Notions of Definiteness, Specificity and Countability in the Grammaticality Judgments on Spanish Article System by Japanese Students

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Abstract

This paper analyses the acquisition of the Spanish definite (*el, la, los, las*) and indefinite *(un, una, unos, unas)* article system in a formal instruction context with Japanese students. The purpose is to study comprehension using grammaticality judgment tasks on 91 participants (including Spanish natives) and the role of features such as definiteness, specificity and noun countability. Data was statistically analyzed and the descriptive part showed no direct relation between instruction time and accuracy. The *a priori* study using Pearson Correlation Analysis and Factorial Analysis concluded that although there were correlations that shared the same type of noun or reference, they were not the only elements present in the recognition of grammaticality. The *a posteriori* part, conducted by means of four ANOVAs, revealed the indefinite article was easier than the definite, something that corroborated previous literature. The context [±definite] [±specific] showed an interaction between groups but not between contexts, and the unspecific context was the most difficult even for natives. Japanese students found the uncountable nouns and plural easier than singular countable nouns.

Key terms: Article acquisition, definiteness, grammaticality judgements, noun countability, Spanish articles, Spanish determiners, specificity

1. Introduction

This research is complementary to a previous paper, Barrera (2008), in which the non-generic uses of Spanish definite articles were studied. The quantity of the data obtained for that study was a precious resource for analysis following the same methodology with three aspects of the "article" category (including Spanish definite, *el*, *la*, *los* and *las*, and indefinite articles, *un*, *una*, *unos* and *unas*) that grammars (both theoretical and practical) consider important from a set of features derived from the Standard Theory (Chomsky, 1965) for the articles, like [± Generalising] [± Distributive] [± Specific] [± Known] [± New referent] [± Identical] [± Identifiable], etc. (see Hawkins, 1978 p. 28). In this paper it was analyzed the role of the type of reference of the Noun Phrase (from now on "NP") with definite/indefinite, specific/unspecific NPs and the countability of the noun.

The definitions of the concepts of "definiteness", "specificity" and "noun countability" vary as will be shown below, but they are fundamental in the current studies of the acquisition of the article paradigm.

Definiteness

The notion of definiteness is very complex as it has been studied from different backgrounds, not only inside Linguistics but Philosophy and Logic. The works of Hawkins (1978), Heim (1991) and Lyons (1999) are fundamental for understanding a feature that distinguishes the use of the definite article from the indefinite article. In applied linguistics it is used an informal definition derived from the authors above that establishes that a NP is definite when refers to entities unambiguously identifiable by the participants of the speech act. In this

sense (1a) requires the use of the definite article and, in contrast, (1b) the indefinite:

(1) a. I'll buy the book we saw yesterday. (*Me compraré el libro que vimos ayer*)
b. I am reading a book. (*Estoy leyendo un libro*)

Specificity

Unlike the definiteness, the specificity refers to a knowledge held by the speaker. The NP with definite articles can have unspecific interpretations when the referent is hypothetic, unidentifiable or inexistent. In (2a) and (2b) the NP is identifiable, requiring the definite article, but in (2a) the referent is inexistent as nobody knows who is the better candidate before doing the selection (in this example the unspecific reading in Spanish is marked by the subjunctive mood of the verb, "esté" instead of the indicative, "está"):

(2) a. We will select the candidate who is most qualified. (*Seleccionaremos al candidato que esté mejor preparado*)
b. We will select the candidate who is from Kenya. (*Seleccionaremos al candidato de Kenia*)

The indefinite NPs can have both interpretations too. As can be appreciated in (3a) it is not presupposed the existence of a girl from that country:

(3) a. He wants to get married with a girl from Cuba. [Everyone is OK]
(*Él quiere casarse con una chica que sea de Cuba*)
b He wants to get married with a girl from Cuba. [She is very pretty]
(*Él quiere casarse con una chica que es de Cuba*)

The examples above correspond to the contexts [+definite –specific], [+definite +specific], [–definite –specific] and [–definite +specific], in order of appearance. See Lyons (1991, p. 166), for Spanish Leonetti (1999, p. 861), for opacity and scope ambiguities (→referential/non referential, wide scope/narrow scope).

Countability

The distinction between "countable" or "count nouns" and "uncountable" or "mass nouns" in Linguistics is very old as grammarians distinguished nouns that can be modified by a numeral or a quantificational determiner. However, noun countability is a concept that differs cross-linguistically: an uncountable noun in English like "furniture" is countable in Spanish, "mueble", and a countable noun like "clothes" in Spanish is uncountable, "ropa". Bello (1847, § 123) explained the uncountable nouns like those which refer to entities that can be divided infinitely maintaining its nature and name, like "water", "wine" or "gold", and the countable nouns would lose their entity if they are divided, the case of "chair" and "table" . In other words, following Bosque (1999, p. 8) this categorization is based on the dichotomy between number (uncountable) and quantity (countable).

With regard to the use of articles, semantically there is equivalence between uncountable singular nouns and countable plural nouns (4a and 4b). On the other hand, the countable noun in (4c) requires a numeral or determiner (* means ungrammatical):

(4) a. Today I bought wine (*Hoy compré vino*) [uncountable]
b. Today I bought some books (*Hoy compré libros*) [countable plural]
c. *Today I bought book (**Hoy compré libro*) [countable singular] (→*a* or *this*; *un* or *este* for Spanish)

However, categorizing the nouns into these two groups like in a "close box" is not proper as there are "recategorizations" like in (5b) where the uncountable noun in (5a) "coffee" has become countable, and requires the use of the definite article:

(5) a. I need coffee in the morning to function. (*Necesito café por las mañanas para funcionar*)
b. I added a spoon of sugar to the coffee before tasting it. (*Añadí una cucharada de azúcar al café antes de probarlo*)

Definiteness, specificity and noun countability in the literature of article acquisition

The early Psycholinguistic studies on article acquisition by Japanese (Hakuta, 1976; Yamada & Matsura, 1982; Mizuno, 1985; Tarone, 1985) did not include the environments of the NPs in their research, a fact that would be used for the first time with Parrish (1987), who adopted for her study the "Semantic Wheel" (Specific Reference [±SR] and Hearer's Knowledge [±HK]) from Huebner (1983) (itself based on Bickerton, 1981). The "Semantic Wheel Model" with the four contexts that determinate the use of the articles was followed systematically in other studies like Tarone & Parrish (1988), Master (1987) –who later, Master (1990), developed a binary system with the features countable/uncountable, indefinite/definite, premodified/postmodified, specific/generic, common/proper, idiomatic/non-idiomatic–, Thomas (1989) –who included also the idiomatic expressions and conventional uses– and Kubota (1994). Other studies included also noun countability, like Yoon (1993) or Butler (2002) –focussed on the metalinguistic knowledge–. The recent studies like Snape (2006) used the "Article Choice Parameter" ([±definite ±specific]) including noun countability, types of specificity (referential/non referential, wide/narrow scope) and of definiteness (anaphoric use, etc.) following Ionin (2003).

2. Method

2.1 Participants

The participants included in this study were 91 students, 61 of whom were Japanese students of Spanish and 30 Spanish native speakers. The natives were university students of Madrid and the Japanese students were from Tokyo University of Foreign Studies. They were divided into three groups attending to their academic year as follows: 30 students in "level 2", 20 in "level 3" and 11 in "level 4". As the Japanese academic and fiscal year starts in April, at the time of study the "level 2" group had had one year of instruction in Spanish, "level 3" two years and "level 4" three.

In respect of gender 79.1% of the subjects were females and their ages ranged from 19 to 23 years old, where 19 and 20 year-olds represented more than half of the total.

2.2 Instrument

To collect the data a questionnaire was designed including two different parts: the first one corresponded to a linguistic biography (age, academic year, languages, etc.) and the second one showed the items to judge (see appendix). There were 54 items which included the contexts to analyze as well as their ungrammatical version. In most cases the items formed part of a conversation between two subjects (A and B) where the first sentence

(A) worked as the context, in brackets, and (B) was the sentence to judge:

(6) [A: Hoy tuve un examen sorpresa]
B: ¿Y qué tal hiciste examen?
[A: Today I had a surprise exam]
B: And how was exam? (Necessary the definite article)

The inclusion of context was due to the importance that not only syntax but also pragmatics and semantics have in the choice of articles. In the development of items for this study it was followed Ionin (2003) and Snape (2006), although the length of every item for the instrument was reduced to a sentence and differed also in the type of task, as their tasks consisted in a fill-in production with definite, indefinite and zero articles as can be appraised in (7):

(7) [+definite, –specific]
Conversation between a police officer and a reporter
Reporter: Several days ago, Mr. James Peterson, a famous politician, was murdered! Are you investigating his murder?
Police officer: Yes. We are trying to find (a, the, --) murderer of Mr. Peterson, but we still don't know who he is.

[Snape, Leung & Ting (2006): example (2)]

The reference of NP [±definite ±specific] and the type of noun [uncountable singular, countable singular and countable plural] were completed with the uses for the definite article described by Leonetti (1999) and permitted the differentiation of 27 contexts and their ungrammatical version. The resulting 54 items were distributed arbitrarily in the questionnaire.

Great care was taken to create items in which the article was not in the subject position, as it is a context where in Spanish, in general, the use of articles is obligatory. Besides, uses close to phraseology (Laca 1999, p. 918) were also avoided in order to restrict the grammatical judgment as much as possible to the elements indicated above. The participants had to decide if the items sounded good or not, and were required to mark one of the five symbols placed on the right of the item. The values ranged from 0 (sounds good) to 4 (sounds bad) and were in an additive scale of the Likert type, that means, an ordinal scale where 4 is not the double of 2 – it is not "double regular"– although it means it sounds worse than 2.

2.3 Procedure

The questionnaire for Japanese students was carried out in Tokyo University of Foreign Studies, during the class time of the subject "American Literature II". The students had instructions, oral and written, not to use dictionary as well as they were informed the task formed part of a research, including the fact that it was anonymous, voluntary and it had no repercussion on their class grade. The professor in charge of the task was present during the process and there was no time limit. All the students agreed to do it and the questionnaire took them about half an hour. The Spanish native speakers were university students of Madrid and they were given the same instructions as the Japanese students, except for the request to not use a dictionary, and completed the same task in ten minutes.

2.4 Analyses

A prior descriptive analysis was required in order to obtain the means of every variable by groups and an unidirectional analysis of variance ANOVA was conducted to know if there were differences between groups (natives-Japanese students, and between the three groups of Japanese) comparing the means of every group. This analysis was important to see if the accuracy in using Spanish articles was related to instruction time or not. The ANOVA was completed by a Post Hoc Analysis, a multi-comparison test that compared one variable with the rest in order to identify the different groups. Besides, it was also necessary to compare the most difficult items for natives and Japanese students to analyze if there were differences in understanding grammaticality.

The descriptive analyses were followed by statistical analyses in which *a priori* and *a posteriori* studies can be distinguished. The *a priori* part of the study included two statistical analyses that represent two different ways to handle the data. The first one consisted in a maximization of data by Pearson Correlation Analysis, in which the score (0-4) of every variable was compared item by item to find a linear association between two variables. The coefficient of this analysis expresses the strength of relations between two variables in a numeric way. The study of a correlation can be very useful to know which criterion is followed to assign the same punctuation and what elements in common are considered to judge the grammaticality. The values between variables X and Y are in an interval from +1 and –1. The sign indicates the direction of the relation: direct if the sign is positive and inverse if it is negative. R=1 is the absolute value, the relation of one item with itself, and the values near to 1 will have a stronger relation of dependence. However, the value r=0 indicates that the compared variables are independent, and that the correlation is null. The General Correlations included the natives and were completed with Partial Correlations, to analyze the different way Japanese and natives associate one item with other. The partial correlation measures the degree of association between two random variables when the effect of a set controlling variable is removed (here "Spanish L1"). The second analysis minimized the information by a Factorial Analysis (FA), searching for a more simple structure between the correlations which allowed globalizing the common elements. This study includes two factorial analyses: the first one considering Japanese and natives, and the other with only Japanese. Because of the dimensions of correlation table (54x54 variables) and the FA they cannot be included here. Finally, the *a posteriori* analysis consisted in four ANOVA that compared the means of every group according to noun definiteness (+definite/–definite), specificity (+specific/–specific), noun countability (+countable/–countable) and noun number (singular/plural). The results are taken following the most conservative indicator: *sphericity assumed.*

3. Results

The general *descriptive data* showed the means by every group, where natives obtained the best mean, as would be expected: 3.32 over 4. The mean in accuracy decreased to 2.29 for Level 2, 2.26 for Level 3 and 2.33 for Level 4. Level 3 showed the lowest mean of Japanese students as can be observed in Table 1:

	Spanish L1	Level 2	Level 3	Level 4	Total
Means	3.32	2.29	2.26	2.33	2.62
Maximum	3.81	2.67	2.72	2.89	3.81
Minimum	2.34	1.87	1.81	1.93	1.81

Table 1. Accuracy means by groups

If the results of natives could be predicted, the mean of Level 3 indicates a backward step in the relation between instruction time and accuracy. Only the indicator of maximum mean shows a slight progression between groups.

	Sum of Squares	df	Mean Square	F	Sig.
Between groups	21.383	3	7.128	86.403	0.000
Within groups	7.177	87	0.082		
Total	28.560	90			

Table 2. Results of ANOVA

The results of a one-way ANOVA (Table 2) corroborated the difference between groups as can be seen in the column on the right (Sig.) where the significativity index was 0.000 ($p=0.000$). As a conclusion, some groups did the task better than others ($p<0.001$; $df=3$; $F=86.403$). However, in order to identify the groups that differed from the other a Post Hoc Test was carried out, whose results are reproduced in Table 3.

Group (I)	Group (J)	Mean difference	Std. Error	Sig.
Spanish L1	Level 2	1.0275*	0.07416	0.000
	Level 3	1.0572*	0.08291	0.000
	Level 4	0.9894*	0.10124	0.000
Level 2	Spanish L1	-1.0275*	0.07416	0.000
	Level 3	0.0296	0.08291	0.722
	Level 4	-0.0381	0.10124	0.708
Level 3	Spanish L1	-1.0572*	0.08291	0.000
	Level 2	-0.0296	0.08291	0.722
	Level 4	-0.0677	0.10781	0.532
Level 4	Spanish L1	-0.9894*	0.10124	0.000
	Level 2	0.0381	0.10124	0.708
	Level 3	0.0677	0.10781	0.532

Table 3. Results of Post Hoc

The natives did the task better than the others groups with a significativity index of $p<0.001$. But on the other hand, the difference between the Japanese students, levels 2 and 3 (0.72), levels 3 and 4 (0.53) and levels 2 and 4 (0.71) cannot be considered significant (<0.05).

The analysis of the five most difficult items (score close to 0) revealed a difference in the judgments for both Japanese and native students. Except item (15) that was present in the second place in the scale of difficulty for Spanish (1.96) and the total of Japanese (1.28) the other four items did not coincide. The five most difficult items for the total number of Japanese students were ungrammatical: the articles were omitted although their use was obligatory. Regarding the reference of the NPs, it was [+definite +specific] in all cases except (15), which was [+definite –specific]. The nouns of (18) and (14) are uncountable ("wine" and "water"), but the remainder contained countable nouns (the number in square-brackets denotes the order of difficulty (-1 is the most difficult); the number in parenthesis denotes the item number in the questionnaire):

[1] (43) Me gustaría visitar pirámides de Egipto.
I would like to visit pyramids of Egypt. (Necessary the definite article)
[2] (15) [A: ¿Qué podemos hacer para reducir la contaminación?]
B: Pues, por ejemplo, usar autobús y no coche.
[A: What can we do to reduce pollution?]
B: Well, for example, use bus and not car. (Necessary the definite or indefinite article)
[3] (20) Aunque soy de París todavía no he subido a torre Eiffel.
Although I am from Paris I have not climbed Eiffel Tower yet. (Necessary the definite article)
[4] (18) [A: Hay muchas clases de vino. No sé cuál comprar…]
B: Compra vino que se llama "Potan". Está buenísimo.
[A: There are a lot of types of wine. I do not know which to buy…]
B: Buy wine called "Potan". It is delicious. (Necessary the definite or indefinite article)
[5] (14) [A: ¿Qué haces en la piscina?]
B: Estoy probando agua.
[A: What are you doing in the pool?]
B: I am testing water. (Necessary the definite article)

On the other hand, native students had problems in recognizing the unspecific nature of items (7), (12), (45) and (29), the first one with an uncountable noun ("money"). Besides, the indefinite reference is present in (7) and (45).

[1] (7) [A: No sabía que ibas a salir hoy.]
B: Sí, me ha llamado Paco. ¿Puedes darme el dinero?
[A: I didn't know you're going out.]
B: Yes, Paco called me. Can you give me the money?
[2] (15) [A: ¿Qué podemos hacer para reducir la contaminación?]
B: Pues, por ejemplo, usar autobús y no coche.
[A: What can we do to reduce pollution?]
B: Well, for example, use bus and not car. (Necessary the definite or indefinite article)
[3] (12) [A: Tengo que comprar dos libros de español.]
B: Yo compré los libros de español ayer.
[A: I have to buy two Spanish books.]
B: I bought the Spanish books yesterday.
[4] (45) [A: ¿Me ha llamado alguien?]
B: Llamó el amigo tuyo hace una hora, pero no sé cómo se llama.
[A: Did anybody telephone me?]
B: Your friend telephoned one hour ago, but I don't know his name.
[5] (29) [A: ¿Has visto las noticias?]
B: Sí, todavía se busca el asesino del señor Escalante. No se sabe quién es.
[A: Have you watched the news?]
B: Yes, they're looking for Mr. Escalante's killer. No one knows who is.

■ The ***a priori*** **analysis** included the Correlation Analysis and the Factorial Analysis:

• The General Correlations

The correlations including natives and Japanese students presented 217 significant correlations (r>0.01), and were analyzed the correlations with figures bigger than r=0.4: 32 in total. Due to the number of participants in the task, the maximum coefficient was lower than 7.

Item (43), the most difficult for the Japanese students, was found in the strongest correlations. In the correlation (43)-(40) (r=0.477) both items are ungrammatical as the use of the definite article is necessary. In (40) the sentence "they are too far for me" refers to a specific set of keys, with a deictic use of the definite article. Hence, the reference is [+definite +specific] and the nouns are countable and plural.

(43) Me gustaría visitar pirámides de Egipto.
I would like to visit pyramids of Egypt. (Necessary the definite article)
(40) Perdona, ¿me das llaves? Están muy lejos para mí.
Sorry, can you pass me keys? They are too far for me. (Necessary the definite article)

However, in the correlation (43)-(14) (r=0.435) although the reference is the same [+definite +specific], both items differ in the type of noun; countable plural in (43) and uncountable in (14).

(43) Me gustaría visitar pirámides de Egipto.
I would like to visit pyramids of Egypt. (Necessary the definite article)
(14) [A: ¿Qué haces en la piscina?]
B: Estoy probando agua.
[A: What are you doing in the pool?]
B: I am testing water. (Necessary the definite article)

(14) is also present in the correlation (14)-(47) (r=0.444). In this case the reference [+definite +specific] and the type of noun, uncountable, are shared by both ungrammatical items.

(14) [A: ¿Qué haces en la piscina?]
B: Estoy probando agua.
[A: What are you doing in the pool?]
B: I am testing water. (Necessary the definite article)
(47) [A: Salgo a comprar harina]
B: Asegúrate de que harina sea para freír.
[A: I go out to buy flour.]
B: Make sure that flour is for frying. (Necessary the definite article)

• The Partial Correlations

In the *partial correlations,* those in which the variable "natives" did not participate, it was found the same correlation as explained above, (30)-(41), although this time the coefficient was lower: r=0.466.

The partial correlation with the highest coefficient is (11)-(12) (r=0.61) which share the reference of the NP, [+definite +specific], and the noun, countable plural although in (11) the NP is a post verb subject and in (12) is

the direct object.

(11) [A: ¿Qué tal el partido de tu equipo?]
B: Me desilusionaron los jugadores.
[A: How was your team's match?]
B: The players disappointed me.
(12) [A: Tengo que comprar dos libros de español.]
B: Yo compré los libros de español ayer.
[A: I have to buy two Spanish books.]
B: I bought the Spanish books yesterday.

• The Factorial Analysis (total)

In the *Factorial Analysis* (from now on "FA") the factors extraction method which involves analyzing the principal components, showed that 18 components explained 76.375% of total variance. **Factor 1** represented almost 10 % of the total, although it was not very informative as all the correlations were direct, with positive signs, and corresponded to ungrammatical items.

Factor 2 had 9 items in direct correlation: 12 (r=0.674), 41 (r=5), 17 (r=455), 11 (r=0.434), 2 (r=0.412), 44 (r=0,394), 37 (r=0.391) and 50 (r=0.355); and 3 in inverse correlation: 51 (r=-0.343), 5 (r=-0.372) and 7 (r=-0.486). The nouns of the direct correlations are countable plural, except (17) and (50) which are uncountable, and (37) which is countable singular with a generic reading. Two of the inverse correlations are uncountable. The plurality can be observed as being a common element to this factor.

On the other hand, **Factor 4** contained 7 items in direct correlation with singular nouns: 31 (r=0.512), 29 (r=0.468), 9 (r=0.393), 19 (r=0.379), 47 (r=0.37), 52 (r=0.347) and 8 (r=0.323). The inverse correlations, 11 (r=-0.343), 18 (r=-0.327), 40 (r=-0.345), 41 (r=-0.345) and 53 (r=-0.315) are all plural except (18), confirming the common element of this factor was the singular.

Factor 7 included 3 factors in direct correlation with singular nouns and specific interpretations: 20 (r=0.507), 5 (r=0.467) and 22 (r=0.444). There were only 2 inverse correlations, 54 (r=-0.399) and 30 (r=-0.329), that were unspecific and specific, respectively.

• The Factorial Analysis (only Japanese)

The **FA** for Japanese students showed that with fewer components, 16, a similar rate of the total variance, 75.578%, can be accounted for. Like in the FA for the total of subjects, **Factor 2** had in common the plural of the 10 items in direct correlation, 2 (r=0.571), 40 (r=0.547), 53 (r=0.510), 41 (r=0.494), 18 (r=0.465), 21 (r=0.422), 44 (r=0.393), 38 (r=0.352), 22 (r=0.344) and 23 (r=0.317). The 4 inverse correlations are singular with 3 items with uncountable nouns, 9 (r=-0.543), 8 (r=-0.443) and 47 (r=-0.420).

Factor 6 included 7 items in direct correlation most of them with a +definite +specific reference, 22 (r=0.498), 34 (r=0.453), 10 (r=0.411), 19 (r=0.400) and 36 (r=0.365), with the exception of 45 (r=0.562) and 52 (r=0.314). The inverse correlations, 15 (r=-0.461), 32 (r=-0.368) and 51 (r=-0.362), were unspecific.

■ The ***a posteriori*** **analysis** required the realization of four ANOVAs:

• ANOVA 1: Definiteness

This first analysis of variance (table 4) had a design of 2x4, where 2 were the dependent variables between groups (+definite/–definite) and 4 the proficiency levels, within group factors:

	Group	Mean	Typ. deviation	N
[+definite]	Spanish L1	3.2501	0.38500	30
	Level 2	2.2303	0.22884	30
	Level 3	2.1924	0.26672	20
	Level 4	2.2727	0.32722	11
	Total	2.5633	0.57151	91
[–definite]	Spanish L1	3.3617	0.43671	30
	Level 2	2.4786	0.41705	30
	Level 3	2.5110	0.41228	20
	Level 4	2.4740	0.49823	11
	Total	2.7763	0.59292	91

Table 4. ANOVA 1: Descriptive [+definite] [–definite]

The results showed the total means target more accuracy in the –definite context (2.77). By group, the rising progression in accuracy of Japanese students in the [+definite] context was interrupted in Level 3 (2.19). On the other hand, this level showed the highest mean between Japanese in the [–definite] context (2.51).

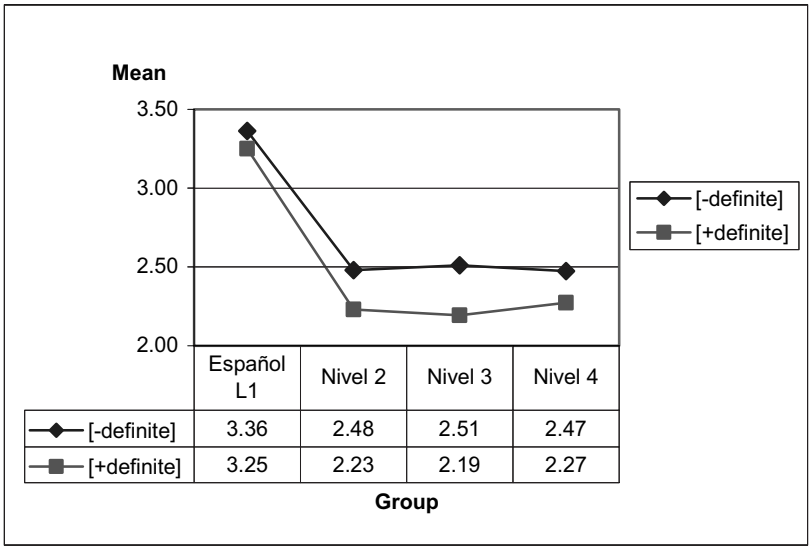

Figure 1. ANOVA 1: Comparison of means by groups

In the graph above (figure 1) it is observed how the lines are almost parallel and it is in level 3 where they diverge from each other.

The ANOVA 1 (table 5) confirmed the results in the descriptive table and the graph:

Sphericity assumed	df	F	Sig.
Definite	1	20.959	0.000
Definite groups	3	1.068	0.367

Table 5. ANOVA 1: Results using the "sphericity assumed" index

There was an effect ($p<0.001$; $F=20.959$; $df=1$) between the [+definite] and [–definite] where the indefinite was easier. However, there was no interaction between groups ($p=0.367$) as shown in the parallels on the graphic.

• ANOVA 2: Definiteness and specificity

This ANOVA had a 4 x 4 design, and the levels of proficiency were organized by the dependent variables [+definite, +specific], [+definite, –specific], [–definite, +specific] and [–definite, –specific].

	Group	Mean	Typical deviation	N
[+definite, +specific]	Spanish L1	3.4405	0.40204	30
	Level 2	2.3304	0.29020	30
	Level 3	2.2431	0.33869	20
	Level 4	2.3511	0.35160	11
	Total	2.6797	0.63744	91
[+definite, –specific]	Spanish L1	3.0333	0.60236	30
	Level 2	2.0667	0.53534	30
	Level 3	2.3167	0.69699	20
	Level 4	2.2576	0.50202	11
	Total	2.4634	0.71451	91
[–definite, –specific]	Spanish L1	3.0622	0.62916	30
	Level 2	2.3778	0.55525	30
	Level 3	2.3767	0.68749	20
	Level 4	2.1818	0.62118	11
	Total	2.5795	0.69947	91
[–definite, +specific]	Spanish L1	3.3578	0.51110	30
	Level 2	2.3667	0.54737	30
	Level 3	2.4500	0.52454	20
	Level 4	2.3485	0.52944	11
	Total	2.7095	0.69290	91

Table 6. ANOVA 2: Descriptive [±definite] [±specific]

As shown in table 6, the context [+definite, –specific] was the most difficult, with a total mean of 2.46, followed by [–definite, –specific] with 2.57, [+definite, +specific] with 2.67 and [–definite, +specific], which was the easiest, with 2.7. Level 2 showed the lowest mean for the most problematic context, 2.06, and for [–definite, –specific] it was Level 4, with 2.18.

The graphic (figure 2) shows interaction between groups with the intersections of lines.

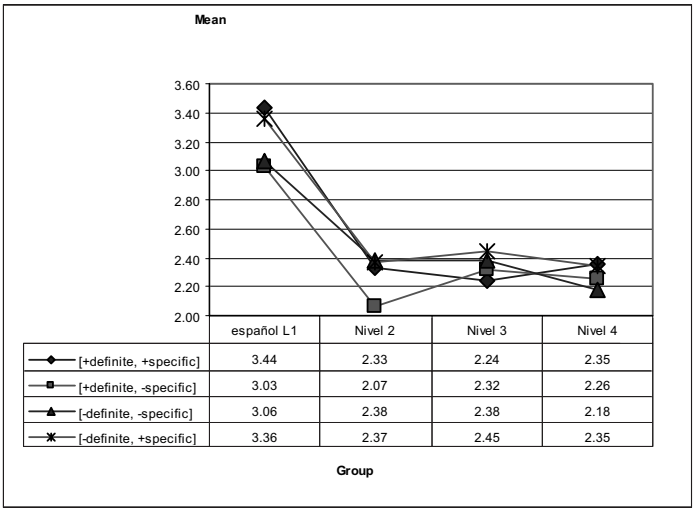

Figure 2. ANOVA 2: Comparison of groups by means

The intersections were corroborated by the result of the ANOVA in table 7:

Sphericity assumed	df	F	Sig.
[±definite] [±specific]	4	2,16	0,073
[±definite] [±specific] groups	12	2,033	0,021

Table 7. ANOVA 2: Results using the "sphericity assumed" index

The intra-group results show a significativity index bigger than 0.05, p=0.073, and therefore it cannot be considered there to be any significance. However, the "p" index between groups showed a tendency to find an effect (p=0.021): there were contexts easier for one group and more difficult for the others.

• ANOVA 3: Noun countability

The ANOVA for countability had a design 2 x 4 with [uncountable] and [countable] as the dependent variables. The following table (table 8) shows similar numbers for the total means, 2.64 for uncountable nouns and 2.62 for countable.

	Group	Mean	Typical deviation	N
[uncountable]	Spanish L1	3.2120	0.45834	30
	Level 2	2.3225	0.32583	30
	Level 3	2.4819	0.32089	20
	Level 4	2.3011	0.34098	11
	Total	2.6482	0.54658	91
[countable]	Spanish L1	3.3542	0.36865	30
	Level 2	2.2905	0.28051	30
	Level 3	2.2168	0.39486	20
	Level 4	2.3021	0.37930	11
	Total	2.6264	0.61834	91

Table 8. ANOVA 3: Descriptive [countable] [uncountable]

It can be observed that there was a bigger difference between uncountable and countable in Level 3, 2.48 and 2.21 respectively. On the other hand, Level 4 showed the same number for both contexts, as represented in the following graph (figure 3).

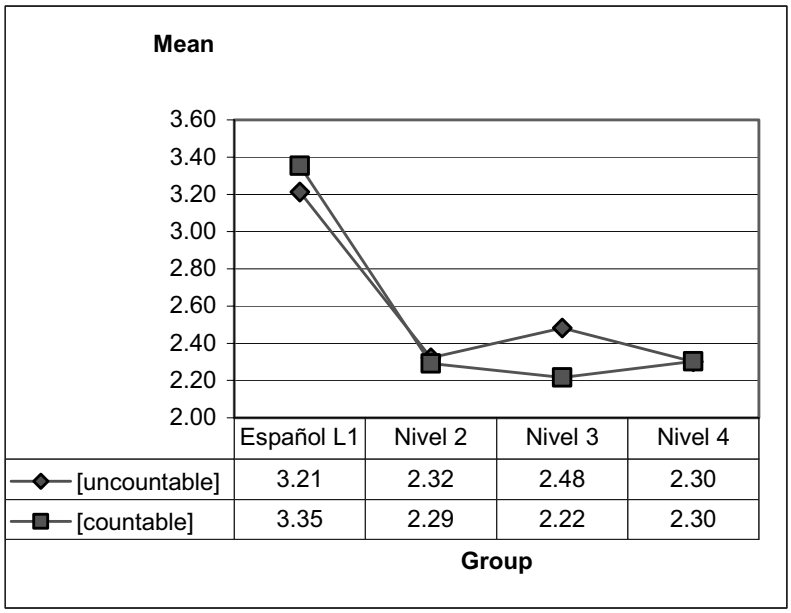

Figure 3. ANOVA 3: Comparison of groups by means

As can be seen, the Japanese, unlike the natives, showed more accuracy with countable nouns (3.35) than with uncountable nouns (3.21). The confirmation is shown in table 9.

Sphericity assumed	df	F	Sig.
Countability	1	0.708	0.402
Countability groups	3	4.131	0.009

Table 9. ANOVA 3: Results using the "sphericity assumed" index

The index p=0.402 showed that there was no effect between uncountable and countable nouns. However, it was observed a tendency to find an effect ($p<0.05$; $F=4.131$; $df=3$) as the easiest contexts differed by groups.

• ANOVA 4: Noun number

[Singular] and [plural] are related to noun countability and were the dependent variables of this last ANOVA with a 2 x 4 design.

	Group	Mean	Typical deviation	N
[singular]	Spanish L1	3.3136	0.37801	30
	Level 2	2.1389	0.31520	30
	Level 3	2.1413	0.42542	20
	Level 4	2.2222	0.31131	11
	Total	2.5368	0.65407	91
[plural]	Spanish L1	3.3740	0.40206	30
	Level 2	2.4005	0.36204	30
	Level 3	2.1724	0.48237	20
	Level 4	2.4091	0.57589	11
	Total	2.6723	0.65805	91

Table 10. ANOVA 4: Descriptive [singular] [plural]

The descriptive (table 10) showed more accuracy for the plural (2.67) than the singular (2.53). This difference was especially noticeable in Level 2 and less in Level 3, where the numbers for singular and plural were very close, 2.14 and 2.17 respectively. The means can be seen represented graphically in figure 4.

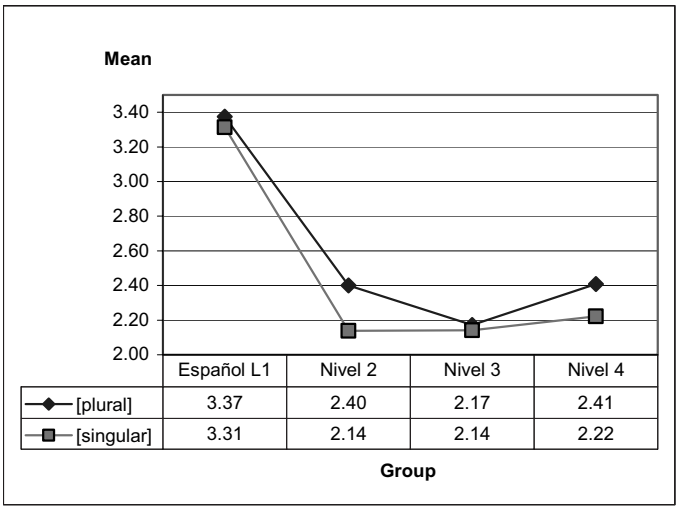

Figure 4. ANOVA 4: Comparison of groups by means

Level 2 and Level 4 showed similar numbers, the last one with more accuracy, but the progression was interrupted in Level 3 with the same mean as Level 2 for singular (2.14) and a low mean also for plural in this level, although there was no intersection.

Sphericity assumed	df	F	Sig.
Number	1	6.717	0.011
Number group	3	1.425	0.241

Table 11. ANOVA 4: Results using the "sphericity assumed" index

Table 11 shows an effect with "p" lower than 0.05 (0.011) that means that the plural was easier than the singular. Between groups the index was not significant with the plural easier for every group.

4. Discussion

In a previous study (Barrera 2008) the non-generic uses of the Spanish definite article were analyzed following the same methodology and one of the conclusions was that there are different factors that take part in the grammaticality judgments, not only the uses described by Leonetti 1999. In this paper the roles of definiteness, specificity and countability in this kind of task were analysed.

From the exploratory study, that included the Pearson Correlation Analysis and the Factorial Analysis, it was found that the base of the correlation was the noun, for example uncountable for correlation (14)-(47) (r=0.444); or Factor 2 that had in common the number of the noun, in this case plural. Regarding the reference of the NP the Factor 7 had an unspecific character.

However, apart from these concepts that the theoretical grammar and the theories of acquisition consider fundamental, there were more factors that influence the recognition of grammaticality like formal similarity [correlation (21)-(16) (r=0.44) with a similar NP in subject position], same length of the item, syntax [correlation (41)-(37) (r=0.415) with relatives] and semantics [correlation (30)-(41) (r=0.466) with verbs meaning "buy" and "rent"].

The *a posteriori* study found the indefinite article was easier than the definite to comprehend, something that corroborated the previous literature. The context [±definite] [±specific] showed an interaction between groups but not between contexts. The unspecific context was the most difficult even for natives.

Lastly, in this study it was studied the comprehension of both natives and Japanese students, but production (written and oral) should be also analyzed as the data differs depending on the task (Parrish 1987, Liceras 1993, Guijarro-Fuentes & Clibbens 2002).

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APPENDIX

Por favor, di si las siguientes expresiones te suenan bien o no en español. Si te suena bien, usa la cara sonriente de la izquierda: ☺. Si te suena mal, usa la cara triste de la derecha: ☹. Puedes usar caras intermedias (☺ 😐 ☹) para las expresiones de las que no estés seguro.		
1	*[A: Hoy tuve un examen sorpresa]* *B: ¿Y qué tal hiciste examen?*	☺ ☺ 😐 ☹ ☹
2	*[A: Aquí te traigo todos los ingredientes que me pediste]* *B: Muchas gracias. Perdona, ¿puedes pasarme la botella de vino?*	☺ ☺ 😐 ☹ ☹
3	*[A: ¿Qué te parece el nuevo presidente?]* *B: Me gusta político con decisión.*	☺ ☺ 😐 ☹ ☹
4	*[A: ¿Qué es lo peor del verano en Japón?]* *B: La humedad.*	☺ ☺ 😐 ☹ ☹
5	*[A: ¿Qué está haciendo Luis en su casa? ¿Por qué no sale?]* *B: Está ahorrando el dinero. Este mes tiene poco.*	☺ ☺ 😐 ☹ ☹
6	*[A: ¿Cuál de estos dos coches te gusta más?]* *B: Me gusta el coche de la derecha.*	☺ ☺ 😐 ☹ ☹
7	*[A: No sabía que ibas a salir hoy.]* *B: Sí, me ha llamado Paco. ¿Puedes darme el dinero?*	☺ ☺ 😐 ☹ ☹
8	*[A: Necesito dinero para comprar un libro. Cuesta 5.700 yenes.]* *B: Ahora te doy el dinero.*	☺ ☺ 😐 ☹ ☹
9	*[A: Aquí te traigo todos los ingredientes que necesitabas]* *B: Llegas a tiempo, ¿me pasas sal?*	☺ ☺ 😐 ☹ ☹
10	*¿Te acuerdas de las torres gemelas de Nueva York?*	☺ ☺ 😐 ☹ ☹
11	*[A: ¿Qué tal el partido de tu equipo?]* *B: Me desilusionaron los jugadores.*	☺ ☺ 😐 ☹ ☹
12	*[A: Tengo que comprar dos libros de español.]* *B: Yo compré los libros de español ayer.*	☺ ☺ 😐 ☹ ☹
13	*[A: Hoy juega Francia contra Italia.]* *B: Sí, yo animaré a unos italianos.*	☺ ☺ 😐 ☹ ☹
14	*[A: ¿Qué haces en la piscina?]* *B: Estoy probando agua.*	☺ ☺ 😐 ☹ ☹
15	*[A: ¿Qué podemos hacer para reducir la contaminación?]* *B: Pues, por ejemplo, usar autobús y no coche.*	☺ ☺ 😐 ☹ ☹
16	*[A: No tengo nada que ponerme para salir esta noche…]* *B: Te he planchado camisa negra.*	☺ ☺ 😐 ☹ ☹
17	*Daré el dinero que gane en este concurso a mi madre.*	☺ ☺ 😐 ☹ ☹
18	*[A: Hay muchas clases de vino. No sé cuál comprar…]* *B: Compra vino que se llama "Potan". Está buenísimo.*	☺ ☺ 😐 ☹ ☹
19	*[A: Llevamos media hora en esta tienda ¿Nos vamos ya?]* *B: Espera, quiero hablar con la dueña; es mi vecina.*	☺ ☺ 😐 ☹ ☹
20	*Aunque soy de París todavía no he subido a torre Eiffel.*	☺ ☺ 😐 ☹ ☹
21	*[A: ¿Han decidido ya el nuevo entrenador?]* *B: No, estamos buscando persona seria.*	☺ ☺ 😐 ☹ ☹

22	*[A: Aquí he puesto todos los ingredientes que me encargaste]* *B: Muchas gracias. Por cierto ¿Puedes pasarme la pimienta?*	☺ ☺ 😐 ☹ ☹
23	*[A: Últimamente hay muchos coches fabricados en Corea]* *B: Yo prefiero coches que se hacen en Japón.*	☺ ☺ 😐 ☹ ☹
24	*[A: ¿Por qué no viene Juan? ¿Qué está haciendo?]* *B: Está comprando cerveza.*	☺ ☺ 😐 ☹ ☹
25	*[A: Con este frío no hay nadie en las calles.]* *B: Sí, al venir solo vimos los niños jugando fuera. ¿Quiénes serán?*	☺ ☺ 😐 ☹ ☹
26	*[A: Últimamente no veo a Luis]* *B: Al parecer sale con una chica, pero todavía no la he visto.*	☺ ☺ 😐 ☹ ☹
27	*[A: ¿Cuál de los quieres?]* *B: Me quedo con bolígrafo rojo.*	☺ ☺ 😐 ☹ ☹
28	*Utilizarán vino que sobre para hacer vinagre.*	☺ ☺ 😐 ☹ ☹
29	*[A: ¿Has visto las noticias?]* *B: Sí, todavía se busca el asesino del señor Escalante. No se sabe quién es.*	☺ ☺ 😐 ☹ ☹
30	*[A: "Compramos cosas usadas". Dígame]* *B: Me gustaría saber cuánto dinero me dan por la guitarra Fender Stratocaster.*	☺ ☺ 😐 ☹ ☹
31	*[A: Me han regalado este ordenador con conexión a Internet]* *B: ¿Me dejas usar el ordenador para ver mi correo?*	☺ ☺ 😐 ☹ ☹
32	*[A: ¿Qué desea?]* *B: Unos pantalones que no tengan bolsillos.*	☺ ☺ 😐 ☹ ☹
33	*[A: Saca ya las patatas. Se van a quemar]* *B: Pásame plato, por favor.*	☺ ☺ 😐 ☹ ☹
34	*[A: ¿Vais a viajar este fin de semana?]* *B: Sí, ya tenemos los billetes.*	☺ ☺ 😐 ☹ ☹
35	*[A: ¿Por qué no te gusta Irlanda?]* *B: No soporto lluvia.*	☺ ☺ 😐 ☹ ☹
36	*Para hacer esta tarta es necesario mover la harina constantemente.*	☺ ☺ 😐 ☹ ☹
37	*[A: ¿Qué vas a ir a fotografiar la próxima vez?]* *B: Quiero fotografiar una mosca que sólo vive en Madagascar.*	☺ ☺ 😐 ☹ ☹
38	*[A: Este ordenador va muy lento].* *B: Sí, tengo que cambiarle memoria.*	☺ ☺ 😐 ☹ ☹
39	*[A: ¿A dónde te gustaría viajar este verano?]* *B: Ya solo me queda visitar la luna…*	☺ ☺ 😐 ☹ ☹
40	*Perdona, ¿me das llaves? Están muy lejos para mí.*	☺ ☺ 😐 ☹ ☹
41	*[A: ¿Con cuáles te quedas?]* *B: Voy a comprarme los pantalones que valen 3.000 yenes.*	☺ ☺ 😐 ☹ ☹
42	*[A: ¿Qué ha comprado Ana para la fiesta?]* *B: Dice que ha comprado vino pero yo no lo he visto.*	☺ ☺ 😐 ☹ ☹
43	*Me gustaría visitar pirámides de Egipto.*	☺ ☺ 😐 ☹ ☹
44	*[A: ¿Qué hiciste en Londres?]* *B: Estuve enseñando español a los ingleses.*	☺ ☺ 😐 ☹ ☹

45	*[A: ¿Me ha llamado alguien?]* *B: Llamó el amigo tuyo hace una hora, pero no sé cómo se llama.*	☺ ☺ 😐 ☹ ☹
46	*[A: ¿Por qué es tan importante este examen?]* *B: Porque así elegirán a los mejores alumnos del colegio.*	☺ ☺ 😐 ☹ ☹
47	*[A: Salgo a comprar harina]* *B: Asegúrate de que harina sea para freír.*	☺ ☺ 😐 ☹ ☹
48	*[A: ¿Qué se puso Roberto para la fiesta?]* *B: Dicen que se puso unos zapatos amarillos, pero no los he visto.*	☺ ☺ 😐 ☹ ☹
49	*[A: Otra vez ha habido un accidente en una obra]* *B: No hacen nada para proteger al trabajador.*	☺ ☺ 😐 ☹ ☹
50	*[A: Yo le regalé una camisa pero ya no le regalo más ropa]* *B: Yo tampoco: nunca se pone la ropa que le regalan.*	☺ ☺ 😐 ☹ ☹
51	*[A: Buenos días. ¿Puedo ayudarlo?]* *B: Buenos días. Estoy buscando los relojes que sean de bolsillo.*	☺ ☺ 😐 ☹ ☹
52	*[A: ¿Qué buscas?]* *B: Estoy buscando una camiseta que vi por Internet.*	☺ ☺ 😐 ☹ ☹
53	*[A: Me he dejado mis documentos en casa]* *B: No te preocupes yo te llevo documentos enseguida.*	☺ ☺ 😐 ☹ ☹
54	*[A: Este cuadro no tiene firma.]* *B: Me gustaría conocer a un autor de este cuadro.*	☺ ☺ 😐 ☹ ☹