all groups tended to use animate heads while the native group tended to use abstract inanimate heads in the written mode; meanwhile, the two intermediate learners and the native group tended to use concrete inanimate heads while the advanced group tended to use animate heads in the spoken mode. Thus, the answers for the first two research questions ((1) Does a difference exist in the animacy status of the head NPs between Japanese learners and native English speakers? and (2) Does a difference exist in the animacy status between the spoken mode and the written mode?) were both positive. Differences emerged in the animacy status of the head NPs between Japanese learners and native English speakers as well as between the spoken and written modes.

The results of the written mode suggest that the learners frequently used animate heads due to their need to identify human referents in the written language whereas the native speakers frequently used abstract inanimate heads due to the nature of detachment in normal English written discourse. The results of the spoken mode suggest that the intermediate learners and native speakers frequently used concrete inanimate heads due to the increased need to relate concrete inanimate referents with humans who own and use them, which are commonly available in the spoken language. The results also imply that the advanced learners frequently used animate heads due to their higher grammatical proficiency in producing complex sentences (e.g., relative constructions) than the less advanced learners. In addition to the proficiency, their over-dependency upon the strategy of expressing human referents using RCs might accelerate the production in the spontaneous spoken mode.

The overall results demonstrate that animacy status affects Japanese learners' and native English speakers' acquisition of English relative constructions. Thus, the answer for the last research question ((3) Do semantic properties such as animacy status affect the acquisition of English relative constructions among Japanese learners and native English speakers?) is positive as well. The results

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imply that semantic properties play a crucial role in the acquisition of relative constructions. It will be fruitful to further investigate the effect of other types of discoursal properties in addition to semantic properties on the acquisition of relative constructions as a future study for understanding learners' tendencies and strategic uses of complex grammatical structures.

Acknowledgments

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Footnotes

[1] ACC denotes accusative case marker.

[2] These levels are based on Can-Do Levels Table provided by Educational Testing Service (http://www.uk.etseurope.org/ home-corpo-uk/toeic-can-do-table/).

[3] Relative sentences with the relative pronouns *where* or *what* are not included in the data because this study focuses on RCs requiring a head noun phrase. *Where*, which is an adverbial relative pronoun, frequently does not require an overt head noun phrase, and *what*, which is a nominal relative pronoun, never allows an overt head noun phrase.

[4] The expected clause is "the person who is sentenced to death."

[5] Longman Grammar of Spoken and Written English (1999, p. 606) exhibits that other types of post-modifiers such as appositives, infinitive clauses and participles (*ed-* and *ing*-clauses) are used as well as RCs to modify NPs by native English speakers.