Korean Numeral Classifier and Topic Continuity in Written Discourse*

Byong-seon Yang
(Jeoniu University)

Yang, Byong-seon (1995). Korean Numeral Classifier and Topic Continuity in Written Discourse. Linguistics vol. 3. The purpose of this paper is to study classifier use and the Korean anaphoric system with reference to numeral and/or classifier in written discourse. To study anaphoric usage of four types of Korean numeral classifier constructions in written discourse, I chose a modern novel as a text and examine the data according to Givon's (1983) anaphoric distance between the form of reference expression and the activation status. To work toward an understanding of mechanisms of reference tracking of numeral classifier constructions, I carry out the type of quantitative analysis and linear topic continuity which have been adopted in current discourse analyses by Clancy (1980) and Givon (1983), I found that Korean numeral classifier constructions satisfy Givon's (1983) linear topic continuity scale and his robustness theory. The accessibility of referents is as follows: numeral only > numeral and classifier > numeral and noun > full form with numeral +Classifier+noun. Of course, the accessibility of four numeral classifier constructions is less high than pronoun, but is more high than definite NPs, relative clause adjective +nouns, indefinite NPs. etc.

1. Introduction.

In functional syntax and study on discourse, research on nominal reference has been discussed in terms of topic continuity, introduction of referents, and reference-tracking (H. Kim 1989). Foley and Van Valin

(1984) mention that there are four basic systems for signaling co-reference relations among NP arguments in discourse: switch-function, switch reference, gender, and the inference system. In Korean, which is classified as an inference system language, referents are encoded in several different ways such as zero anaphora, pronoun, and Noun Phrase according to the relevant semantic and pragmatic factors. Even though there is literature on Korean anaphoric devices such as zero-anaphora, pronoun, and definite NP's, NP's preceded by attributive adjectives and /or relative clauses, there are no studies on the anaphoric use of Korean numeral and/or classifier constructions. As shown in Appendix A, in Korean, 4 types of Numeral classifier constructions which can be used as anaphoric expressions are possible; NP+numeral +classifier construction, numeral + classifier construction which has no head noun, numeral+NP which has no classifier, and numeral only construction.

The purpose of this paper is to study classifier use and the Korean anaphoric system with reference to numeral and/or classifier in written discourse. In exploring the issues of numeral classifier's anaphoric system in written discourse, I chose a Korean modern novel Hayngpok-un Sengcekswun-i anicanha-yo "Happiness does not depend on the grade," written by Cengcin Im (1989, Seoul: Kolyewen), which is a story about Korean high school students' life. The novel consists with 9 sub-parts and 280 pages. I chose the novel because there are many dialogues between the students and their teacher and among students. Frequency distribution of numeral classifier in this novel is shown in Appendix B. To work toward an understanding of mechanisms of reference tracking of numeral classifier constructions, I will carry out the type of quantitative analysis and linear topic continuity which have been adopted in current discourse analyses by Clancy (1980) and Givon (1983).

2. The use of Korean numeral classifier

2.1. Classifier: General

Allan (1977) states that all languages have classifiers and that there are four types of classifier languages, although the productivity varies according to language. Allan's (1977) 4 types of classifier languages are as follows: Numeral Classifier languages in which a classifier is obligatory in many expressions of quantity and occurs in anaphoric or deictic expressions as well as in expressions of quantity (e.g. Thai, Burmese, Japanese, Korean, Chinese); Predicate Classifier (verb stem classifier) languages in which the verb consists of a theme and a stem (e.g. Navajo, Athapaskan languages);

Concordial classifier (noun class) languages in which classifying formatives are affixed to nouns, plus their modifiers, predicates, and proforms (e.g. Bantu, Semi-Bantu, Tonga); and Intra-locative classifier (nounincorporation) languages in which noun classifiers are embedded in some of the locative expressions which obligatorily accompany nouns in most environments (e.g. Toba, Eskimo, Dvirbal). The semantic role of classifiers tends to be associated with categories of particular perceptual salience. The primary function of these classifiers is not referential, but rather to denote the membership of referents in classes defined by the ways in which we interact with them (Denny 1976).⁴ The speaker can, by use of a classifier, extend or clarify the meaning of the common nouns with which they co-occur (Benton 1968). It is the cases where a single noun may co-occur with more than one classifier, each of which corresponds to and picks out different attributes of the referent to which the noun refers

2.2. Four Syntactic Patterns of Korean Numeral Classifiers

There is a universal principle that a classifier concatenates with a quantifier, locative, demonstrative, or predicate to form a nexus that cannot be interrupted by the noun which it classifies (Allen 1977:288). Contrary to other classifier languages, numeral classifier languages have their own syntactic sequence between numeral, classifier, and noun according to this universal principle. Since numeral classifier languages have at least one syntactic environment in which classifiers are obligatory. Korean has its own syntactic environment for a classifier as follows⁵:

- (1) a. Basic pattern: Numeral +CL+Gen Marker +Noun+Case Marker⁶ nav-ka twu-cang-uv congi-lul sa-ss-ta I-NOM 2-CL -GEN paper-ACC buy-PAST-DEC "I bought two sheets of paper."
 - b. Inverted apposition: Noun+Numeral+(Case Marker)+CL+(Case Marker)⁷ nay-ka congi-(lul) twu-cang -(lul) sa-ss-ta I-NOM paper-ACC 2-CL -ACC buy-PAST-DEC
 - c. Preposed Adverbialization: Numeral + CL+(Case Marker)+ Noun+Case Marker nav-ka twu-cang -(lul) congi-lul sa-ss-ta I-NOM 2-CL -ACC paper-ACC buy-PAST-DEC

d. Pronominalization: Numeral+CL+(Case Marker)
nay-ka (congi) twu-cang -(lul) sa-ss-ta
I-NOM paper 2-CL-ACC buy-PAST-DEC

However, if we disregrad case marking, Korean Numeral Classifier word order can be classified into 2 patterns, as shown in (2).

(2) a. Basic Pattern: (Number+Classifier followed by Noun)
(Det) + Number + Classifier + Particle + Noun
ce sey cang uy congi
those three CL GEN paper
"those three sheets of paper."

b. Inverted Pattern: (Noun followed by Number+Classifier)
(Det) + Noun + Number + Classifier
ce congi sey cang
those paper three CL

Basic pattern (2a), which number and classifier are followed by noun, is similar to Chinese except that the particle (i.e. uy) is obligatory in Korean. Japanese word order also is identical to (2a): particle is obligatory. However, the difference between Chinese and Korean is that inverted pattern (2b), which noun is followed by number and classifier, is used in Korean, not Chinese. As shown in Tables 1 and 2, inverted pattern either with classifier (cf. Table 1) or without classifier (cf. Table 2) is more popular than basic pattern in Korean written text.

Table 1: Frequency of Basic vs. Inverted Form of Numeral + Classifier + Noun in written text

Form with head noun and Classifier		
Basic Pattern	22 (22%)	
Inverted Pattern	77 (78%)	
Total	99 (100%)	

Table 2: Frequency of Basic vs. Inverted Form of Numeral + Noun in written text

Form without Classifier		
Basic Pattern	7 (24%)	
Inverted Pattern	22 (76%)	
Total	29 (100%)	

However, in Korean, head noun and/or classifier is optional (cf. Appendix A). Each pattern can be used not only as an introducer of discourse referents, but also as an anaphoric device. Thus, there are four major anaphoric uses in Korean numeral classifier constructions as in (3).

- (3) a. Full Form
 - i) Basic Pattern:

nev-kay-uv sonkalak-lul tuleolive-ss-ta

finger-ACC raise-PAST-DEC 4-CL-GEN

"(One) raised four fingers."

ii) Inverted Pattern:

sonkalak nev-kav-lul tuleollye-ss-ta

finger 4 -CL-ACC raise-PAST-DEC

- b. Numeral and Noun (Full Form without Classifier)
 - i) Basic Pattern:

nev sonkalak-lul tuleollye-ss-ta

finger -ACC raise-PAST-DEC

ii) Inverted Pattern:

sonkalak nevs-lul tuleollye-ss-ta

finger 4 -ACC raise-PAST-DEC

- c. Numeral and Classifier Form (Headless Full Form)8 ney-kay-lul tuleollye-ss-ta 4 -CL -ACC raise-PAST-DEC
- d. Numeral only (without CL and head noun): neys-lul tuleollye-ss-ta

4 -ACC raise-PAST-DEC

In Korean, not only zero-anaphora, pronoun, and a full NP, but also these four types of numeral classifier constructions can be used for the topic continuity in the discourse, which will be the main subject of next section in this paper.

Table 3 shows that how frequently each form is used in written text.

Table 3: The Frequency of four Numeral Classifier Constructions in written text

Classifier Form	Total	
With Head noun	Full Form (Numeral +CL+Noun)	99 (42%)
With Head houn	Numeral and Noun (without CL)	29 (12%)
	Number and Classifier	64 (27%)
Headless Form	Numeral only	44 (19%)
Total		236

In written discourse, the Full Form is used most frequently (99 out of 236; 42%) and Numeral and Noun Pattern without classifier is used least frequently (29 out of 236; 12%). The construction with head noun (128 out of 236; 54%) is used slightly more than that without head noun (108 out of 236; 46%).

3. Numeral Classifier Constructions in Korean anaphoric system

In this section, I will study the topic continuity of 4 types of numeral classifier constructions in Korean anaphoric system. The primary function of classifiers is not referential, but rather to denote the membership of referents in class (Denny 1976). In addition, a discourse function of numeral classifiers is to refer to exophorically - or anaphorically - anchored individuals to carry the identity of individuals who have already mentioned like zero-anaphora or pronoun (Downing 1984). Thus, I will study Korean anaphoric system with reference to numeral classifier constructions in written discourse.

3.1. Topic continuity in Korean (Korean anaphoric system)

Many linguistic and cognitive analyses of spoken discourse or written text have concentrated on the choice of full NP, pronoun, or zero anaphor as an anaphoric referring expression and argued that the choice of it is a function of context-dependent cognitive factor⁹. Among them, Givon (1983) proposed "linear topic continuity" to explain the choice among anaphoric devices. In general, the more accessible the referent is, the more reduced form of anaphoric device is used. If it is unaccessible, a full NP is used and if it is readily accessible, a zero anaphor is used.

Table 4: Givon's (1983) Continuity Scale

In explaining the relation of form and function in syntax, Givon argues that code unit in syntax is structure 'primarily' composed of morphology, word

Accessibility of Referent	kigh	low
Robustness of Form/Meaning		-> robust

order and intonation while "the message unit in syntax is information

processing and information sequencing (Givon 1983:1) Givon's (1983) work on "topic continuity" has set the stage by laying out the basic relationship between the form of a Referring Expression (RE) and accessibility of its referent to the listener, as shown in table 4. Basically, the less activated the referent is, the more robust will be the RE (both its phonological form and semantic content). Conversely, the more activated the referent is, the more reduced the RE will be. The listener thus can use the robustness of the RE to pick a referent among those already activated discourse entities, at least as an initial hypothesis about the intended referent (Li 1991).

Following Givon (1983), M.O. Hwang (1983) proposes the following interesting measurements including all construction types. The average "lookback" values (i.e. referential distance in Givon's term) correlate with the average "potential ambiguity" values (i.e. referential competition in Givon's term) and the results in Table 5 provide the following hierarchies of topic continuity devices, from the most continuous (i.e. #1) to the least continuous topic devices (i.e. #8).

(4) Human Arguments

- 1. Zero-Anaphora
- 2. pronoun
- 3. names
- 4. definite NP's
- 5. identifiable
- 6. demonstratives relative clause+names adjective
- 7. relative clause adjective +nouns
- 8 indefinite NP's

(5) Non-Human Arguments

- 1. Zero-Anaphora
- 2. pronoun
- 3. definite NP's
- 4. identifiables
- 5.names
- 6. relative clause adjective +nouns
- 7. demonstratives relative clause+names adjective
- 8. indefinite NP's

Table 5: Measurements of Lookback (anaphoric distance) in Korean (data taken from M.O. Hwang (1983))

M.O. Hwang (1983) proposed these nice hierarchies of Korean topic

214 양병선 continuity devices, as shown in (4) and (5), but she does not consider the four types of numeral classifier constructions that I mentioned in section 2.2

	Zero- anaphora	pronouns	Definite NPs	RC-ADJ	Indef.NP s [+REf]	One+NPs (Ref)
Human	1.19	1.33	5.99	13.03	18.50	20.00
Non-human	1.18	1.57	10.88	16.98	18.80	19.36

in the Korean anaphoric system. In the next section, I will explore what the position of anaphoric measurement of four numeral classifier constructions in the Korean anaphoric system is. I will use the measurement methods proposed by Givon (1983).

3.2. Anaphoric usage of Numeral and Classifier in Korean written text.

Table 6 shows how frequently the four types of numeral classifier forms can be used in written text.

Table 6: The frequency of four types of numeral classifier constructions

From the above table	we can see some	characteristics	of Korean numera	1
From the above table	. WE CAIL SEE SOILE	CHALACTERISTICS	UI KUICAII HUIHCIA	.I

Cla	assifier Form	Non-anaphoric	Anaphoric	Total
With	Full Form	71 (72%)	28 (28%)	99 (100%)
Head Noun	Numeral and Noun	23 (79%)	6 (21%)	29 (100%)
Headless Form	Numeral and classi- fier	27 (42%)	37 (58%)	64 (100%)
	Numeral only	1 (0%)	43 (100%)	44 (100%)
Tota	al .	122(52%)	114 (48%)	236(100%)

classifier constructions.

In total, the frequency of anaphoric (48%) vs. non-anaphoric usage (52%) of classifier constructions is similar. However, the form with a head noun is used for non-anaphoric reference (cf. Full form: 72%, Numeral

Noun form: 79%), and the form without a head noun is used for anaphoric more (cf. Numeral + CL:58% and Number only: 100%). This shows that the form without a head noun is used more frequently as an anaphoric expression than as an introducer of referents in the discourse. The speaker does not need to mention the head noun if the classifier constructions are used as an anaphoric device.

Denny (1979:318-10) claims that in the basic pattern (or 'partitive construction' in his term) the numeral and classifier are presupposed. whereas in the inverted pattern (his 'adverbial construction') only the head noun is presupposed. This would suggest that the inverted pattern is better suited for anaphoric uses. Table 7 shows that the inverted pattern has a greater overall frequency, in both anaphoric and non-anaphoric uses. In other words, for Korean written discourse, the inverted pattern does not seem to be used for one particular more than the other.

Table 7: Frequency of Basic vs. Inverted Pattern

	Non-anaphoric	Anaphoric
Basic pattern: NUM+(CL)+NP	18 (19%)	11 (32%)
Inverted pattern:NP+NUM+(CL)	76 (81%)	23 (68%)
Total	94 (100%)	34 (100%)

Table 8 shows an interesting comparison between four different classifiers. General classifiers, such as kay and multi-extended classifiers, such as cang. or can, can be used with a very diverse set of nouns. Since these classifiers can potentially be used with many different nouns, it may difficult to match the classifier to its head noun, and therefore, these classifiers tend to occur with their head. In contrast, a non-extended classifiers, such as the human classifier salam, is used with a specific set of nouns and can often occur without the head noun present. Table 8 indicates that the more general a classifier is, the more likely it is to need a head noun.

Table 8: Frequency of Classifier with vs. without head noun

3.3. Topic Continuity of Numeral Classifier Constructions in

	with head noun	headless	
kay	16	2	
cang	10	5	
can	6	1	
salam	1	10	

Written Text

As I mentioned in section 3.1, Givon (1983) used his concept of linear topic continuity to explain the anaphoric system. Following his idea, I studied Korean written text and I found the following anaphoric distances for numeral classifier constructions. Givon operationalizes and measures activation by looking at how recently the discourse entity has been evoked (i.e. referential distance), and whether or not another eligible entity is corepresent in the preceding context (i.e. referential competition). Additional factors are the semantic role of entity (agent, patient, etc.); animacy of the entity; whether the reference is specific and generic; whether the entity is evoked in a main or subordinate clause (Li 1991). Because of the limited number of classifier constructions, I will study only referential distance in this paper. I counted the number of clauses between the antecedent and the four types of numeral classifier constructions through the whole text. The average number of clauses is as follows:

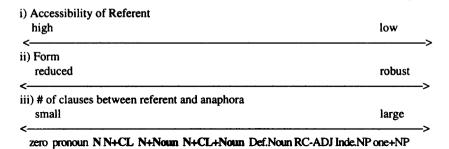
Table 9: Anaphoric Distance of Numeral Classifier Constructions in Korean written discourse

Table 9 supports Givon's (1983) linear topic continuity theory.¹⁰ If an anaphoric form is robust, then the anaphoric distance is far. Thus, when we

	Numeral only	Numeral and CL (no noun)	Numeral and Noun(no CL)	Full Form:NUM +CL+Noun
Average # of Clause	1.89	2.27	7.16	7.82

adopt M.O.Hwang's (1983) topic continuity scale of Korean anaphoric system for Korean numeral classifier constructions, then Korean anaphoric system can be described as in table 10.

Table 10: Linear topic continuity in Korean Written text



This Korean topic continuity scale fully support Givon's (1983) linear robustness theory.

4. Conclusion

In this paper, I handle the Korean numeral classifiers and their role in topic continuity in written discourse. To study anaphoric usage of four types of Korean numeral classifier constructions in written discourse. I chose a modern novel as a text and examine the data according to Givon's (1983) anaphoric distance between the form of reference expression and the activation status. We found that Korean numeral classifier constructions satisfy Givon's (1983) linear topic continuity scale and his robustness theory. The accessibility of referents is as follows: numeral only > numeral and classifier > numeral and noun > full form with numeral +CL+noun. Of course, the accessibility of four numeral classifier constructions is less high than pronoun, but is more high than definite NPs, relative clause adjective +nouns, indefinite NPs, etc.

Notes

- * This is a revised version of one of my Ph.D. qualifying papers at SUNY at Buffalo. I am greatly indebted to Dr. David Zubin and my colleague Dan Davitt for their valuable comments on previous versions of this paper.
- 1. H. Kim (1989:443) introduces the following table to compare the frequency of three major categories of anaphora in English, Japanese (Clancy:1980), Chinese (Chen:1986), and Korean (H.Kim:1989):

English Japanese Chinese Korean

Noun Phrase	260 (15.7%)	248(26.8%)	363 (26.5%)	189(33.9%)
Pronoun	1056(63.8%)	0 (0%)	490(35.8%)	0 (0%)
Zero-anaphora	339(20.5%)	677(73.2%)	516(37.7%)	369(66.1%)
Total	1655(100%)	925(100%)	1369(100%)	558(100%)

Clancy (1980) observed for Japanese spoken data and H.Kim (1989) observed in Korean spoken discourse that there were no occurences of the pronoun as an anaphoric device. (M.Hwang 1986:52)

- 2. H. Kim (1989) observed topic continuity using zero anaphora, pronoun, and noun phrases in Korean spoken discourse and M.O. Hwang (1986) observed it in written text.
- 3. There has been some discussion that noun classifiers reflect human cognition. That is, classifiers are not simple linguistic devices or historical relices, but rather they are cognitive categoies (cf. Allan 1977, Denny 1976, Benton 1968, Lakoff 1987). I (B.S. Yang, to appear) study what controls the human cognitive process to use the numeral classifier with head noun in Korean and suggest that there are 3 types of classifier in Korean, depending on what affects the categorization and the extension. Cf. Downing (1984, chapter 5) for anaphoric use of Japanese classifiers.
- 4. Cf. B.S. Yang (1989, to appear) for Korean numeral classifier's use for its membership denotation and its extension and S.R. Oh (1995) for its semantics and universals..
- 5. Refer to Erbaugh (1986) for Chinese numeral classifier syntactic paptterns and Downing (1984, 1986) for Japanese.
- 6. The following will be used in the glosses of the Korean data in this paper.

ACC Accusative CL Numeral Classifier DEC Declarative FUT Future Tense GEN Genitive PAST Past Tense PRES Present Tense REL Relative Marker TOP Topic Marker In this paper, I will follow the Yale system for Korean Romanization.

Downing (1984:42) proposed 7 syntactic patterns for Japanese Numeral Classifiers as follows:

- (i) a. Basic: Numeral +CL+Gen Marker +Noun+Case Marker
 - Ni-mai-no irogami-o

totta.

- 2-CL-GEN colored paper-ACC took
- "(I) took (the) two sheets of colored paper."
- b. Inverted apposition (Noun+Numeral+CL+Case Marker) Irogami ni-mai-o totta
 - "(I) took (the) two sheets of colored paper."
- c. Adverbialization (Noun+Case Marker+Number+CL)

Irogami-o ni-mai totta.

- "(I) took (the) two sheets of colored paper."
- d. Preposed Adverbialization (Numeral + CL+Noun+Case Marker)

Ni-mai irogami-o totta.

"(I) took (the) two sheets of colored paper."

e. Appositional ellipsis (Noun+GEN+Numeral +CL+CAse Marker)

Irogami-no ni-mai-o totta.

"(I) took two of the pieces of colored paper."

- f. Pronominalization (Numeral+CL+Case Marker) Ni-mai-o totta.
 - "(I) took (the) two sheets."
- g. Reduced Adverbialization (Numeral +CL)

Ni-mai totta.

"(I) took two sheets."

The difference between Japanese and Korean syntactic patterns of numeral classifier constructions is that the appositional ellipsis (i.e. (ie)) is impossible in Korean and Korean allows many double case marking paptterns (i.e. (1b)).

- 7. In informal speech, the classifier in (1b) can be deleted.
- 8. Downing (1984) studied the uses of Numeral +CL pairs in Japanese. These same uses can be found in Korean as follows:
 - (i) a. Introducing referents without anaphoric or exophoric meaning.
 - b. Introducing additional members of categories already introduced.
 - e.g. enehakkwa-nun kvoswu-ka yel-myeng i-ko, yengmwunkwa-nun dept. of linguistics-TOP professor-NOM 10-CL be-and Dept. of English-TOP tases-myeng i-ko. chelhakkwa-nun ilkop-myeng i-ta.
 - 5- CL be-and Dept. of Philosophy-TOP 7 -CL be-DEC

"There are 10 professors in the Dept. of Linguistics, 5 professors in Dept. of English, and 7 professors in Dept. of Philosophy."

- c. Singling out subsets of groupings of referents already introduced.
 - e.g. enehakkwa-nun kyoswu-ka 10-myeng i-ta. 3-myeng-nun Dept. of Linguistics-TOP professor-NOM 10-CL be-DEC 3-CL -TOP namca i-ko. lkop-myeng-un yeca man be-and 7-CL -TOP woman be-ta

"There are 10 professors in the Dept. of Linguistics. Three of them are men and seven of them are women."

d. Refering to exophorically -or anaphorically - anchored individuals to carry the identity of individuals who have already been mentioned like ellipsis or true pronoun. Among these four uses, anaphoric use (i.e. (id)) is the main topic of this paper.

9. There is an interesting study on Korean numeral construction as introduction referents of human vs. non-human referents and as human anaphoric use of classifier done by H.Kim (1989).

[Table 1] The Frequencies of Initial Mention of Human Referents in spoken Narratives

Indefinite NP's		33 (66%)
Attributive Adjective/Clause +NP		9 (18%)
NP+ Number + Classifier		8 (16%)
	Total	50 (100 %)

[Table 2] Initial-mention of Non-Human Referents in Spoken

 Narratives

 Bare NP
 122 (86%)

 Adjective/Deictic +NP
 13 (9%)

 Classifier +NP
 7 (5%)

 Total
 142 (100%)

[Table 3] Frequency of Forms for used for coreference

Noun Phrase		189(33.9%)
Pronoun		0 (0%)
Zero-anaphora		369(66.1%)
•	Total	558(100%)

Also, he mentions that among the 189 NPs used for coreference, the distribution of anaphorically mentioned NP's is as follows;

[Table 4] The Distribution of Human Referential NP's

[- acre of the promote contract transmit transmit	
Demonstrative (ku 'that' or i 'this') +NP	90 (47.6%)
Bare NP	26 (13.8%)
(Demonstrative+) Adjective or clause +NP	26 (13.8%)
NP with Classifier -Number	20 (10.6%)
Anaphorically used classifier (Numer +CL)	27 (14.3%)
Total	189 (100%)

10. However, Fox (1987) has argued that Givon's (1983) linear topic continuity is only part of the whole story since, if there is a subordinate clause in a story, it can not explain the topic continuity. Thus, she proposed "Rhetoric Structure Topic Continuity," whose

basic assumption is that texts are not merely strings of clauses, but are groups of hierarchically organized clauses which bear various informational and interactional relations to one another.

Li and Zubin (1990) and Li (1991) argue that not only Givon's (1983) linear structure, but also Fox's (1987) rhetoric structure continuity hypothesis is incomplete. Taking examples from Mandarin written texts, they proposed that the choice of anaphoric referring expression involves perspective taking (or subjectivity) in discourse. From Fox (1978) and Li and Zubin (1990), Li (1992), Givon's idea is not always correct, but I will concentrate only on linear topic continuity here since it is beyond this study.

References

- Allan, Keith. 1977, "Classifiers," Language 53:285-311.
- Benton, Richard, 1968, "Numeral and Attributive Classifiers in Trukese," Oceanic Linguistics 7,2:104-146.
- Chen, Ping. 1986. "Referent Introducing and Tracking in Chinese Narratives," Unpublished Ph.D. dissertation, U.C.L.A.
- Clancy, P. 1980, "Referential choice in English and Japanese Narrative discourse," in Chafe (ed.) 1980. Pear Stories: Cognitive, Cultural, and Linguistic Aspects of Narrative Production. Norwood, N.J.: Alex Publishing Co.
- Denny, J. Peter. 1979. "Semantic Analysis of Selected Japanese Numeral Classifiers for Units," Linguistics 17: 317-335.
- Downing, Pamela, 1984, "Japanese Numeral Classifiers: A Semantic, Syntactic, and Functional Profile," Unpublished Ph.D. dissertation, UC at Berkeley.
- -. 1986. "The Anaphoric Use of Classifiers in Japanese," in Collette G. Craig (ed.) Noun Classes and Categorization. Philadelphia: John Benjamins Publishing Co.
- Erbaugh, Mary S. 1986. "Taking Stock:-The Development of Chinese Noun Classifiers historically and in Young Children," in Collette G. Craig (ed.) Noun Classes and Categorization. Philadelphia: John Benjamins Publishing Co.
- Foley, William A. and Robert D. Van Valin Jr. 1984. Functional Syntax and Universal Grammar. Cambridge: Cambridge University Press.
- Fox, Barbara A. 1987. Discourse Structures and Anaphora. Cambridge: Cambridge University Press.
- Givon, Talmy. (ed). 1983. Topic Continuity in Discourse. Amsterdam: Benjamins.

- Hwang, Myong Ok. 1983. "Topic Continuity/Discontinuity in Korean Narrative. in Korean." *Linguistics V.* 3: 47-79.
- Kim, Haeyeon. 1989. "Nominal Reference in Discourse: Introducing and Tracking Referents in Korean Spoken Narratives,"

 Harvard Studies in Korean Linguistics III: 47-79.
- Lakoff, George. 1987. Women, Fire, and Dangerous Things.
 Chicago: The University of Chicago Press.
- Li, Naicong. 1991. "Perspective-Taking in Mandarin Discourse," Unpublished Ph.D. dissertation. SUNY at Buffalo.
- Li, Naicong and David A. Zubin. 1990. "Perspective-taking and Discourse Continuity." CLS 26
- Oh, Sang-Ryong. 1995. "Korean Numeral Classifiers: Semantics and Universals," Discourse and Cognition V 1: 231-260.
- Yang, Byong-seon. 1989. "Numeral Classifier: Reflection of Conceptual Structure: Korean and Chinese cang/zhang and tay/dai," ms., in SUNY at Buffalo.

Appendix A: Anaphoric Use of the Numeral Classifier based on *Hayngpok-un Sengcekswun-i Anicanhayo* 'Happiness is not Same with Grade' (written by Cengcin Im (1989) Seoul: Kolyewen)

(1) a. NP+Numeral +Classifier

Uncwu emeni-nun yaksoktaylo **umakhoy thikheys**i-lul cwunpihay-twu-ess-ta.

mother-TOP promise-as concert ticket-ACC prepare-PAST-DEC
...Uncwu-nun temtemhan phyoceng-ulo **thikheys twu-cang**i-lul pata-tul-ess-ta
-TOP emotionless expression-with ticket two-CL-ACC receive-PAST-DEC

"Uncwu's mother prepared the concert tickets as promised. ... Uncwu received the two tickets with emotionless expression." (Text: 227)

b. Numeral+ Classifier
chayk-lul tulyetapo-ten Uncwu-wa Cwungpay_i-nun mwuenka
book-ACC look at-Rel -and -TOP something

simsangchi anh-un sathayim-lul nukki-ko kokay-lul tul-ess-ta. common not -REL situation-ACC feel -and head-ACC look up-PAST-DEC

Korean Numerial Classifier and Topic Continuity in Written Discourse 223

payngpayng tolko-iss-ten Pongkwu-eykey **twu-salam**i-un round and round -REL -to 2-CL -TOP chakawun sisen-lul tenci-ess-ta.

emotionless eye-ACC turn-PAST-DEC

"Uncwu and Cwungpay who looked at the book felt something uncommon. The two (people) looked emotionless at Pongkwu who was walked around." (Text: 23)

c Numeral +Noun

Choksay-nun nameci twu-myeng-uy yecaay;-ka ancaiss-nun -TOP other 2-CL-GEN girl- NOM sit- REL soncis-lul hav-ss-ta thevipwul-lul hvanghav ola-nun table-ACC toward come -REL sign-ACC do-PAST-DEC twu yecaayi-to nayngkhum Mwunto-ney theyipwul-lo wa kathi anh-ass-ta ٠° table -to come_sit_PAST-DEC girl -too auickly

"Choksay sent a sign to come over to the other 2 girls. The two girls came over quickly and sat down together." (Text: 54)

d. Numeral only

apeci-wattali-itongmwunhoy-ey chek nathana-poa.father-and daughter-NOM alumni meeting-atappear-iftwuli ta nemwumes-iss-e po-il-keyatwo all very much nice-look-FUT-DEC

"If father and daughter come to the alumni meeting together, the two will look great." (Text: 64)

224 양병선

Appendix B: Frequency Distribution of Korean Numeral Classifier

— based on Hayngpok-un Sengcekswun-i Anicanhayo 'Happiness is not same with Grade' (written by Cengcin Im (1989) Seoul: Kolyewen)

Rank	Form	Referent class	Total
(Full/Headless)			
1	myeng	human beings	44 (20/24)
2	kay	small, rounds object	18 (16/2)
3	cang	sheets, thin, spread	15 (10/5)
4	kaci	kinds	13 (8/5)
5	tay	vehicles, machines, spank, cigarette	12 (8/4)
6	salam	human beings	11 (1/10)
7	can	drink	7 (6/1)
8	mati	branch of human bone/plant	5 (3/2)
9	pwun	people(honored)	3 (2/1)
9	cwul	letters, writing	3 (2/1)
9	khan	room	3 (2/1)
9	kyep	layers	3 (2/1)
9	pal	walking, bang	3 (0/3)
14	pen	abstract, action	2 (2/0)
14	pyeng	bottles	2 (2/0)
14	phyen	pieces(small), poem	2 (2/0)
14	kap	small box(cigarette)	2 (1/1)
14	nom	guys	2 (2/0)
14	kok	music	2 (1/1)
14	kayphi	cigarette	2 (0/2)
21	mali	animal	1 (1/0)
21	kwen	books, bounded	1 (1/0)
21	mokum	a mouthful	1 (1/0)
21	ccok	side	1 (1/0)
21	nip	leaves, coin	1 (1/0)
21	conglywu	kinds	1 (1/0)
21	pangwul	small liquid	1 (1/0)
21	songi	blossom	1 (1/0)
21	kakwu	family	1 (0/1)
21		class	1 (0/1)
Total	pan	Ciass	163 (99/64)
iotal			103 (77/04)

전북 전주시 효자동 전주대학교 영어영문학과 양병선