

Alienable/Inalienable Possessions and Animacy in the Multiple Case Constructions: An Experimental Approach

Yong-hun Lee*†

Chungnam National University &
Hannam University

Yong-hun Lee. 2014. Alienable/Inalienable Possessions and Animacy in the Multiple Case Constructions: An Experimental Approach. *Language and Information* 18.2, 31–58. The distinction of alienable/inalienable possessions plays a crucial role in determining the acceptability of Multiple Case Constructions (MCCs) in Korean. Recently, Yeon (2003, 2010) introduced so-called contiguous alienable possessions and mentioned that these types of possessions also affect the acceptability of MCCs. This paper experimentally examines how these three kinds of possessions influence the acceptability of MCCs. Since animacy also plays a role in the MCCs, this paper also examines how animacy affects the acceptability of MCCs. The experiments were designed following Johnson (2008), and the native speakers' intuition was measured and statistically analyzed. Through the experiment, the following facts were observed: (i) Both three types of possessions and animacy play a role in determining the acceptability of MCCs, (ii) The contiguous possessions behave close to inalienable possessions, rather than alienable possessions, and (iii) There was an interaction between three types of possessions and animacy. (Chungnam National University · Hannam University)

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1. Introduction

The distinction of alienable/inalienable possessions plays a crucial role in the acceptability of MCCs in Korean. The following sentences demonstrates how the dis-

* Department of Linguistics, Chungnam National University, 99 Daehak-ro, Yuseong-gu, Daejeon, 305-764, South Korea, E-mail: ylee@gnu.ac.kr

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inction affect the acceptability of sentences (Cho and Lee, 2003:163-4).^{1,2}

- (1) a. Mary-ka John-ul tali-lul cha-ss-ta.
 Mary.NOM John.ACC leg.ACC kick.PAST.DECL
 ‘Mary kicked John’s leg.’
 b. *Mary-ka John-ul cha-lul cha-ss-ta.
 Mary.NOM John.ACC car.ACC kick.PAST.DECL
 ‘Mary kicked John’s car.’

(1a) contains an inalienable possession, since *John* is an inalienable possessor of *tali* (the leg). (2b), on the other hand, contains an alienable possession, since *John* is an alienable possessor of *cha* (the car). As you can see, (1a) is acceptable whereas (1b) is not. This contrast supports the claim that inalienable possession makes the sentences acceptable.

However, let’s see the following sentences (Yeon, 2010:194).

- (2) a. Kyengchal-i Mary-lul kapang-ul cap-ass-ta.
 Police.NOM Mary.ACC bag.ACC catch.PAST.DECL
 ‘The police caught Mary in her bag.’
 b. John-i Mary-lul os-ul ccic-ess-ta.
 John.NOM Mary.ACC clothes.ACC tear.PAST.DECL
 ‘John tore Mary’s clothes to the effect of affecting Mary.’
 c. John-i Mary-lul sinpal-ul palp-ass-ta.
 John.NOM Mary.ACC shoes.ACC step-on.PAST.DECL
 ‘John stepped on Mary on the shoe.’

Note that all of these examples have alienable possessions: *kapang* (the bag), *os* (the clothes), and *shinpal* (the shoes) respectively. However, unlike (1b), all of these sentences are acceptable to the native speakers. Yeon (2003, 2010) called this kind of possession contiguous possessions.

There is one more factor that we have to think about when we examine how the above three types of possessions affect the acceptability of MCCs. Let’s see the following sentences.

- (3) a. Chelsoo-ka ku sonye-lul tali-lul cap-ass-ta.
 Chelsoo.NOM the girl.ACC leg.ACC grab.PAST.DECL
 ‘Chelsoo grabbed the leg of the girl.’

¹ The nominative case markers *-ka* and *-i* and the accusative case markers *-lul* and *-ul* are allomorphs, respectively. The former is post-vowel and the latter post-consonantal. The Yale Romanization System is used for the romanization of the Korean words. The abbreviations for the glosses used in this paper are as follows: NOM (nominative), ACC (accusative), DAT (dative), PRES (present tense), PAST (past tense), and DECL (declarative).

² There is a controversy between two similar terms: *acceptability* and *grammaticality*. However, Schütze and Sprouse (2013) pointed out that grammaticality judgment is a misleading term: “Since a grammar is a mental construct not accessible to conscious awareness, speakers cannot have any impressions about the status of a sentence with respect to that grammar.” Recently, Song *et al.* (2014) also mentioned this problem. This paper follows these previous studies and uses the term *acceptability*, rather than *grammaticality*.

- b. Chelsoo-ka ku kirin-ul tali-lul cap-ass-ta.
 Chelsoo.NOM the giraffe.ACC leg.ACC grab.PAST.DECL
 ‘Chelsoo grabbed the leg of the giraffe.’
- c. Chelsoo-ka ku chayksang-ul tali-lul cap-ass-ta.
 Chelsoo.NOM the desk.ACC leg.ACC grab.PAST.DECL
 ‘Chelsoo grabbed the leg of the desk.’

All of these sentences contain inalienable possessions. The only difference is the animacy status of the possessor NPs. When native speakers were asked how acceptable these sentences are, however, they may provide different answers to the questions. That is, the acceptability of these sentences does not seem to be homogeneous, even though all of these sentences contain identical inalienable possessions. Accordingly, it is necessary to include this factor in the experiment.

The goal of this paper is to examine how these two kinds of factors (possessions and animacy) affect the acceptability of the MCCs. Accordingly, experiments were designed and performed based on these two factors. The experiments were designed following Johnson (2008); and the native speakers’ intuition was measured with two scales, numerical estimates and line drawing, though the latter was adopted in the actual analyses. After the experiments, all the data were statistically analyzed with R. Through the analysis, we can investigate how the two factors influence the acceptability of the MCCs.

This paper is organized as follows. Section 2 reviews previous studies on MCCs focused on alienable/inalienable possessions. Section 3 mentions the research method and procedure taken in this paper. Section 4 includes the analysis results of basic descriptive analysis, and Section 5 contains those of regression test. Section 5 contains discussions and implications based on the analysis results, and Section 6 summarizes and concludes this paper.

2. Previous Studies

2.1 Alienable vs. Inalienable Possessions

Because MCCs are some of the hottest topics in Korean, there have been lots of studies on these constructions. Among these previous studies, there were trials to capture the acceptability of the constructions with alienable/inalienable possessions. These sorts of claims start from the following sentences.³

- (4) a. Younghee-uy elkul-i yeppu-ta.
 Younghee.GEN face.NOM pretty.DECL
 ‘Younghee’s face is pretty.’

³ (4) came from Chun (1985:31), and (5) from Kang (1987:83).

- b. Younghee-ka elkul-i yeppu-ta.
 Younghe.NOM face.NOM pretty.DECL
 ‘Younghee’s face is pretty.’
- (5) a. Cheloo-uy yenphil-i pulk-ta.
 Chelsoo.GEN pencil.NOM red.DECL
 ‘Chelsoo’s pencil is red.’
- b. *Cheloo-ka yenphil-i pulk-ta.
 Chelsoo.NOM pencil.NOM red.DECL
 ‘Chelsoo’s pencil is red.’

According to Chun (1985:31), "the Possessor and Possessee in (4) have the relation of the inalienable possession, and in (5) they have the relation of the alienable possession. The examples of inalienable possession are the possessor’s body-part, part-whole relations, etc" As you can see, though two sentences started from the identical underlying structures, (4b) is acceptable but (5b) is not. This kind of difference in the acceptability made the later studies assume the inalienable possession as one of the basic semantic relations in MCCs. Since Chun (1985), there have been lots of studies which tried to explain the MCCs based on alienable/inalienable possessions, including Kang (1987), Choe (1987), Kim (1989, 1990), Yoon (1989), Maling and Kim (1992), Kitahara (1993), Yoon (1997), Moon (2000), Cho (2003), Cho and Lee (2003), and Tomioka and Sim (2007).

Though alienable/inalienable possessions affect the acceptability of both Multiple Nominative Constructions (MNCs) and Multiple Accusative Constructions (MACs), they are not perfectly identical.⁴ There are also some discrepancies with related to alienable/inalienable possessions. Several studies including Kim (1989, 1990) and Cho (2003) mentioned that the only possible relation in MACs is inalienable possession, not alienable possession.

Kim (1989:449-451) assumed that inalienable possessed NP became a minor/secondary predication with the predicate. Let’s see the following sentence.

- (6) a. Mary-ka John-ul tali-lul cha-ss-ta.
 Mary.NOM John.ACC leg.ACC kick.PAST.DECL
 ‘Mary kicked John’s leg.’
- b. *Mary-ka John-ul cha-lul cha-ss-ta.
 Mary.NOM John.ACC leg.ACC kick.PAST.DECL
 ‘Mary kicked John’s car.’

According to her claim, inalienable possessed NP became a minor/secondary predication. To support her claim, Kim (1989:456) suggested (lexical) passive and topicalization as diagnostics. Let’s see the following sentences, which were made from (6a).

⁴ In this paper, three terms are used whenever necessary: MCCs, MNCs, and MACs. If it is necessary to distinguish the MNCs from the MACs, the terms MNCs and MACs were used separately. When it is necessary to refer to both constructions, the term MCCs was used.

- (7) a. John-i Mary-eykey tali-ka/lul cha-i-ess-ta.
 John.NOM Mary.DAT leg.NOM/ACC kick.PASS.PAST.DECL
 ‘John was kicked the leg by Mary.’
- b. *Tali-ka Mary-eykey John-i/ul cha-i-ess-ta.
 leg.NOM Mary.DAT John.NOM/ACC kick.PASS.PAST.DECL
 ‘John was kicked the leg by Mary.’

In (7a) and (7b), the possessor NP and the possessed NP were passivised respectively. As you can see, (7a) is acceptable, while (7b) is not. The difference appears also in topicalization. Let’s see the following sentences.

- (8) a. John-un, Mary-ka tali-lul cha-ss-ta.
 John.TOP Mary.NOM leg.ACC kick.PAST.DECL
 ‘As for John, he was kicked the leg by Mary.’
- b. *Tali-nun, Mary-ka John-ul cha-ss-ta.
 leg.TOP Mary.NOM John.ACC kick.PAST.DECL
 ‘As for the leg, John was kicked by Mary.’

In (8a) and (8b), the possessor NP and the possessed NP were topicalized respectively. As you can see, (8a) is acceptable, whereas (8b) is not. These facts demonstrate that inalienable possessed NP became a minor/secondary predication. These sentences make a contrast with the following sentences, which were made from (6b) (alienable possessions).

- (9) a. *John-i Mary-eykey cha-ka/lul cha-i-ess-ta.
 John.NOM Mary.DAT car.NOM/ACC kick.PASS.PAST.DECL
 ‘John was kicked the car by Mary.’
- b. *Cha-ka Mary-eykey John-i/ul cha-i-ess-ta.
 car.NOM Mary.DAT John.NOM/ACC kick.PASS.PAST.DECL
 ‘John was kicked the car by Mary.’
- (10) a. *John-un, Mary-ka cha-lul cha-ss-ta.
 John.TOP Mary.NOM car.ACC kick.PAST.DECL
 ‘As for John, he was kicked the car by Mary.’
- b. *Cha-nun, Mary-ka John-ul cha-ss-ta.
 car.TOP Mary.NOM John.ACC kick.PAST.DECL
 ‘As for the car, John was kicked by Mary.’

In (9a) and (9b), the possessor NP and the possessed NP were passivised respectively. As you can see, both sentences are unacceptable. Likewise, in (10a) and (10b), the possessor NP and the possessed NP were topicalized respectively. As you can see, both sentences are bad. These contrasts illustrate that there are some differences between inalienable possessions and alienable possessions, and Kim claims that inalienable possessions, not alienable possessions, made MACs acceptable.

Cho (2003:345-6) and Cho and Lee (2003) also claimed that the conditioning factor in felicitous MACs is the entailment condition. That is, if the VP has a

form [VP NP1 NP2 V], in order to be well-formed as an MAC, NP2+V must entail NP1+V. Let's see the sentence (5) again. If Mary kicked John's leg as in (6a) (inalienable possession), then it means that she kicked him. However, if Mary kicked John's car as in (6b) (alienable possession), then it does not mean that she kicked him. Cho (2003) and Cho and Lee (2003) proposed that this entailment condition can only hold if NP1 and NP2 are related by inalienable possession, and mentioned that this is a crucial conditioning factor that makes (6a) acceptable.

2.2 Contiguous (Alienable) Possessions

Contiguous (alienable) possessions started from the following sentences (Yeon, 1999:222).

- (11) a. Suni-ka Youngsu-uy os-ul ccic-ess-ta.
 Suni.NOM Youngsu.GEN clothes.ACC tear.PAST.DECL
 'Suni tore off Youngsu's clothes.'
- b. Suni-ka Youngsu-lul os-ul ccic-ess-ta.
 Suni.NOM Youngsu.ACC clothes.ACC tear.PAST.DECL
 'Suni tore off Youngsu's clothes.'

In the analysis of these sentences, he mentioned that the possessor ascending in (11) is not always possible. He pointed out that (11b) is possible only when *Youngsu* is actually wearing the clothes but that it is not possible when his clothes are hanging in the closet. He said "the relevant factor, here, then, is not really the absolute distinction between inalienable possession (i.e. body-part) and alienable possession, as is often assumed, but is rather whether or not the possessor physically *contiguous* with the possessed object."

Since Yeon (1999), several studies mentioned similar sentences. For example, Yoon (2001) and Tomioka and Sim (2007) mentioned that the following sentence is grammatical.

- (12) Cheli-ka Swuni-lul chimascalak-ul putcap-ass-ta.
 Cheli.NOM Swuni.ACC dress.train.ACC catch.PAST.DECL
 'Cheli caught the train of Swuni's dress.'

Here, *chimascalak* (dress train) can be detachable from *Swuni*. That is, an alienable possession holds between two NPs in this sentence. Notwithstanding, this sentence is acceptable, even though the sentence has an alienable possession relation from the possessor NP.

Recently, Ryu (2013:14) mentioned that the following sentence is also possible and proposed it as another type of semantic relation (Type 13: Possessor-Object).

- (13) Ku yeca-ka kapang-i mesiss-ta.
 The lady.NOM bag.NOM be-fashionable.DECL
 'The bag of the lady is fashionable.'

Here, *kapang* (the bag) can be detachable from *Ku yeca* (the lady). That is, an alienable relation holds between two NPs in this sentence. However, the sentence

is acceptable. (13) is a case of MNCs, and (12) is a MACs. Therefore, we can say that contiguous (alienable) possessions are also acceptable in MCCs. Accordingly, it becomes necessary to examine the contiguous (alienable) possessions in addition to alienable/inalienable possessions, which can affect the acceptability of the MCCs.

3. Research Method

3.1 Experimental Design

In order to examine native speakers' intuition experimentally, it is necessary to make target sentences.⁵ The sentences have to include the factors which we want to examine. The target sentences in this paper were made as follows. In our experiment, we had two factors: alienability and animacy. The first factor was alienability, and this factor had three values: inalienable, contiguous (alienable), and alienable. The second factor was animacy, and this factor also had three values: human, animal, and inanimate. Since we had two factors and each factor had three different values respectively, we have nine combinations. Accordingly, nine target sentences have to be made both for MNCs and MACs.

The problem in the composition of the target sentences was to find out contiguous (alienable) and inalienable parts for three different types of animacy. First of all, this study chose *sonye* 'girl' for an entity for human being and *kangaci* 'dog' for that of animal. Then, for the inalienable possessions, the word *tali* 'leg' was chosen, since all of the three different types of entities may have legs. However, it was difficult to find out a word for the contiguous (alienable) possessions of inanimate entities, since the same types of objects had to be possessed by human beings and animals. After thinking it over for a long time, *paci* 'overall' was chosen for an entity of inanimate, since the overall had both legs as an inalienable part and straps as an alienable part. Accordingly, three entities were chosen for animacy distinctions in this paper: *sonye* 'girl' for human being, *kangaci* 'dog' for animal, and *paci* 'overalls' for inanimate.

The following sentences are the target sentences for inalienable possessions in MNCs. Here, the type names were assigned to each sentence for easy reference in the statistical analysis.⁶

(14) **N01**: inalienable, human

Ku sonye-ka tali-ka kil-ta.
The girl.NOM leg.NOM be-long.DECL

'The leg of the girl is long.'

⁵ This paper doesn't include the theoretical basis of experiment, even though it was mentioned that the experiments were based on Johnson (2008). For further details, see Lee (2013) and Lee (2014).

⁶ Here, **N01**, **N02**, and **N03** refer to the type of MNCs. The sentence (14) has an inalienable possession and a human entity, (15) contains an inalienable possession and an animal entity, and (16) covers an inalienable possession and an inanimate entity.

- (15)
- N02:**
- inalienable, animal

Ku kangaci-ka tali-ka kil-ta.
The dog.NOM leg.NOM be-long.DECL

‘The leg of the dog is long.’

- (16)
- N03:**
- inalienable, inanimate

Ku paci-ka tali-ka kil-ta.
The overalls.NOM leg.NOM be-long.DECL

‘The leg of the overalls is long.’

As you can see in these examples, the possessed NPs and predicates are identical in all of the three sentences. However, the possessor NPs are different. *Sonye* (a girl; human being) is used in (14), *kangaci* (a dog; animal) is used in (15), and *paci* (an overalls; inanimate) is used in (16). Though all of these entities are different, all of them can have legs as their body parts. By making the possessor NPs take one of these three different kinds of entities, it is also possible to examine how the three-way human/animal/inanimate distinction may affect the acceptability of the MNCs.

For the sentences with contiguous (alienable) possessions, the word which related to a string was selected. Since a string could be a contiguous (alienable) part and all the different objects might have some forms of strings, the corresponding words were chosen for contiguous possessions. The following example sentences were used for this purpose.

- (17)
- N04:**
- contiguous, human

Ku sonye-ka mok.kel.i-ka kil-ta.
The girl.NOM necklace.NOM be-long.DECL

‘The necklace of the girl is long.’

- (18)
- N05:**
- contiguous, animal

Ku kangaci-ka mokcul-i kil-ta.
The dog.NOM lead.NOM be-long.DECL

‘The leash of the dog is long.’

- (19)
- N06:**
- contiguous, inanimate

Ku paci-ka ekkaykkun-i kil-ta.
The overalls.NOM straps.NOM be-long.DECL

‘The (shoulder) straps of the overalls are long.’

In these sentences, the possessor NPs and the predicate are identical for each type of entity. The only difference lies in the possessed NPs. Though each lexical entry is different, each object has a form of string. Both *mok.kel.i* (a necklace) and *mokcul* (a leash) are a kind of string (in Korean, *cul* or *kkun*); and *ekgaykkun* (straps) is also a kind of string, even though it is hung on the shoulder. Accordingly, all three different types of entities have a kind of string as a contiguous (alienable) part.

The most difficult part in making the target sentences was to make sentences for (purely) alienable possessions, since (i) the possessed NPs had to be alienable from the possessor NPs and (ii) the possessed NPs must not be interpreted as contiguous (alienable) possession. In previous studies, a few objects such as *cha* (the car), *yenphil* (the pencil), or *chayk* (the book) were used for representing (purely) alienable possessions. However, these objects were not available in our experiments, because the same alienable possessions had to be applied to all of the entities (human, animal, and inanimate). Accordingly, the words which related to a house or a container were selected instead. Since a house or a container can be an alienable part like *cha* (the car) and all the different types of entities may be contained into the house or the container, the words for a house or a container were chosen for (purely) alienable possession. The following example sentences were used for this purpose.

(20) **N07**: alienable, human

Ku sonye-ka cip-i khu-ta.
The girl.NOM house.NOM be-big.DECL

‘The house of the girl is long.’

(21) **N08**: alienable, animal

Ku kangaci-ka cip-i khu-ta.
The dog.NOM doghouse.NOM be-big.DECL

‘The doghouse of the dog is big.’

(22) **N09**: alienable, inanimate

Ku paci-ka sangca-ka khu-ta.
The overalls.NOM straps.NOM be-big.DECL

‘The box of the overalls is big.’

As in the sentences for contiguous possessions, the possessed NPs and the predicate were identical for each type of entity. The only different is the possessed NP. Though each lexical entry is different, each entity has a house or a container as an alienable part. Both *cip* (a house) and *sangca* (a box) are a kind of container which the possessor NPs can go into. Accordingly, we can say that all three different types of entities have a kind of entity as an (purely) alienable part.

The example sentences for the MACs were made by shifting the two NPs in MNCs to the object position. The predicates in the corresponding MNCs were also changed. For example, (23) is the MAC counterpart of the sentence (14).

(23) **A01**: inalienable, human

Chelsoo-ka ku sonye-lul tali-lul cap-ass-ta.
 Chelsoo.NOM the girl.ACC leg.ACC grab.PAST.DECL

‘Chelsoo grabbed the leg of the girl.’

As you can observe, the head noun of the NPs (*sonye* and *tali*) were identical both in (14) and in (23), even though the predicate was changed from *kil-ta* (be long) to *cap-ass-ta* (grabbed). The other examples in human and animal entities (**A02-A06**) were made with the same strategy. The examples in inanimate entities (**A07-A09**) were made similarly, but the predicate was changed from *khu-ta* (be big) to *cha-ss-ta* (kicked), as in (1b).⁷

Because both MNCs and MACs had 9 types of combinations, a total of 18 target sentences were included in the experiments. Along with these target sentences, distracting sentences of the double number (18 sentences) were also provided for MNCs and MACs respectively. Among the distracting sentences, the half of them were constructed by replacing the Case markers with the topic marker *-(n)un*, and the other half were constructed from the combination of grammatical and ungrammatical sentences which have no relations with the target sentences. Accordingly, a total of 54 sentences were included in the experiments. Then, the collected sentences were randomized using the sampling function in R. The randomizing processes proceeded as follows. The randomizing function was run five times, and the different order of numbers (from 1 to 54) was generated each time. Then, the generated numbers were given to each sentence, and the sentences were sorted by the assigned numbers. At last, the final questionnaire was made by sorting the sentences with the assigned numbers. Accordingly, five different sets of questionnaires were generated through the randomizing processes, and these questionnaires were randomly provided to the informants.

The experiments were conducted for the 5 different groups of students in one week before the mid-term exam of the 2014 spring semester. The experiments were performed as follows. Each questionnaire consisted of four sections, following Johnson (2008). In the first section, the informants were given a sample line, and the numerical score of 130 was given to the line. Then, they were provided with 10 lines with different length, and they were instructed to judge the length of the lines. They were said to write the numerical estimates for each line, which they thought of as the lengths of the lines compared with the standard line with the numerical score of 130. In the second section, the informants were given a sample Korean sentence perfectly grammatical. Unlike Johnson (2008), both the line drawing and the numerical estimate 183 was given to the sentence. This numerical value was given to them in order to avoid the same problem that Bard et al. (1996) pointed out. Then, they were provided with 10 different Korean sentences. Some of them were acceptable, some others were not, and the others were in-between. They were instructed to draw a line for each sentence which corresponded to their judgment of the acceptability, compared with that of the standard line with the numerical

⁷ It is impossible to grab a house, but it is possible to kick a house or a box. That is why *cha-ta* (kick) was chosen as a predicate in MACs.

score of 183, and they were also instructed to provide the numerical estimate for the given sentence. The possible length of the lines ranged from 0 mm to 170 mm, and the possible range of numerical scores was from 0 to 200. In the third section, the target sentences were given. The informants were instructed to estimate the grammaticality of the target sentences by drawing lines. The possible length of the lines ranged from 0 to 170 mm, as in the second section. In the last session, the informants were provided with the same target sentences. Now, they were to estimate the grammaticality of the target sentences with numerical estimates. The possible range of numerical scores was from 0 to 200.

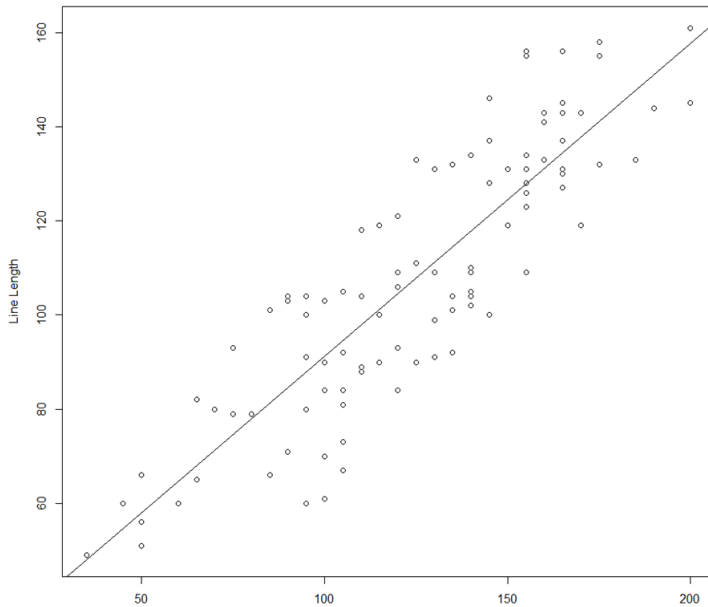
After the experiment, all the data for the 18 sets of target sentences were extracted from all of the sentences: 9 for MNCs and 9 for MACs. A total of 132 students participated in the experiments. Among the 132 students, only the data for 117 informants were available. However, among the answers of these 117 students, some answers were missing.⁸

That is, there were some students who answered to some sentences but provided no answer to some others. A total of 14 students answered in this fashion, and the data sets for these informants were excluded. Finally, the data sets of the remaining 103 participants were extracted. However, among those students, one belonged to the outlier in terms of their ages and two are very close to it. Accordingly, the data sets for these three students were also excluded. Consequently, the data sets for only a total of 100 students were included in the statistical analyses. The age distribution of those 100 students was as follows ($m=22.21$, $sd=1.909$).

For each informant, 18 target sentences were collected (9 for the MNCs and 9 for MACs). For each of the data sets, two different kinds of data were extracted: one for numerical estimates and the other for line drawing. Since two different kinds of scales were used in the experiments, it was necessary to check the correlation between these two scores. Figure 1 shows the correlations of the first data set **N01**.

Here, r was 0.868. Since it is said that the two variables have correlations if the r value is over 0.5, it will be safe to say that the line drawing and numerical estimate are highly correlated in this data set. The mean (m) and standard deviation (sd) of the whole data sets were 0.877 and 0.026 respectively. Though the native speakers' intuition was measured with two scales (numerical estimates and line drawing), the latter was adopted in the actual analyses since it can avoid the problems that Bard *et al.* (1996) pointed out.

⁸ In fact, there were two more experiments except the one described in this paper. Accordingly, a total of three different experiments were performed to the same informants. The goal of the second experiment, which was described in this paper, was to investigate how the inalienable/alienable possessions and animacy affected the acceptability judgment of native speakers. The first and the third experiment were to examine how the semantic relations and the number of NPs affected the acceptability judgment of the MCCs respectively. The experiments were performed at the beginning of the 2014 spring semester, just before the midterm exam, and just before the final exam. In order to examine how each factor affected the acceptability judgment of the students, the private information of the informants was also controlled. In the questionnaires, the informants were asked to add their personal information (name and student number) so that the three sets of data could be correctly aligned per each person after the experiments. Then, only the data were selected for the persons who answered all of the three times of questionnaires. That's why only 117 sets of data were chosen among the 132 data sets. The analysis results of the first experiments were demonstrated in Lee (2014).



[Figure 1] Correlation between Numerical Score and Line Length for the Set **N01**

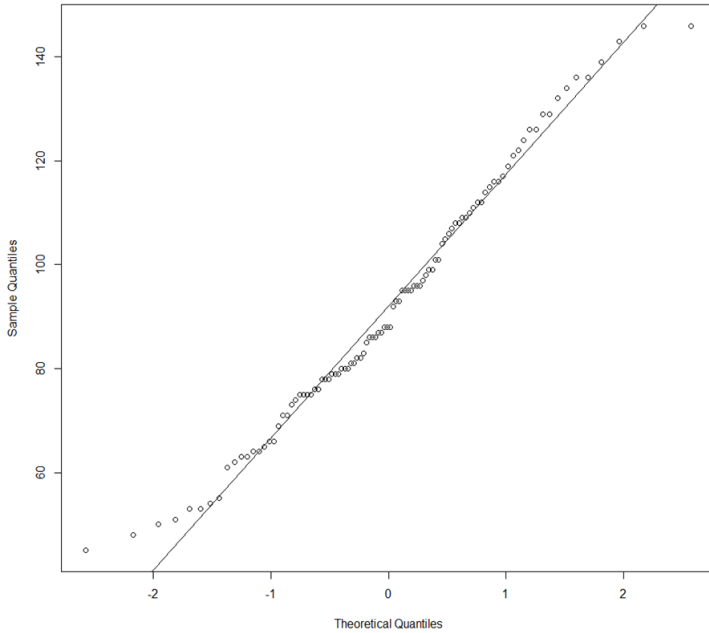
3.2 Normality Test

After the scores for the line drawing were chosen for each target sentence, the first thing that we had to do was a normality test. The reason was that the types of statistical tests were determined by the results of the normality tests. If the distributions of data followed the normal distribution, we could apply parametric tests such as a *t*-test or an ANOVA. If not, non-parametric tests had to be applied, including Wilcoxon tests or Friedman tests. Therefore, it was important to check whether the distributions of data sets followed the normal distribution or not.

There are a few different sorts of normality tests. One is to use a Normal Quantile Plot (Baayen, 2008). For example, the 100 data for the set **N02** can be represented in the Normal Quantile Plot as in Figure 2:

In this plot, the closer the points get to the Q-Q line, the closer they are to the normal distribution. As you can see, most of the points, especially those in the middle, are attached very close to the Q-Q line. Accordingly, we may guess that these data follow the normal distribution. However, see the lower left part of the plot. Most of the points are very far from the Q-Q line. Consequently, you cannot be sure the normality of the distribution.

One of the disadvantages using the Normal Quantile Plot is that we cannot numerically decide whether the given data follows the normal distribution or not. The normality test that solves this problem is a Shapiro-Wilk Normality Test. For example, if we perform the test with the scores for the set **N02**, we have a *p*-value 0.135. Since this *p*-value is much higher than the α -value of 0.05, we cannot reject



[Figure 2] Normal Quantile Plot for the Set **N02**

the Null Hypothesis that this data follows the normal distribution. That is, we can say that this data follows the normal distribution.

In the actual statistical analyses, the Shapiro-Wilk Normality Tests were used. If the p -value is bigger than the α -value of 0.05, the data is said to follow the normal distribution. If the p -value is smaller than the α -value of 0.05, the data is said not to follow the normal distribution. Table 1 illustrates the analysis results of the tests.

	T01	T02	T03	T04	T05	T06	T07	T08	T09
MNCs	○	○	○	○	○	○	○	×	○
MACs	○	○	×	○	○	○	○	○	○

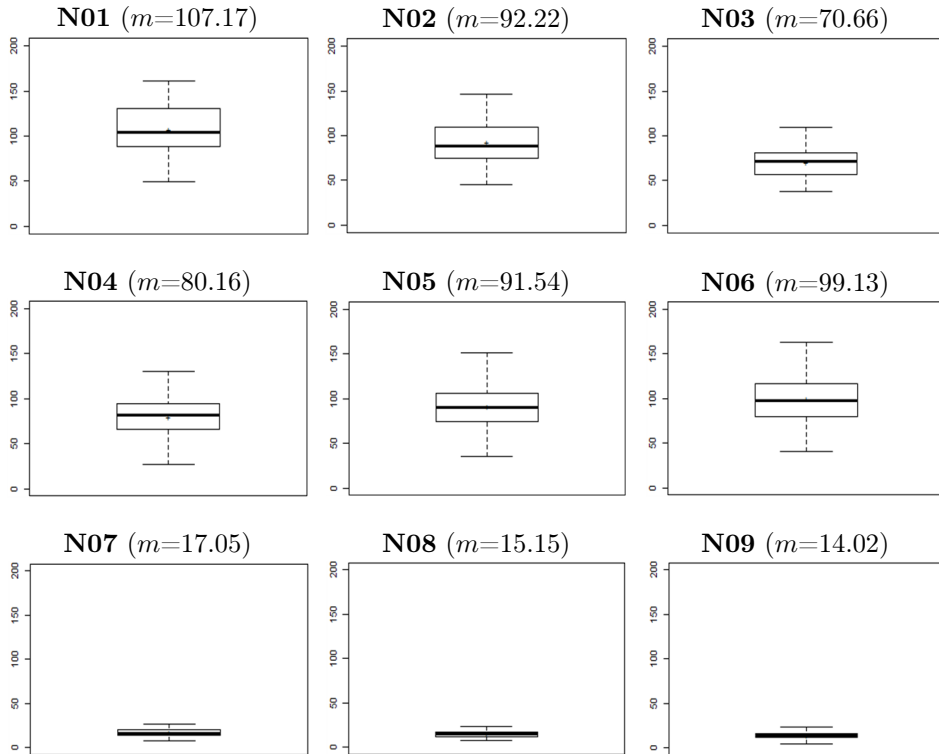
[Table 1] Results of the Shapiro-Wilk Normality Tests

In the data sets of our experiment, only two sets of data (**N08** and **A03**) did not follow the normal distribution. Since only two sets of data did not follow the normal distribution among 18 data sets, parametric tests such as t -tests and ANOVA were used in the statistical analysis. However, non-parametric tests were also used such as Wilcoxon tests or Friedman tests, when they are necessary.

4. Analysis Results

4.1 MNCs

Figure 3 illustrates the results of the intuition test for the 9 types of MNCs. For each type, the (arithmetic) mean values are provided with a little plus sign (+) in addition to the box plots, and the mean values are also provided.



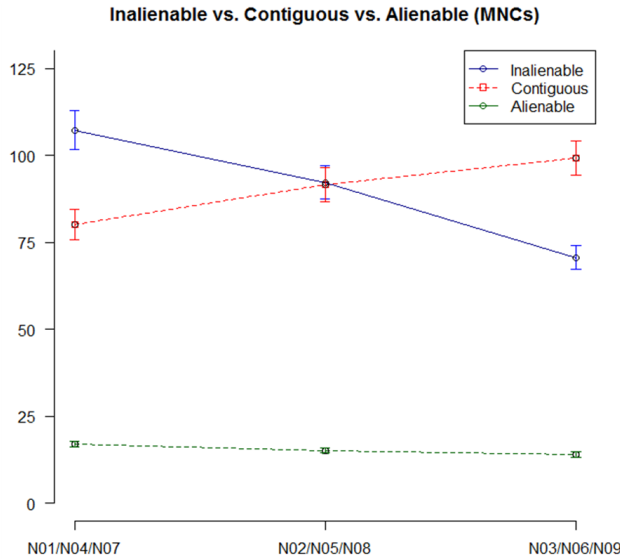
[Figure 3] Results of the Grammaticality Judgment Task for the 9 Types of MNCs

If the data were represented with line graphs, it would be as in Figure 4.

Here, the I-shaped lines represent 95% confidence intervals (CIs). As you can see, the data in the (purely) alienable group are clearly separated from the data in inalienable and contiguous group. You may observe that there are the tendencies that the mean values decrease in the inalienable group but that the values increase in the contiguous group. Also note that the CIs of **N02** and **N05** overlapped.

As for these data, we have to check if the mean values of nine different types show statistically significant differences depending on the two factors, alienability and animacy. In order to answer this question, an ANOVA test is necessary. Since we have two factors which affect the distribution of data, we have to perform a two-way ANOVA test. Table 2 illustrates the analysis results.

This table demonstrates that two main factors (alienability and animacy) and



[Figure 4] Line Plots for the 9 Types of MNCs

	<i>df</i>	SS	MS	<i>F</i>	<i>p</i>
Alienability	2	730,343	365,172	532.92	0.000***
Animacy	2	7,879	3,940	5.75	0.003 **
Alienability:Animacy	4	19,736	4,934	7.20	0.000***
Residuals	891	610,536	685		
Total	899	1,368,494	374,731		

[Table 2] Results of the Two-way ANOVA for the 9 Types of MNCs

their interaction significantly influenced the acceptability of the MNCs.

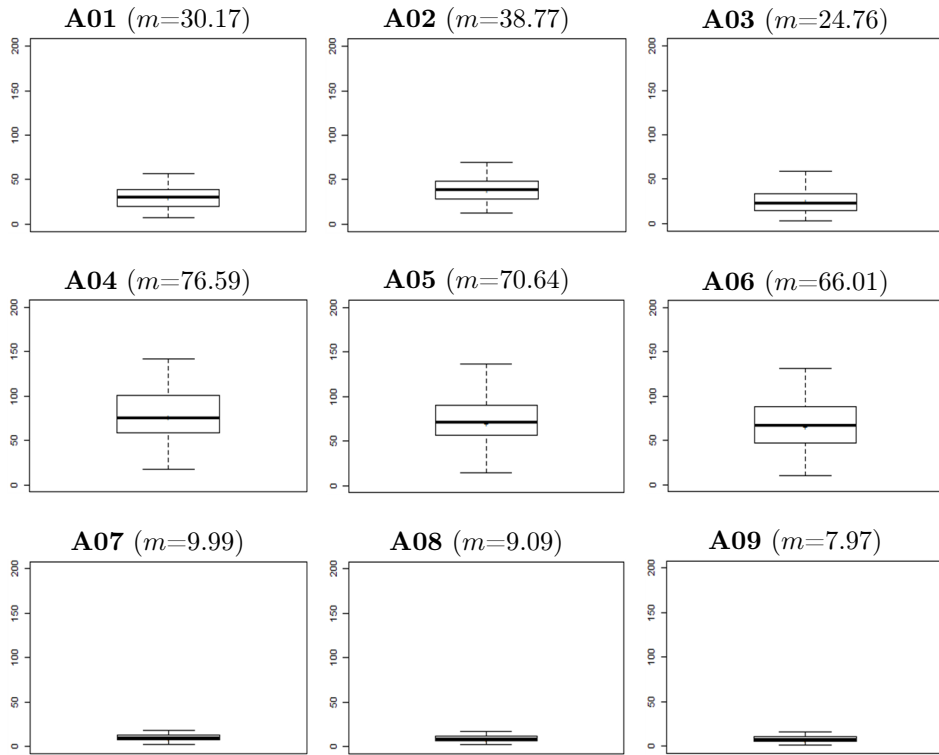
4.2 MACs

Figure 5 illustrates the results of acceptability judgment task for the 9 types of MACs. As in MNCs, the mean values are added into the box plot for each type, and each mean value is also provided numerically.

If the data were represented with line graphs, it would be as in Figure 6.

Unlike MNCs, the data of all the groups are clearly separated from one another. You may also find a tendency that the mean values decrease in the contiguous group but that there is no such tendency in the inalienable and alienable groups. Also note that all the CIs does not overlap.

As in MNCs, we have to check if the mean values of nine different types show statistically significant differences depending on the two factors, alienability and animacy. In order to answer this question, an ANOVA test is necessary. Since we have two factors which affect the distribution of data, we have to perform a two-



[Figure 5] Results of the Grammaticality Judgment Task for the 9 Types of MACs

way ANOVA test. Table 3 illustrates the analysis results.

	<i>df</i>	SS	MS	<i>F</i>	<i>p</i>
Alienability	2	756,512	378,256	533.05	.000***
Animacy	2	7,229	3,614	5.09	.006 **
Alienability:Animacy	4	18,692	4,673	6.59	.000***
Residuals	891	632,258	710		
Total	899	1,414,691	387,253		

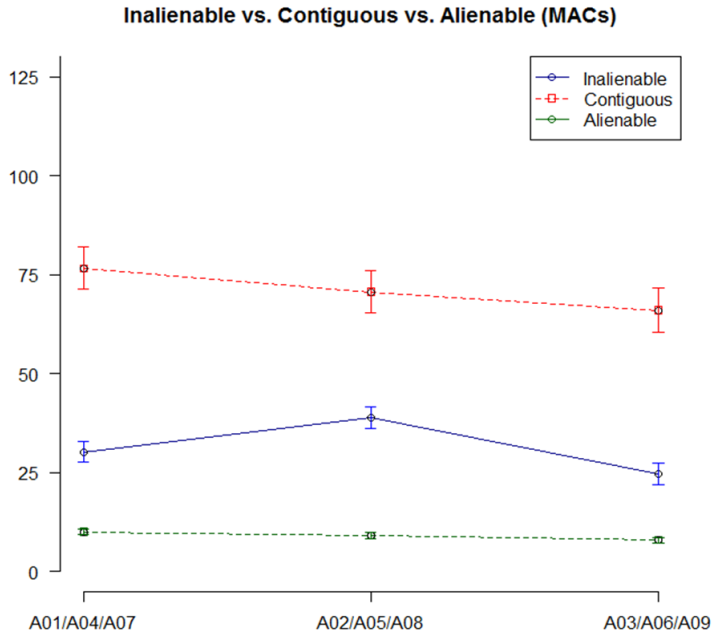
[Table 3] Results of the Two-way ANOVA for the 6 Types of MACs

This table demonstrates that two main factors (alienability and animacy) and the interaction of them significantly influenced the acceptability also in the MACs.

4.3 MNCs vs. MACs

Now, let's see how the alienability and animacy distinctions affected acceptability of MCCs. Figure 7 shows the comparison of MNCs and MACs.

As you can observe, there are some differences between each pair of the types.



[Figure 6] Line Plots for the 6 Types of MACs

In order to examine if the distributions of MNCs are different from those of MACs, paired *t*-tests and Wilcoxon Signed Rank tests were performed. The results showed that the distributions of MACs were significantly different from those of MNCs ($V=45, p=0.004$). The analysis results for each pair are shown in Table 4.⁹

	T01	T02	T03	T04	T05	T06	T07	T08	T09
<i>t/V</i>	24.844	19.030	5050	1.030	5.473	8.929	12.315	4597	11.776
<i>p</i>	.000	.000	.000	.304	.000	.000	.000	.000	.000

[Table 4] MNCs vs. MACs

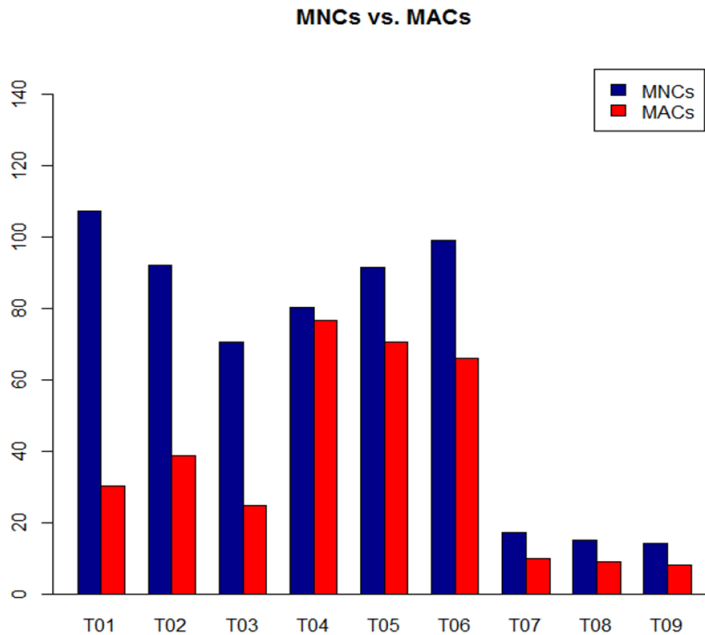
As you can observe, in all the pairs of data sets, the distributions of MNCs were significantly different from those of MACs, except **N04-A04** pair.

5. Regression Test

5.1 MNCs

In order to graphically represent how two factors and their interactions influence acceptability of MNCs, a regression test was performed. Table 5 shows us the

⁹ In this table, two pairs of data (**T03** and **T08**) were compared with the Wilcoxon Signed Rank tests and their results were shown with the *V* values and the *p*-values. The data in the other groups were compared with the *t*-tests and their results were shown with the *t* values and the *p*-values. Note that **N08** and **A03** did not follow the normal distribution in Table 1.



[Figure 7] MNCs vs. MACs

analysis results. The adjusted r^2 value was 0.7771, which implies that 77.71% of the data can be explained with this analysis.

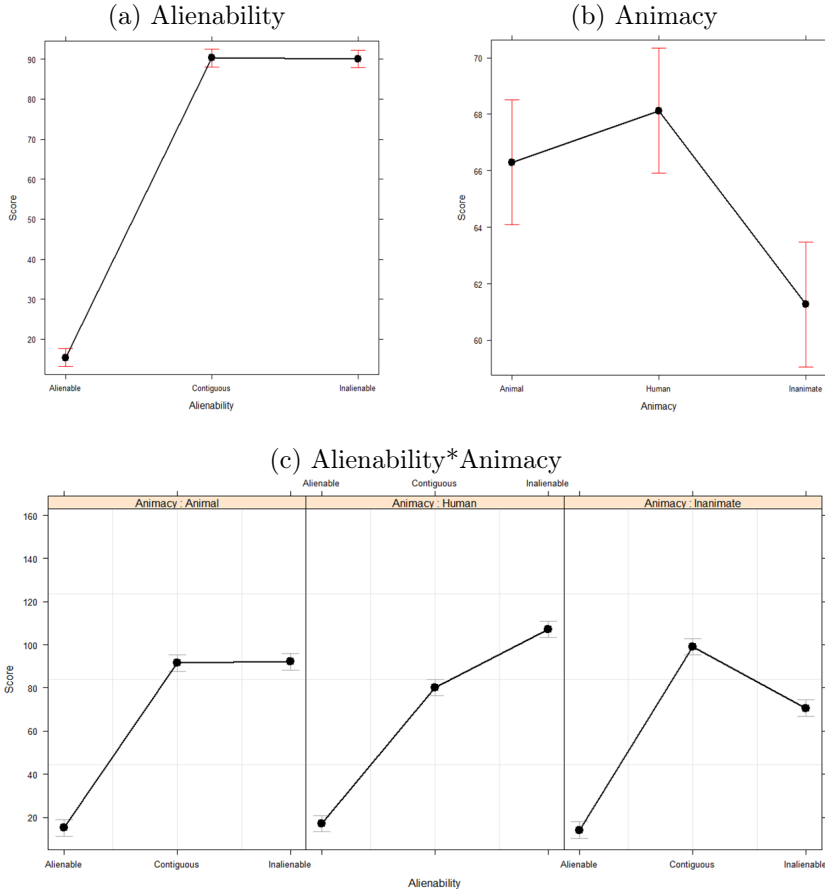
	Estimate	SE	t	p
(Intercept)	65.233	0.652	100.012	.000 ***
Alienability1	-49.827	0.922	-54.017	.000 ***
Alienability2	25.043	0.922	27.149	.000 ***
Animacy1	1.070	0.922	1.160	.246
Animacy2	2.893	0.922	3.137	.002 **
Alienability1:Animacy1	-1.327	1.305	-1.017	.309
Alienability2:Animacy1	0.193	1.305	0.148	.882
Alienability1:Animacy2	-1.250	1.305	-0.958	.338
Alienability2:Animacy1	-13.010	1.305	-9.973	.000 ***

[Table 5] Results of Regression Test in MNCs

Here, the intercept values are those for the Alienable-Animal combination. Accordingly, Alienability1 and Alienability2 refer to contiguous and inalienable possessions respectively, and Animacy1 and Animacy2 refer to human and inanimate respectively. As you can see in this table, the overall alienability-animacy combinations were significant. However, only half of the combinations (Alienability1, Alienability2, Animacy2, and Alienability2:Animacy1) were significant, and all the

others were statistically insignificant

Figure 8 graphically represents the effects of two main factors and their interactions. Here, the I-shaped lines represent 95% confidence intervals (CIs).



[Figure 8] Effects of Two Main Factors and Their Interactions in MNCs

Here, (a), (b), and (c) are effects plots for Alienability, Animacy, and Alienability*Animacy respectively.

These effects plots say something more which was not mentioned in Section 4.1. In Section 4.1, we said that two main factors (alienability and animacy) and the interaction of them significantly influenced the grammaticality of the MNCs. In (a), however, the CI for inalienable group overlapped with that of contiguous group. This implies that inalienable and contiguous distinctions did NOT have any effect on the acceptability of MNCs. In (b), the CI for human overlapped with that of animal, and the CI for inanimate was distinguished from those of the other two groups. This implies that human-animal distinctions did NOT have much effect on the acceptability of MNCs, but that animate/inanimate distinctions HAD much

effect on the grammaticality of MNCs. On the other hand, we can get the analysis results in (c) by separating three lines in Figure 4.

5.2 MACs

In order to graphically represent how two factors and their interactions influence the grammaticality of MACs also, a regression test was performed. Table 6 shows us the analysis results. The adjusted r^2 value was 0.687, which implies that 68.70% of the data can be explained with this analysis.

	Estimate	SE	<i>t</i>	<i>p</i>
(Intercept)	37.110	0.585	63.489	.000 ***
Alienability1	-28.093	0.827	-33.986	.000 ***
Alienability2	33.970	0.827	41.095	.000 ***
Animacy1	2.390	0.827	2.891	.004 **
Animacy2	1.807	0.827	2.186	.029 *
Alienability1:Animacy1	-2.317	1.169	-1.982	.048 *
Alienability2:Animacy1	-2.830	1.169	-2.421	.016 *
Alienability1:Animacy2	-0.833	1.169	-0.713	.476
Alienability2:Animacy1	3.703	1.169	3.168	.002 **

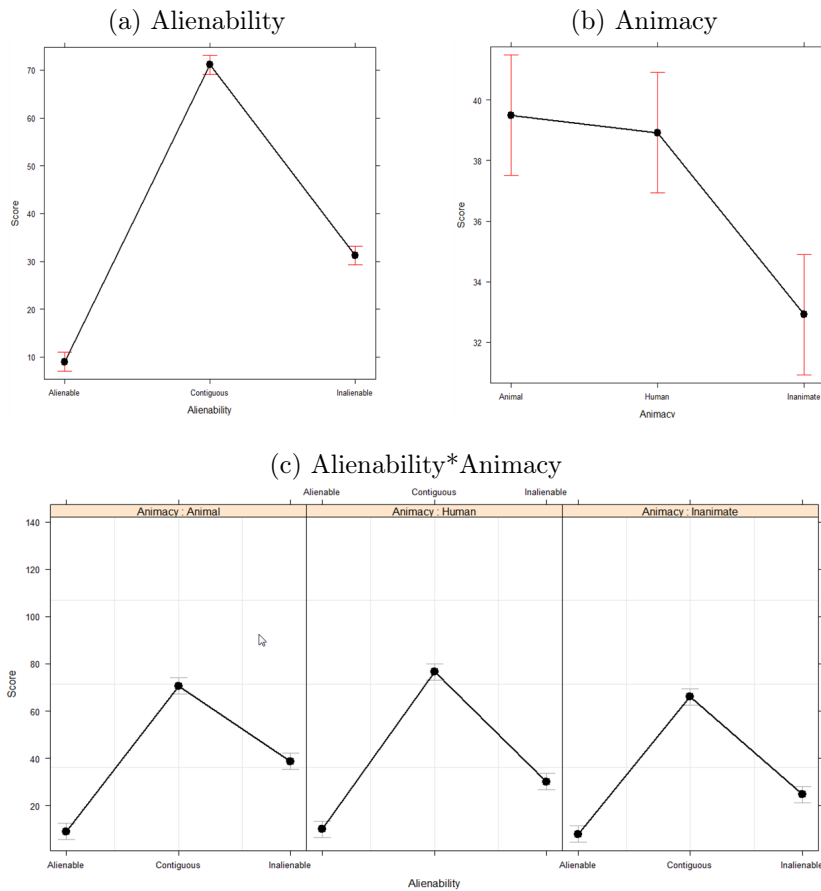
[Table 6] Results of Regression Test in MNCs

Here, the intercept values are those for the alienable-animal combination. Accordingly, Alienability1 and Alienability2 refer to contiguous and inalienable possessions respectively, and Animacy1 and Animacy2 refer to human and inanimate respectively. As you can see in this table, the overall alienability-animacy combinations were significant. However, the combination Alienability1:Animacy2 was insignificant, while the other factors or interactions were statistically significant.

Figure 9 graphically represents the effects of two main factors and their interactions.

Here, (a), (b), and (c) are effects plots for Alienability, Animacy, and Alienability*Animacy respectively.

These effects plots repeatedly demonstrate slightly different observations which were made in Section 4.2 and those of MNCs. In (a), the CIs for three groups were clearly separated. This implies that inalienable/contiguous/alienable distinctions HAD much effect on the acceptability of MACs. In (b), the CI for human overlapped with that of animal, and the CI for inanimate was distinguished from those of the other two groups. This implies that human-animal distinctions did NOT have much effect on the grammaticality of MACs, but that animate/inanimate distinctions HAD much effect on the grammaticality of MACs. However, note that there is a difference between the pattern of MNCs and that of MACs. In MNCs, the mean value of human is higher than that of animal, whereas the tendency is reversed in MACs. As for (c), we can get the analysis results in (c) by separating two lines in Figure 6.



[Figure 9] Results of Regression Test in MNCs

6. Discussions

Most previous studies mentioned that sentences with inalienable possession were acceptable whereas those with alienable possession were not, including Kang (1987), Choe (1987), Kim (1989, 1990), Yoon (1989), Maling and Kim (1992), Kitahara (1993), Yoon (1997), Moon (2000), Cho (2003), and Cho and Lee (2003). That is, inalienable possession is an important factor which makes the MNCs acceptable. The following sentences demonstrated the differences.

- (4) a. Younghee-uy elkul-i yeppu-ta.
 Younghe.GEN face.NOM pretty.DECL
 ‘Younghee’s face is pretty.’
 b. Younghee-ka elkul-i yeppu-ta.
 Younghe.NOM face.NOM pretty.DECL

‘Younghee’s face is pretty.’

- (5) a. Cheloo-uy yenphil-i pulk-ta.
Chelsoo.GEN pencil.NOM red.DECL
‘Chelsoo’s pencil is red.’
- b. *Cheloo-ka yenphil-i pulk-ta.
Chelsoo.NOM pencil.NOM red.DECL
‘Chelsoo’s pencil is red.’

These sentences seem to demonstrate that alienability is an important factor which makes the MNCs acceptable. Figure 4 clarifies this fact, where the acceptability of the sentences in inalienable group was significantly higher than that of the sentences in alienable group. The results showed that the observations of previous studies were on the right track.

However, there is one interesting fact that we must think about. As you can see in (a) of Figure 9, inalienable vs. contiguous distinctions did not contribute to the acceptability of the MNCs. Note that most parts of CIs of inalienable and contiguous groups overlap ($p=.894$). All of these observations indicate that inalienable vs. contiguous distinctions did not contribute the acceptability of the MNCs.

As in MNCs, most previous studies mentioned that the sentences with inalienable possessions were acceptable also in MACs whereas those with alienable possessions were not. That is, inalienable vs. alienable distinction is an important factor which makes the MACs grammatical. The following sentences demonstrated the difference.

- (1) a. Mary-ka John-ul tali-lul cha-ss-ta.
Mary.NOM John.ACC leg.ACC kick.PAST.DECL
‘Mary kicked John’s leg.’
- b. *Mary-ka John-ul cha-lul cha-ss-ta.
Mary.NOM John.ACC car.ACC kick.PAST.DECL
‘Mary kicked John’s car.’

These sentences seemed to demonstrate that inalienable possession was an important factor which makes the MACs acceptable. In addition to this observation, several studies including Kim (1989, 1990) and Cho (2003) mentioned that the only possible relation in MACs was inalienable possessions, not alienable possessions.

The analysis results of our experiments showed that the observations of previous studies were on the right track. However, there is one interesting fact that we must think about. As you can see in the Alienability effect plot (a) of Figure 9, unlike MNCs, the sentences in contiguous group were more acceptable than those in inalienable group, and the difference is statistically significant. On the other hand, there is little difference in the Animacy effect plot (b). The only difference is that the sentences with an animal entity were more grammatical than those with a human. In the Alienability*Animacy effect plot (c), you may find a different tendency which was observed from that of MNCs. The sentences in contiguous group were more acceptable than those in inalienable and alienable group, in all

the types of Animacy. The facts observed in (a) and (c) of Figure 9 are against the predictions of previous studies, since most of them mentioned that the sentences with inalienable possession were much more grammatical than those with alienable possession.

Then, what happens in MACs? Let's see the sentences the target sentences in **A01** and **A04** again. We repeat the example (23) here for convenience.

(23) **A01**: inalienable, human

Chelsoo-ka ku sonye-lul tali-lul cap-ass-ta.
Chelsoo.NOM the girl.ACC leg.ACC grab.PAST.DECL

'Chelsoo grabbed the leg of the girl.'

(24) **A04**: alienable, human

Chelsoo-ka ku sonye-lul mok.keli-lul cap-ass-ta.
Chelsoo.NOM the girl.ACC necklace.ACC grab.PAST.DECL

'Chelsoo grabbed the necklace of the girl.'

As mentions above, (23) contains an inalienable possession, whereas (24) includes an alienable possession.

If we strictly follow the previous studies on MACs, (23) is acceptable while (24) must be not. In addition, if we apply the entailment condition in Cho (2003) and Cho and Lee (2003), this predication must be right. Why? If Chelsoo grabbed the leg of the girl as in (23) (inalienable possession), then it means that he grabbed her. However, if Chelsoo grabbed the necklace of the girl as in (24) (contiguous possession), then it does not mean that he grabbed her. Accordingly, if we apply the entailment condition, (24) must be unacceptable or at least must be less acceptable than (23). However, the analysis results are against our prediction, since (24) is acceptable and (24) is more acceptable than (23).

Then, what makes this difference and how can the differences between (24) and (1b) be explained? Both (24) and (1b) contain alienable possession, but only (1b) is unacceptable. What makes this difference?

The answer seems that a different kind of possession relations work in (24) and (1b), though both sentences contain alienable possession. The difference in the possession relations makes (1b) unacceptable, while it allows (24) acceptable. Specifically, a different kind of alienable possession holds in these sentences. Note that 'alienable' implies not only 'detachable' but also 'attachable.' That is, since an 'alienable' object can be 'detachable' from the possessor, it is also possible that the object can be 'attachable' to the possessor. Let's see how this definition makes distinctions in (24) and (1b). In (24), *mok.keli* (the necklace) is both 'detachable' and 'attachable' to the possessor *Ku sonye* 'the girl.' In (1a), however, *cha* (the car) is neither 'detachable' nor 'attachable' to the possessor *Mary*. This kind of difference makes (1b) acceptable.

There is another evidence which supports this line of reasoning. Remember that Kim (1989:456) suggested (lexical) passive and topicalization as diagnostics

of inalienable possession. Let's see the following sentences, which were made from (1a).

- (7) a. John-i Mary-eykey tali-ka/lul cha-i-ess-ta.
 John.NOM Mary.DAT leg.NOM/ACC kick.PASS.PAST.DECL
 'John was kicked the leg by Mary.'
 b. *Tali-ka Mary-eykey John-i/ul cha-i-ess-ta.
 leg.NOM Mary.DAT John.NOM/ACC kick.PASS.PAST.DECL
 'John was kicked the leg by Mary.'

In (7a) and (7b), the possessor NP and the possessed NP were passivised respectively. As you can see, (7a) is acceptable, whereas (7b) is not. This difference appears also in topicalization. Let's see the following sentences.

- (8) a. John-un, Mary-ka tali-lul cha-ss-ta.
 John.TOP Mary.NOM leg.ACC kick.PAST.DECL
 'As for John, he was kicked the leg by Mary.'
 b. *Tali-nun, Mary-ka John-ul cha-ss-ta.
 leg.TOP Mary.NOM John.ACC kick.PAST.DECL
 'As for the leg, John was kicked by Mary.'

In (8a) and (8b), the possessor NP and the possessed NP were topicalized respectively. As you can see, (8a) is acceptable, while (8b) is not. These facts demonstrate that inalienable possessed NP became a minor/secondary predication. These sentences make a contrast with the following sentences, which were made from (1b) (alienable possessions).

- (9) a. *John-i Mary-eykey cha-ka/lul cha-i-ess-ta.
 John.NOM Mary.DAT car.NOM/ACC kick.PASS.PAST.DECL
 'John was kicked the car by Mary.'
 b. *Cha-ka Mary-eykey John-i/ul cha-i-ess-ta.
 car.NOM Mary.DAT John.NOM/ACC kick.PASS.PAST.DECL
 'John was kicked the car by Mary.'
- (10) a. *John-un, Mary-ka cha-lul cha-ss-ta.
 John.TOP Mary.NOM car.ACC kick.PAST.DECL
 'As for John, he was kicked the car by Mary.'
 b. *Cha-nun, Mary-ka John-ul cha-ss-ta.
 car.TOP Mary.NOM John.ACC kick.PAST.DECL
 'As for the car, John was kicked by Mary.'

In (9a) and (9b), the possessor NP and the possessed NP were passivised respectively. As you can see, both sentences are unacceptable. Likewise, in (10a) and (10b), the possessor NP and the possessed NP were topicalized respectively. As you can see, both sentences are unacceptable. These contrasts illustrate that there

are differences between inalienable possession and alienable possession, and Kim claims that inalienable possession, not alienable possession, made MACs grammatical.

Let's apply the diagnostics to the sentence (24). Two sentences in (25) were made by passivization, and those in (26) were constructed by topicalization.

- (25) a. *Ku sonye-ka Chelsoo-eykey mok.keli-ka/lul cap-hi-ess-ta.*
 The girl.NOM Chelsoo.DAT necklace.N/A kick.PASS.PAST.DECL
 'The girl was grabbed the necklace by Chelsoo.'
- b. **Cha-ka Cheloo-eykey John-i/ul cha-i-ess-ta.*
 car.NOM Chelsoo.DAT John.NOM/ACC kick.PASS.PAST.DECL
 'The necklace was grabbed the girl by Chelsoo.'
- (26) a. ?*Ku sonye-un, Chelsoo-ka mok.keli-lul cap-ass-ta.*
 The girl.TOP Cheloo.NOM necklace.ACC grab.PAST.DECL
 'As for the girl, she was grabbed the necklace by Chelsoo.'
- b. **Mok.keli-nun, Chelsoo-ka ku sonye-lul cap-ass-ta.*
 necklace.TOP Chelsoo.NOM the girl.ACC grab.PAST.DECL
 'As for the necklace, the girl was kicked by Chelsoo.'

As you observe, the acceptability patterns of (25) were identical with those of (9). That is, the acceptability patterns of alienable possession in (25) were identical with those of inalienable possession in (9). However, the acceptability patterns of (26) were NOT identical with either those of (9) or those of (10). That is, the acceptability patterns of alienable possession in (26) were similar to those of inalienable possession in (10), but NOT identical with those in (10).

What does it mean? It implies that the alienable possession in (24) must be handled differently from the relation in (1b). That is, the syntactic behaviors of the alienable possession in (24) demonstrate similar properties of the inalienable possession in (1a), though they were not identical. There may be two options to handle this relation. The first one is to restrict the 'alienable possession' only to the relations in (24) and assign a different name to the only to the relations in (1b). As mentioned above, the term 'alienable' implies not only 'detachable' but also 'attachable.' That is, since an 'alienable' object can be 'detachable' from the possessor, it is also possible that the object can be 'attachable' to the possessor. As mentioned above, *mok.keli* (the necklace) is both 'detachable' and 'attachable' to the possessor *Ku sonye* 'the girl' in (24). In (1b), however, *cha* (the car) is neither 'detachable' nor 'attachable' to the possessor *Mary*.

Accordingly, we cannot say that the possessive relations in (24) is not true 'alienable.' Only the relation in (1b) is a true 'alienable' relation. Accordingly, we have to restrict the 'alienable possession' only to the semantic relations in (1b) and assign a different name to the only semantic relations in (24). Second, we may divide the category 'inalienable' into two groups. One is for the semantic relation of (24), and the other is for that of (1b). That may be the option that we have chosen in the syntactic literature on Korean Case markers.

In any case, there is one more thing which we have to concern. A few previous studies supposed that the syntactic structure of inalienable possessions is different from those of alienable possessions. That is, they put two different syntactic underlying structures. Then, how can we posit different syntactic structures to these three types of possessions? This is the question that we have to think about in the future studies.

7. Conclusion

In this paper, we examined how two kinds of factors (alienability and animacy) affect the acceptability of the MCCs. Alienability were divided into inalienable, contiguous, and alienable; and animacy were divided into human, animal, and inanimate. In order to investigate the effects of these factors, experiments were designed and performed based on these two factors and their interaction. The experiments were designed following Johnson (2008); and the native speakers' intuition was measured with two scales, numerical estimates and line drawing, though the latter was adopted in the actual analyses. After the experiments, all the data were statistically analyzed with R. Through the analysis, we can investigate how the two factors influence the acceptability of the MCCs.

Through the experiments, the following facts were observed: (i) Both three types of possessions and animacy play a role in the acceptability of MCCs, (ii) The contiguous possessions behave close to inalienable possessions, rather than alienable possessions, and (iii) There was an interaction between three types of possessions and animacy.

The observations supported the previous studies which said that the sentences with inalienable possessions had higher acceptability than those with alienable possessions. However, an interesting observation was that the sentences with contiguous possessions behave differently in MNCs and MACs, though their behaviors were similar to inalienable possessions rather than alienable possessions. In MNCs, the acceptability of the sentences was influenced by the other factor Animacy. When the possessor is a human, the sentences with inalienable possessions had higher acceptability than those with alienable possessions. When the possessor is an animal, the sentences with inalienable possessions showed similar acceptability with those of alienable possessions. When the possessor is inanimate, the sentences with alienable possessions had higher acceptability than those with inalienable possessions. In MACs, the sentences with contiguous (alienable) possessions had higher acceptability than those with the other types of possessions, and the differences were statistically significant. These observations could partly support the Yeon's observations that contiguous group may behave similar to inalienable group. However, the analysis results showed that further studies are necessary, since the sentences in the contiguous group behave differently in MNCs and MACs.

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