UC Riverside
Issues in Applied Linguistics

Title
Huebner's (1983) Semantic Wheel for NP Reference and L3 Acquisition

Permalink
https://escholarship.org/uc/item/1js7g1zw

Journal
Issues in Applied Linguistics, 10(1)

ISSN
1050-4273

Author
Kambou, Moses K.

Publication Date
1999-07-30

DOI
10.5070/L4101005011

Peer reviewed

eScholarship.org Powered by the California Digital Library
University of California

Huebner's (1983) Semantic Wheel for NP Reference and L3 Acquisition[1]

Moses K. Kambou
Université de Ouagadougou

In the literature on the acquisition of English articles based on Huebner's (1983) model, Thomas (1989) suggested that data on the use of articles in the generic context is critical in deciding whether L2 learners associate the definite article with the feature Specific Referent, [+SR], or Assumed Known to the Hearer, [+HK], as suggested by earlier studies (Huebner, 1983; Master, 1987; Thomas, 1989). This paper discusses the results of a cross-sectional study, undertaken in 1996, which examined the phenomenon of referentiality in the acquisition of English as a foreign language by francophone English major college students in Burkina Faso. The research focused on the acquisition of the article system. The study involved 177 undergraduate and graduate students at the University of Ouagadougou with at least 7 years of English instruction. A cloze test of 107 items was used to collect the data. Demographic information was also collected using a 16-item questionnaire. The result does not give support to Thomas' (1989) view that L2 learners associate the definite article with [+HK] context since the L3 leaners in this study associate the zero article with [+HK] feature.

Although studies using Huebner's (1983) proposed features of referentiality: ([± Specific Referent i.e. ± SR] and [± Assumed Known to the Hearer, i.e. ± HK]), which are used in this study, have examined the acquisition of the article system in L1 and L2, no study using this framework has examined the acquisition of L3[2]. Furthermore, in one study (Thomas, 1989), the author suggested that there are conflicting results in this framework regarding the referential feature (Specific Referent, [+SR] or Assumed Known to the Hearer, [+HK]) with which learners associate the definite article in English. According to her, "however, we lack the critical evidence, namely that which concerns the use of articles in generic contexts" (p. 352). The present study provides data on article usage in the generic context.

The official language of Burkina Faso is French, but English has been taught in secondary schools since the colonial era as a foreign language, and most secondary school students speak at least one African language and French before learning English as a third language (L3).

Table 1 shows a description of the distribution of the articles in English (L3), French (L2) and three African languages (Mooré, Fulfuldé/Pulaar, Jula) following Huebner's (1983) semantic categories.

Issues in Applied Linguistics
ISSN 1050-4273
© 1999, Regents of the University of California
Vol. 10 No. 1, 57-73

	Generic [-SR +HK]	Referential Definite [+SR +HK]	Referentical Indefinite [+SR -HK]	Nonreferential [-SR -HK]
English	the, a, ∅	the	a, ∅	a, ∅
French	le, un	le, les	un, du, des	un, du, des, ∅
Mooré	∅	wã	∅	∅
Jula	∅	ni	∅	∅
Fulfuldé	∅	nominal suffix	∅	∅

Table 1: Article usage in the four semantic categories

Table 2 shows the article and noun type combination in English, French, and Mooré (used as a representative of the African languages). This table shows some differences in the three languages that we will discuss later.

	Article used with singular noun	Article used with plural noun
English	a, the	∅, the
French	le, un, ∅	les; des
Mooré	∅, wã	∅, wã

Table 2: Article and Noun Combination in English, French, and Mooré.

The noun phrase (NP) structure of the different languages is shown in a tree diagram (Figure 1), where Mooré structure is different from those of French and English with regard to word order.

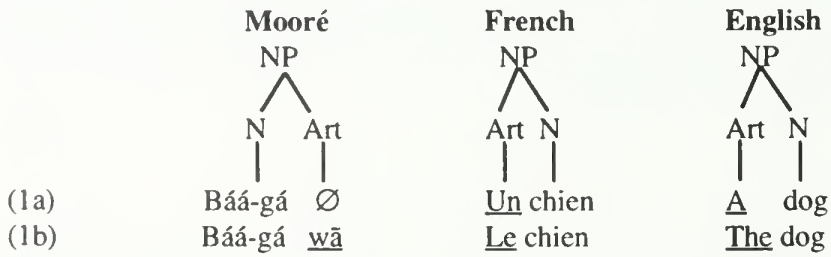


Figure 1

PREVIOUS STUDIES

L2 Acquisition Studies

There is little research on the acquisition of the article system in L2 and/or foreign language (FL) situations. We can cite some works devoted to the acquisition of English (Hakuta, 1976; Master, 1987; Mizuno, 1986) and French (Haden, 1973). There are some contrastive studies as well as pedagogically oriented studies. However, few L2 studies (e.g. Master, 1987) were based on Huebner's (1983) framework.

Huebner (1983; 1985) present longitudinal studies with a single subject, with a focus on variation in interlanguage syntax, and not on the acquisition of the definite article. The data on articles in these studies were analyzed using semantic types that rely on Bickerton's (1981) semantic wheel for noun phrase reference. The wheel has four contexts for noun phrase (NP) references and these contexts determine the function of the article that is used with the noun. In the 1983 study, Huebner first proposed the categories used in the present project: context one, ([-SR], [+HK])—generic nouns; context two, ([+SR], [+HK])— referential definite nouns; context three, ([+SR], [-HK])—referential indefinite nouns; context four, ([-SR], [-HK)]—nonreferential nouns. The 1985 data suggest that the subjects in the study associated the indefinite article 'a' with singular count referential noun phrases and not with nonreferential noun phrases.

Unlike Huebner (1983, 1985), Thomas (1989) conducted a cross-sectional study with a different data collection method. In this study, data were gathered using an oral picture description task, with the analysis using Huebner's (1983) semantic types. The thirty adult subjects in this research represent native speakers of nine languages (Greek, Spanish, Italian, Japanese, Chinese, Korean, Finnish, German, French.), some with article systems and others without article systems. A comparison of L1 and L2 data was done to see if there was similarity or not in L1 and L2 acquisition of articles. The results showed that all subjects use 'the' in referential indefinite contexts at significantly higher rates than in non-referential contexts. The study thus concludes that both L1 and L2 learners may share an initial hypothesis associating 'the' with referential nouns.

Tarone and Parrish (1995) differs from the previous studies above because it is a reanalysis of Tarone's (1985) data. This study focused on the use of the articles in English as a Second Language (ESL). Subjects in this study were 20 ESL students (10 native speakers of Japanese and 10 native speakers of Arabic) at the University of Michigan. Three tasks were used to collect data in the study: (a) written "grammaticality" judgment containing five sentences with missing articles; (b) an interview with a native speaker; (c) an oral narration task. The hypothesis is that learners would supply articles and other grammatical forms most accurately on the grammatical test and least accurately on the narrative, the interview producing intermediate levels of accuracy. The data were analyzed using Huebner's (1983) semantic wheel of NP reference. The results showed that different tasks elicited

different types of NPs to different degrees. For example, the greatest difference in learner accuracy in the articles used is with type two NPs ([+SR][+HK], that is, specific referent and assumed known to hearer) which did decrease across the three tasks used. Statistical significance was obtained between the grammar task and the two oral tasks but the difference between the two oral tasks was not statistically significant.

THE STUDY

The purpose of this study was to investigate how learners in a multilingual context acquire English as a foreign language and especially to investigate whether French bilinguals learning English as a foreign language (L3) associate the definite article with [+HK] or [+SR] feature values in the generic context ([-HK +SR]). In order to achieve this goal, I decided to use data on learners' article use in different contexts: generic, referential definite, referential indefinite, and nonreferential.

RESEARCH DESIGN

Settings

This research project involved Burkinabè English major college students learning English as a third language (L3) in an instructional setting. The design was a cross-sectional study of a sample of students, the majority of whom hoped to become teachers of English at either the high school or university level. The study involved volunteer students from the four levels of proficiency (DEUG1, DEUG2, Licence, Maîtrise)[3] in the English Department at the University of Ouagadougou. A group of 11 graduate students, all of them native speakers of American English, was used to pilot the cloze-type text for data collection. The native speakers were all graduate students at the University of Illinois at Urbana-Champaign at the time of the pilot study.

Subjects

The Burkinabè subjects for this study were 177 college English major students who formed four groups, representing the four levels of proficiency in the English Department. Group one (DEUG 1) was composed of 50 students in their first year; group two (DEUG 2) was made up of 50 students in their second year; group three (Licence) comprised of 50 students in their third year; and group four (Maîtrise) consisted of 27 students in their fourth year. Out of the 177 subjects, 48 (27.12%) reported having repeated at least one class (DEUG 1, DEUG 2, Licence, Maîtrise). About 19.9% of the subjects reported speaking only one African language; 43.2% reported speaking two African languages; 26.1% spoke three African languages; 9.7% spoke four African languages. For the majority of the subjects (80.1%), English was a fourth language, because they reported speaking at least two African languages.

	DEUG 1	DEUG 1	Licence	Maîtrise
Mean age	22	23	23.9	24.4
Age range	19-25	20-30	20-34	21-27
Male	31	36	17	14
Female	19	14	33	13

Table 3: Demographic Information about the Subjects by Academic Level[5]

Table 3 gives information about the age and gender of students in each of the four academic levels.

The majority of the subjects spoke a Voltaic language (e.g., Mooré), a West Atlantic language (e.g., Fulfuldé) or a Manden language (e.g., Jula) as a native language (L1) and French as a second language (L2).

The total classroom exposure to English[4] was 1,220 hours for the DEUG 1, the DEUG 2 had a total exposure of 1,782.5 hours, while the Licence group had 2,332.5 hours of exposure, and the Maîtrise group a total exposure of 2,470 hours. Apart from classroom exposure to English, subjects also reported listening to English news broadcasts on some radio stations and the national television (TNB) in Ouagadougou, as well as international TV broadcasts such as CBS and ABC at the American Cultural Center. On the questionnaire used to obtain sociolinguistic information, 80.60% reported listening to English news broadcasts.

There are two main reasons for choosing college students for this study: (a) they are the future teachers of English; (b) they constitute homogeneous groups with regard to exposure to English (based on the number of credit hours) at the university, which is not the case with high school students who may or may not have teachers all year round due to lack of English teachers.

Data collection.

A week before the test was administered, I met with potential subjects in each class for about 10 minutes to explain to them the purpose of the study, and encouraged them to volunteer as participants. All the participants volunteered on their own after the meeting. The data collection was carried out in one session. The subjects first filled out the questionnaire and then did the cloze test; both tasks lasted one hour.

In order to reduce nervousness, the volunteer subjects were told on the day of the test not to be concerned about grades, and that they were participating in a research project and should do the test to the best of their abilities.

The cloze-type test was used to test the subjects' knowledge of English article usage. The test contained about 728 words and was a blend of texts from four different sources: Kharma (1981), Emecheta (1979), National Geographic

(July, 1990), and Culturgram (1996). Kharma (1981) is a published study entitled "Analysis of the errors committed by Arab University students in the use of the English definite/indefinite articles", and the test for this study was replicated in the present research as a cloze-type test. Emecheta (1979) is a novel entitled *The Joys of Motherhood*, written by this African author; and Culturgram (1996) is a cultural publication about Benin (West Africa) by Brigham Young University, USA. The text was divided into five sections corresponding to the text sources: sections I and II from Kharma (1981), section III from *Emecheta* (1979), section IV from *National Geographic* (July, 1990), and section V from Culturegram (1996). Initially, the cloze test contained 107 items, but the final data analyzed contained 102 items. Four were eliminated, because they were a combination of an article and an adjective instead of a noun; the fifth one was a situation where the native speakers' choice of article was split.

In the cloze-test, the articles 'a/an, the, ∅' were deleted before nouns, and subjects were asked to fill in the slots in the text with the appropriate article. The text was divided into five sections with titles according to the source or theme. Subjects were instructed that if no article was required, they should put a '∅' mark in the space provided. This was a means for controling for non-response and zero article. Two written examples were given at the beginning of the text, and the instructions were read to the subjects although they were also written at the beginning of the text for them to read at their own pace. The subjects were given some time to read over the text and to ask any questions they had before starting (A copy of the cloze-test is provided in the appendix).

Questionnaire.

A 16-item questionnaire was also used to gather sociolinguistic information about the subjects. Subjects filled out this questionnaire the day they took the test and were informed that the questionnaire was being used for research purposes.

Data analysis.

The frequency of correct article use was computed and the articles were classified into four semantic categories for discussion. The frequency of expected correct article type uses was compared with the observed article types used by subjects in order to determine whether they under-used (fewer than expected) or over-used (more than expected) some article types. The response (dependent) variable was the subjects' overall scores on the test, and the explanatory (independent) variable was the level of proficiency or academic level. The total score for each subject ranged from 0 to 102; items 10, 61, 72, and 84 were eliminated from the analysis for various reasons: ∅ article + adjective (# 10, 61, 72) and ∅ article + proper noun (# 84), instead of ∅ article + noun. The context of interest for this study was 'article + noun'. Item #100 was eliminated, because there was no majority native speaker article usage for either the indefinite (5 out of 11), definite (5 out of 11), or zero (1 out of 11) article during the pilot study.

Determination of correct response.

The text was piloted with 11 native speakers of American English with at least an undergraduate degree. This piloting allowed me to see which usages most native speakers agreed upon and which they did not. From the native speakers' performance, the researcher considered the items where the majority of the 11 native speakers agreed as the correct article usage. On the 102 items, the native speakers unanimously agreed on 71 and for the remaining 31, I considered the majority usage (i.e. where at least six agreed) to be the correct one.

Classification of the articles into semantic categories.

The deleted articles were classified according to the four contexts of occurrence defined by Huebner (1983): Context one (Generic); context two (Referential definite); context three (Referential indefinite); context four (Nonreferential). This classification was done separately by the author and a graduate student in linguistics and the results were compared for reliability. The reliability rating differed depending on the semantic category, but on the whole there was a high agreement (85%) between the two classifications; the generic category had the lowest disagreement. The distribution of the 102 articles was as follows: 28 zero articles, 25 indefinite articles, and 49 definite articles. The breakdown of the articles by context gives the following distribution: (1) Generics 31 items (a = 6; ∅ = 14; the = 11); (2) Referential definite 38 items (the = 38); (3) Referential indefinite 26 items (a = 16; ∅ = 10); (4) Nonreferential 7 items (a = 3; ∅ = 4).

The analysis of the data was based on the classification of the articles into categories below:

1. Generic: [-SR +HK] No specific referents assumed known to the hearer
   - ∅: 1, 11, 12, 16, 17, 18, 25, 31, 32, 35, 53, 71, 78, 79.
   - a: 20, 26, 38, 40, 47, 86.
   - the: 37, 95, 96, 97, 101, 102, 103, 104, 105, 106, 107.

2. Referential definite: [+SR +HK] Specific referents assumed known to the hearer
   - the: 3, 9, 13, 14, 19, 22, 23, 24, 33, 34, 45, 48, 49, 50, 51, 52, 54, 55, 58, 59, 60, 62, 63, 66, 67, 69, 73, 74, 75, 76, 80, 81, 82, 83, 89, 90, 92, 94.

3. Referential indefinite: [+SR - HK] Specific referents assumed not known to the hearer
   - ∅: 2, 4, 629, 30, 42, 56, 70, 87, 98.
   - a: 7, 8, 15, 41, 43, 44, 46, 57, 64, 65, 77, 85, 88, 91, 93, 99.

4. Non-referential: [-SR -HK] No specific referents assumed not known to the hearer

∅: 21, 27, 39, 68.
a: 5, 28, 36.

Scoring the test: missing data.

The test scores were coded as right (1), wrong (0) or missing (.). The missing data, coded (.) in the data base were analyzed in three ways to determine the effect (if any) of patterns of omits: (a) missing data were considered 'missing' when no article was supplied for the item (i.e., the blank was not filled with any of the three articles: a, the, ∅); (b) missing data were considered 'wrong,' coded (0) in the dataset although no article was supplied (i.e. the blank was not filled with any of the three articles: a, the ∅), because it was assumed that if an article were supplied it would be the wrong one; (c) missing data were considered 'not reached' (incomplete because did not get that far). In this last case, all missing or not supplied article data which were not between responses (i.e., which were at the end of the test) were considered missing and interpreted as 'not reached.' Examples are given using the text below:

Michael Faraday was one of those remarkable men who began $_{(1)}$..... life in $_{(2)}$...∅.. very modest circumstances and yet reached $_{(3)}$...**the**.... top of their profession through $_{(4)}$..... determination and $_{(5)}$...**a**... certain amount of $_{(6)}$..... good luck. Although he began his career as $_{(7)}$...**a**.... poorly educated bookbinder, he became internationally known as $_{(8)}$....**a**..... scientist before he reached $_{(9)}$..... age of thirty. He devoted $_{(10)}$..... most of his life to $_{(11)}$.....∅... experiments with $_{(12)}$....∅.. electricity. He was $_{(13)}$..... man who invented $_{(14)}$..... first dynamo as well as $_{(15)}$..... type of transformer.

In the above text, 'missing' is any slot without one of the three articles (a, the, ∅) as in 1, 4, 6, 9, 10, 13, 14, 15. These missing data were analyzed in the three ways stated above due to the issue of missing data interpretation in the literature. Since no articles were supplied in these slots, the examples above would have been considered 'missing' in one dataset and 'wrong' in a second dataset. However, in a third dataset where 'missing' was considered 'not reached,' only items 13 through 15 above would have been considered 'not reached' since the subjects did not get that far. 'Not reached' is a different design than 'missing.'

This way of treating missing data was adopted in order to determine whether it was an issue in this study, following Hudson's (1993) discussion of missing data in his article "Nothing does not equal zero." He argues that the multidimensional model of developmental sequence was inaccurate due to faulty analyses and especially the interpretation of missing data. In the present study the missing data were analyzed in three ways to determine if time to finish the test was a problem for the students, since it was natural to wonder if one hour was sufficient time for students at these levels of proficiency. If the time was insufficient, one would expect to see tests with the last part not done, as in the sample text above. However, the reliabil-

Test Type	Percent correct	M	SD	Range	k_a
Cloze	74.3	75.79	9.49	42-94	102
i. Generic	65.0	20.14	4.48	4-30	31
∅	73.4	10.28	2.50	3-13	14
a	55.2	3.31	1.39	0-6	6
the	59.5	6.55	2.83	0-11	11
ii. Nonreferential	75.3	5.27	.92	3-7	7
∅	65.3	2.54	.83	0-4	4
a	91.0	2.73	.53	0-3	3
iii. Ref. Definite	79.9	30.35	4.70	0-38	38
iv. Ref. Indefinite	77.1	20.04	2.46	12.24	26
∅	62.3	6.23	1.57	2-10	10
a	86.3	13.81	1.50	10-16	16

Note: Ref. stands for referential. The number of valid cases in all these analyses was 177 (i.e. N=177).¶

[a] Maximum possible points that can be obtained on the test.

Table 4: Total Scores for the Whole Group

ity estimates and the valid cases of the different datasets (Kambou, 1997) showed that this was not the case; we can therefore conclude that the subjects had sufficient time.

RESULTS AND DISCUSSION

Table 4 presents the general performance of the subjects on the test. It also presents the distribution of scores, means, variability, range, and the rate of accuracy (percent correct).

The rates of correct article usage (percent correct) presented in Table 4 were calculated using the formula: mean score/number of items x 100. Table 5 is a distribution of article usage in the four semantic categories and their subcategories in the test. Table 4 shows that the general rate of accuracy for the subjects on the test was 74% while both tables show that the rates by context/semantic category were (a) 65% for generic, (b) 75% for nonreferential, (c) 80% for referential definite, and (d) 77% for referential indefinite. These results show that the generic

Semantic Category	Subjects' Response				
	∅	a	the	Missing	Total
GENERIC	2,548 (46%)	932 (17%)	1,891 (34%)	116 (2%)	5,487
Generic_∅	**1,820 (73%)***	133 (5%)	456 (18%)	69 (3%)	2,478
Generic_a	183 (17%)	**585 (55%)***	276 (26%)	18 (2%)	1,062
Generic_the	545 (28%)	214 (11%)	**1,259 (60%)***	29 (1%)	1,947
REF. DEFINITE	618 (9%)	669 (10%)	5,371 (80%)	68 (1%)	6,726
Ref. definite_the	618 (9%)	669 (10%)	**5,371 (80%)***	68 (1%)	6,726
REF. INDEFINITE	1,208 (26%)	2,957 (64%)	374 (8%)	63 (1%)	4,602
Ref. indefinite_∅	**1, 102 (62%)***	512 (29%)	115 (6%)	41 (2%)	1,770
Ref. indefinite_a	106 (3%)	**2,445 (86%)***	259 (9%)	22 (1%)	2,832
NONREFERENTIAL	488 (39%)	703 (56%)	18 (1%)	30 (2%)	1,239
Nonreferential_∅	**450 (64%)***	220 (31%)	14 (2%)	24 (3%)	708
Nonreferential_a	38 (7%)	**483 (91%)***	4 (%)	6 (1%)	531
Total	4,862 (27%)	5,261 (29%)	7,654 (42%)	277 (2%)	18,054

Note: The vertical total refers to the number of items in each subcategory multiplied by the number of subjects (N=177), while the horizontal total is the sum of article types used or omitted by all subjects in each subcategory. Generic = [-SR +HK]; Ref. Def. = [+SR +HK]; Ref. Indef. = [+SR -HK]; Nonref. = [-SR -HK].

* The correct article in that context.

Table 5: Summary Statisctics
Total Frequency Distribution and Raw Percentages of Article Usage

context was the most difficult and especially the use of the generic indefinite. It could be suggested that the fact that the subjects do not have a generic article in this context in their L1, and that this use is also rare in French, the L2 (cf Table 1), could be the reason why they had such problems. On the other hand, the rate of accuracy with the zero article could be interpreted as either due to their L1, which uses only this article in the generic context, or as a mastery of this usage in English, since French hardly uses the zero article for the generic sense. An exception is made in the case of the ritual ceremony of marriage when the authority declares the couple mari et femme, 'husband' and 'wife.' If we consider this use to be due to L1 we then have a case of positive transfer, and if it is due to their mastery of English we have a case of good control of the language. This is plausible because the subjects have had at least seven years of consistent classroom exposure to English. The same argument could be put forward with regard to the use of the generic 'the' and in this case the positive transfer would be due to French.

Semantic Category	Subjects' Response				
	∅	a	the	Missing	Total
DEUG1					
Generic_∅	**415 (59%)**[a]	65 (9%)	183 (26%)	37 (5%)	700
Generic_a	51 (17%)	**156 (52%)**[a]	84 (28%)	9 (3%)	300
Generic_the	172 (31%)	83 (15%)	**274 (50%)**[a]	21 (4%)	550
DEUG2					
Generic_∅	**541 (77%)**[a]	22 (3%)	125 (18%)	12 (2%)	700
Generic_a	56 (19%)	**158 (53%)**[a]	83 (28%)	3 (1%)	300
Generic_the	144 (26%)	48 (9%)	**355 (65%)**[a]	3 (1%)	550
Licence					
Generic_∅	**558 (80%)**[a]	33 (5%)	92 (13%)	17 (2%)	700
Generic_a	58 (19%)	**165 (55%)**[a]	71 (24%)	6 (4%)	300
Generic_the	166 (30%)	57 (10%)	**324 (59%)**[a]	3 (1%)	550
Maîtrise					
Generic_∅	**306 (81%)**[a]	13 (3%)	56 (5%)	3 (1%)	378
Generic_a	18 (11%)	**106 (65%)**[a]	38 (23%)	-	162
Generic_the	63 (21%)	26 (9%)	**206 (69%)**[a]	2 (1%)	297

Note: The total refers to the number of items in each subcategory multiplied by the number of subjects in each academic level (n=50 for DEUG1, DEUG2, and Licence, and 27 for Maîtrise).
[a] The correct article in that context.

Table 6: Summary Statistics
Distribution of Articles in the Generic Context by Academic Level

Comparing the rate of correct article usage in each of the four contexts in Table 4, the result suggests that the generic context (65% rate of accuracy) was the most difficult and the referential definite (80% rate of accuracy) the least difficult. The use of the different articles in all the subcategories (Table 5) suggests that there was L1 and L2 transfer or overgeneralization of L3 article usage.

In Table 5 the final (rightmost) column (vertical) shows that the expected correct article usage in the generic context for the all the subjects (177) was 1,062 (i.e., 177 x 6 items) indefinite articles; 2,478 (i.e., 177 x 14 items) zero articles; and 1,947 (i.e., 177 x 11 items) definite articles. For the referential definite context, 6,726 (i.e., 177 x 38 items) definite articles were expected; while for the

referential context, 2,832 (177 x 16 items) indefinite articles and 1,770 (i.e., 177 x 10 items) zero articles were expected; whereas for the nonreferential we expected 531 (177 x 3 items) indefinites articles and 708 (177 x 4 items) zero articles. On the whole, therefore, 4,425 (177 x 25 items) indefinite articles, 8,673 (177 x 49 items) definite articles and 4,956 (177 x 28 items) zero (∅) articles were expected; however, the results (the total number of articles actually used— the bottom line) show that there were fewer 'zero' (4,862 used instead of 4,956 expected) and definite articles (7,654 used instead of 8,673 expected) but more indefinite articles used than expected (5,261 used instead of 4,425 expected).

Table 6 shows the distribution of articles by academic level including the use of the three articles in the generic context in each of the four groups. The Freshmen had the lowest rates of correct article usage when compared with the three other groups in all the subcategories. They had a success rate in the generic context of about 54%, the average of the three subcategory rates (zero article, 59%; indefinite article, 52%; definite article, 50%). The Sophomores had a success rate of about 65% (zero article 77%, indefinite article 53% and definite article 65%). The Bachelor's group had a 65% rate of correct article usage (80% zero article, 55% indefinite article and 59% definite article). The Master's group had the highest success rate of correct article usage, 72% (81% for zero article, 65% for indefinite article and 69% for definite article). The incorrect use of L3 articles in all subcontexts indicates that the subjects may be transferring or overgeneralizing the use of L3 articles. The result also shows that there is a correlation (although a correlation coefficient test was not run) between rate of accuracy and academic level with regard to the use of zero and indefinite articles.

Table 7 shows that in the test the learners used the definite article 25% of the time in [+HK] contexts ([-SR +HK]) and 5% of the time in [+SR] ([+SR -HK]) contexts; they also used the indefinite article 18% of the time and the zero article 52% in [+HK] contexts, while in [+SR] contexts ([+SR -HK]) the zero and the indefinite articles were used 25% and 53% of the time, respectively. It can be said from the results that the learners associate the zero article with the [+HK] feature in [+HK] contexts and the indefinite article with the [+SR] feature in [+SR] contexts.

A comparison of the rate of usage of the three articles in the two contexts, [+SR] and [+HK] by academic level showed that all four groups had the highest accuracy rate of article use for the zero article, followed by the definite article and then the indefinite article in [+HK] contexts. However, in [+SR] contexts, the article with the highest rate of usage was for the indefinite article, then the zero article and at last, least frequently used, the definite article.

CONCLUSION

Relation to previous work

The literature using Huebner's (1983) framework has been summarized in

Context Type	Frequency of articles used[a]		
	∅	a	the
Overall			
(a) [+HK]	2,548 (52.4%)	932 (17.7%)	1,891 (24.7%)
(b) [+SR]	1,208 (24.8%)	2,957 (52.6%)	374 (4.9%)
Academic level			
(a) [+HK]			
DEUG 1	638 (48.9%)	304 (18.6%)	**541 (26.9%)**
DEUG 2	741 (54.2%)	228 (16.2%)	**563 (24.7%)**
Licence	782 (53.7%)	255 (17.6%)	**487 (22.8%)**
Maîtrise	387 (52.8%)	145 (18.8%)	300 (24.5%)
(b) [+SR]			
DEUG 1	319 (24.4%)	828 (50.7%)	**113 (5.6%)**
DEUG 2	336 (24.6%)	849 (60.3%)	**112 (4.9%)**
Licence	361 (24.8%)	832 (57.4%)	**94 (4.4%)**
Maîtrise	192 (26.2%)	448 (58.0%)	55 (4.5%)

Note: n=50 for DEUG 1, DEUG 2, and Licence groups, and 27 for Maîtrise.
[a] The percentages in the table were obtained by (a) first dividing the total number of article type used in each context, [-SR +HK] and [-HK +SR], by the overall total used by all subjects or a group, and then (b) multiplied the result obtained in (a) by 100.
A. Cloze test: Correct article use expected

Table 7: Distribution of the Articles in [+HK] and [+SR] Contexts by Academic Level

Thomas (1989), and she suggests that L1 learners first associate the definite article with the specific referent ([+SR]) context, because they are sensitive to the specificity of nouns, while the L2 learners first associate it with the assumed known to the hearer ([+HK]) context.

Speakers in the L1 and L2 associate the articles to features. We see that the summary of article usage in Table 1 shows that for Mooré-French bilinguals in the L1, there are only two categories, while the L2 has four as in English. The L1 associates the definite article with [+SR +HK] and zero elsewhere whereas the L2 associates the definite article with [+HK] context and the indefinite and partitive with [-HK] context.

For [+HK] ([SR +HK])and [+SR] ([+SR -HK]) contexts, the results in Table

7 show that the definite article is not highly associated with [+HK] context (25%), but rather it is the zero article (52%). In the [+SR] context, it is the indefinite article (56%) that the subjects associated with the feature [+SR]. This result is inconsistent with Thomas' (1989) suggestion that learners initially associate the definite article with [+SR]. Thomas (1989) suggested that data from the generic context were needed to verify the association of the definite article context; the present study offers that missing enquiry. In that regard, the result of the test (Table 5) can be interpreted in two ways: (a) by considering the total number of article types used in [+SR] and [+HK] contexts (i.e. the frequency); (b) considering only the incorrect articles used in these contexts. Because the analyses in previous studies using this framework were based on (a); the present analysis will also depend on this same condition in order to make a fair comparison of all the results obtained using this approach. In this case, the results as presented in Tables 5 and 7, therefore, show that L3 learners do not associate the definite article but rather the zero article with [+HK] context, 46% use of zero article compared to 34% definite article (Table 5) and 52% zero article against 25% definite article. This result could be generalized to L2 and L3 learners, but it must be borne in mind that there are differences in terms of the level of proficiency of learners in all the studies that used this approach. However, this conclusion is warranted, because all the studies in this framework were based on the total number of article types used in the two contexts, referential indefinite ([+SR]) and generic ([+HK]).

Implications and directions for future research

This study also shows that the semantic wheel framework for NP reference can be used to analyze the acquisition of articles in L3. At this stage of research into L2/L3 acquisition of the English article system using Huebner's (1983) framework, the plausible hypothesis is that the learners associate the definite article with [+HK] context. From Table 1, predictions about article usage or transfer can be enhanced using this framework as a supplement to the constraints on transfer discussed in the SLA literature: language level, social factors, markedness, language distance and typology, developmental factors. This theory will also be of importance in SLA if it goes beyond the scope of the article system, and is used in the study of the determiner system as a whole, since the referential system is only limited only to the article system. Research on the use of the article system in other francophone countries and especially with French students learning English should be undertaken in order to see if the results will give support or not to my findings in relation to the place of L1 in the learning process. Finally, in order to better compare Thomas (1989) with other L3 studies, it might be interesting to survey learners at the beginning and intermediate levels since in this study the learners were of advanced level. One of the reviewers of this paper mentioned that "recent research has shown that there are actually two zero articles, or rather, a differentiation between zero and null" (Master, 1997, SYSTEM 2:215-232). Future studies should take this differentiation into consideration when analyzing data.

APPENDIX: CLOZE PASSAGE

In the five unrelated passages below, write the missing article (a, an, the) which you think is correct in the space (.....) provided. If no article is needed, put a "Ø." DO NOT INSERT ANY OTHER WORDS.

I. Michael Faraday

Michael Faraday was one of those remarkable men who began 1.... life in 2... very modest circumstances and yet reached 3..... top of their profession through 4... determination and 5.... certain amount of 6... good luck. Although he began his career as .7... poorly educated bookbinder, he became internationally known as 8..... scientist before he reached 9..... age of thirty. He devoted 10.... most of his life to 11.... experiments with 12.... electricity. He was 13... man who invented 14... first dynamo as well as 15... type of transformer.

II. Money

Before 16... money was thought of 17.... men exchanged 18.. goods. This was not 19... best system as 20.... person might not easily find 21..... somebody who wanted what he had and could offer something acceptable in exchange. It is thought that 22.. first money consisted of cowry shells, which are found in many parts of 23... world. It was in China that 24..... idea of using 25... coins first arose. In ancient Greece 26... coin was worth, for 27....example, 28.. certain number of 29... oxen or 30... olives and could not be used to buy anything else. In time, 31.. gold and, 32... silver were used since these are among 33...most rare metals, but 34... money which we use nowadays is mostly 35.... paper notes. For 36... long time now 37... actual value of 38.... coin has borne 39.... little relation to what one can get for it, and 40.. paper note is practically worthless in itself.

III. The blind man

Her strength was unflagging. One or two early risers saw her, tried to stop her and ask where she was going. For they saw 41... young woman of twenty-five, with 42...long hair not too tidily plaited and with no head-tie to cover it, wearing 43.... loose house buba and 44.... faded lappa to match tied tightly around her thin waist, and they guessed that all was far from well. Apart from 45..... fact that her outfit was too shabby to be worn outside her home and her hair too untidy to be left uncovered, there was 46.... unearthly kind wildness in her eyes that betrayed 47.... troubled spirit. But so agile and so swift were her movements that she dodged 48... many who tried to help her.

By 49.... time she reached Oyingbo market, 50... sun was peeping out from behind 51... morning clouds. She was nearing 52..... busy part of 53.... town and there were already people about. 54..... early market sellers were making their way to 55.... stalls in 56.... single file, their various bundles tied and balanced unwaveringly on their heads. She collided with 57..... angry Hausa beggar who, vacating one of 58..... open stalls where he had spent 59.... night, was heading for 60.... tarred road to start his dayís begging. He was 61.... blind and walked with his stick held menacingly straight in front of him; his other hand clutched shakily at his begging calabash. Nun Ego in her haste almost knocked 62... poor man down, running straight into him as she too was without 63.... use of her eyes. There followed 64.... loud curse, and 65.... unintelligible outpouring from 66.... mouth of 67..... beggar in his native if Hausa language, which 68.... few people in Lagos understood. His calabash went flying from his shaky hand, and he swung his stick in 69.... air to emphasize his loud curse.

"*Dan duru ba!*" he shouted. He imagined that, early as it was, he was being attacked by 70.... money snatchers who want to rob 71.... beggars, especially 72.... blind ones, of their daily alms. Nun Ego just managed to escape 73.... fury of 74.... beggar's stick as she picked up 75.... calabash for him. She did this wordlessly though she was breathing hard. There was nothing she could have said to this man who was enjoying his anger, recounting what he thought was about to happen to him in Hausa. He went on cursing and swinging his stick in 76.... air as Nun Ego left him.

She began to feel fatigued, and from time to time whimpered like 77.... frightened child; yet she walked fast, resentful that she should feel any physical hurt at all. As she walked, 78.... pain and 79....

anger fought inside her; sometimes 80.... anger came to 81.... fore, but 82.... emotional pain always won. And that was what she wanted to end, very, very quickly. She would soon be there, she told herself. It would all soon be over, right there under 83.... deep water that ran below 84.... Carter Bridge. Then she would be able to seek out and meet her *chi*, her personal god, and she would ask her why she had punished her so. She knew her *chi* was 85.... woman, not just because to her way of thinking only 86.... woman would be so thorough in punishing another. Apart from that, had she not been told many times at 87.... home in Ibuza that I her *chi* was 88.... slave woman who had been forced to die with her mistress when 89.... latter was being buried? So 90.... slave woman was making sure that Nun Ego's own life was nothing but 91.... catalogue of disasters. Well, now she was going to her, to 92.... unforgiving slave princess from 93.... foreign land, to talk it all over with her, not on this earth but in 94.... land of 95... dead, there deep beneath 96.... waters of 97.... sea.

It is said that those about to die, be it by drowning or by 98.... gradual terminal illness, use their last few moments of consciousness going through their life kaleidoscopically, and Nun Ego was no exception. Hers had started twenty-five years previously in 99.... little Ibo town called Ibuza.

IV. Salmon

100...salmon is a very large fish with silvery skin and a yellowish-pink flesh eaten as food. Seven species of salmon can be found in the waters of the Pacific. 101.. salmon hatches and dies in the same stretch of a cool, fast-flowing river. During its lifelong journey to sea and back, 102.... salmon confronts both natural and manufactured dangers. Unlike 103... salmon, 104... whale is a mammal and 105... whale is a dangerous animal, and scares fishermen.

V. Land and climate

Deforestation has destroyed many southern forests, but palm trees are still found. In the sahelian area, 106... baobab is the biggest tree. Elephants, antelopes, monkeys, and snakes all inhabit Benin. Most snakes are poisonous, and 107... python is considered sacred.

NOTES

[1]This paper was presented at the 50th Kentucky Foreign Language Conference, University of Kentucky, Lexington , Kentucky, April 17-19, 1997.

[2]L3 in this paper is English that the student learned after having acquired one or more African languages (L1) and French (L2).

[3]The proficiency level of subjects correspond to the different academic levels: (a) DEUG 1, the lowest proficiency level, is the first year in the University after 7 years of secondary education; (b) DEUG 2, the next level, is the second year in the University; (c) Licence is the third year which corresponds to Bachelor's level; Maîtrise, the highest proficiency level, is the fourth year, the equivalent of Master's level. See Kambou 1997, page 34 for equivalents in US and Burkina educational systems.

[4]This total is calculated from the number of hours of classroom presence for each academic level assuming no student repeated one class.

[5]The irregular distribution of gender may be due to the fact that the subjects were volunteers.

REFERENCES

Bickerton, D. (1981). *Roots of language.* Ann Arbor, MI: Koroma.

Emecheta, B. (1979). *The Joys of Motherhood.* New York: Heineman Educational Books Ltd.

Haden, E.F. (1973). The determiners in French. *Linguistics, 111*, 31-41.

Hakuta, K. (1976). A case study of a Japanese child learning English as a second language. *Language Learning, 26*, 321-351.

Huebner, T. (1983). *A longitudinal analysis of the acquisition of English syntax.* Ann Arbor: Koroma.

Huebner, T. (1985). System and variability in interlanguage syntax. *Language Learning, 35*, 141-163.

Kambou, M.K. (1997). *Acquisition of the English article system by francophone students: The case of Burkina Faso.* Unpublished dissertation. University of Illinois, Urbana-Champaign.

Kharma, N. (1981). Analysis of the errors committed by Arab University students in the use of the English definite and indefinite articles. I*nternational Review of Applied Linguistics, 19*, 333-345.

Master, P. A. (1987). *A cross-linguistic interlanguage analysis of the acquisition of the English article system.* Unpublished doctoral dissertation, UCLA.

Mizuno, H. (1986). *Interlanguage analysis of article errors in English among Japanese adult learners in an acquisition-poor environment.* Unpublished doctoral dissertation, Columbia University Teachers College.

Parrish, B. (1987). A new look at methodologies in the study of article acquisition for learners of ESL. *Language Learning, 37*, 361-383.

Tarone, E. & Parrish, B. (1995). Task-related variation in interlanguage: the case of articles. In H. Douglas, H.D. Brown, and S. Gonzo (Eds.), *Readings on Second Language Acquisition* (pp. 283-303). Englewood Cliffs, NJ: Prentice Hall Regents.

Thomas, M. (1989). The acquisition of English articles by first- and second-language learners. *Applied Psycholinguistics, 10*, 335-355.

Moses Kwadwo Kambou taught for 4 years (1988-92) at the University of Ouagadougou as a teaching assistant. As a Fulbright fellow at the University of Illinois, Urbana-Champaign (1992-97), he obtained an M.A. in Linguistics and a Ph.D. in Educational Psychology. He is currently an Assistant Professor of Linguistics at the University of Ouagadougou. Refer correspondence to Département des Langues Vivantes, Facultes des Langues, des Lettres, des Arts, des Sciences Humaines & Sociales (FLASHS), Université de Ouagadougou, 03 B.P. 7021, Ouagadougou 03, Burkina Faso,West Africa.