



National Library
of Canada

Bibliothèque nationale
du Canada

Canadian Theses Service

Services des thèses canadiennes

Ottawa, Canada
K1A 0N4

CANADIAN THESES

THÈSES CANADIENNES

NOTICE

The quality of this microfiche is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

If pages are missing, contact the university which granted the degree.

Some pages may have indistinct print especially if the original pages were typed with a poor typewriter ribbon or if the university sent us an inferior photocopy.

Previously copyrighted materials (journal articles, published tests, etc.) are not filmed.

Reproduction in full or in part of this film is governed by the Canadian Copyright Act, R.S.C. 1970, c. C-30.

**THIS DISSERTATION
HAS BEEN MICROFILMED
EXACTLY AS RECEIVED**

AVIS

La qualité de cette microfiche dépend grandement de la qualité de la thèse soumise au microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

S'il manque des pages, veuillez communiquer avec l'université qui a conféré le grade.

La qualité d'impression de certaines pages peut laisser à désirer, surtout si les pages originales ont été dactylographiées à l'aide d'un ruban usé ou si l'université nous a fait parvenir une photocopie de qualité inférieure.

Les documents qui font déjà l'objet d'un droit d'auteur (articles de revue, examens publiés, etc.) ne sont pas microfilmés.

La reproduction, même partielle, de ce microfilm est soumise à la Loi canadienne sur le droit d'auteur, SRC 1970, c. C-30.

**LA THÈSE A ÉTÉ
MICROFILMÉE TELLE QUE
NOUS L'AVONS REÇUE**

An Algorithm for Article Instruction

Susan M. Murray

A Thesis
in
The Centre
for the
Teaching of English as a Second Language

Presented in Partial Fulfillment of the Requirements
for the Degree of Master of Arts at
Concordia University
Montréal, Québec, Canada

April 1986

© Susan M. Murray, 1986

Permission has been granted to the National Library of Canada to microfilm this thesis and to lend or sell copies of the film.

The author (copyright owner) has reserved other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without his/her written permission.

L'autorisation a été accordée à la Bibliothèque nationale du Canada de microfilmer cette thèse et de prêter ou de vendre des exemplaires du film.

L'auteur (titulaire du droit d'auteur) se réserve les autres droits de publication; ni la thèse ni de longs extraits de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation écrite.

ISBN 0-315-30623-8

ABSTRACT

An Algorithm for Article Instruction

Susan M. Murray

An analysis of the syntactic and semantic aspects of the English article system is given as the first step in presenting an algorithm that would make the teaching of the English article system to non-native English speakers more effective. The algorithm itself is presented in flowchart format as a set of grammatical and semantic choice options. It reflects the complexity of choosing the correct article. A discussion follows of how the algorithm could be used as the basis for structuring and sequencing a program of instruction for use in the development of a computer assisted instructional package.

Acknowledgements

I am very grateful to Dr. Bruce Barkman, my supervisor, for his patience and assistance during the writing of this thesis. I am particularly grateful for his careful reading and astute comments.

I owe a debt of gratitude to my readers, Dr. Gwen Newsham and Dr. Joe Palmer, for their comments on this work. In particular I would like to acknowledge Dr. Gwen Newsham who convinced me several years ago to return to University and who has encouraged my studies since that time.

I am also grateful to my children, Kristene and Sean, for being so tolerant and understanding while I was writing this thesis.

TABLE OF CONTENTS

	Page
Chapter 1 Introduction	1
Chapter 2 Review of the Literature	5
Chapter 3 Research Methods	
3.1 Description of Procedure for Making the Model	42
3.2 Analysis of the Articles	46
Chapter 4 The Algorithm	<u>64</u>
Chapter 5 Summary, Conclusions and Implications for Teaching	84
Bibliography	90

List of Figures

Figure 2.3	Christophersen's familiar/unfamiliar, unital/continuous distinction	14
Figure 2.9.1	Halliday's Determiner network system	21
Figure 2.9.2	Organization of Winograd's system	23
Figure 2.11	Acton's Conceptual framework for article use	30
Figure 2.12.1	Bickerton's Semantic Space for Articles	37
Figure 2.12.2	Bickerton's Semantic Space for Articles	37
Figure 4.1	An algorithm for article instruction	66
Figure 4.2	An algorithm for article instruction showing conceptual overlap	78

CHAPTER 1

1.0 Introduction

The English article system has interested linguists, English as a Second Language (ESL) Teachers and ESL learners for a long time. Linguists work at developing theories to account for the functions and meanings of articles and their role in the English language. ESL teachers comment upon the difficulty of teaching them. They were the number one teaching problem reported by teachers in the Los Angeles area (Covitt, in Celce-Murcia, 1983:171). Learners with a near perfect command of English can often be identified as non-native speakers solely on the basis of their faulty article usage. Even after years of instruction and exposure to articles, learners of English find that the article system remains one of the last areas of the English language mastered.

Why is the article system so difficult to learn? Can this system be presented in ways that would make learning it more effective? The purpose of this thesis is to create an algorithm to help Second Language learners (L2) learn the English article system more efficiently and to enable them to use articles more correctly.

1.1 Why are the Articles so Difficult to Teach?

The differences in meaning among the articles (a, the, \emptyset), which the native English speaker intuitively recognizes, are difficult to describe. Articles are very

complex, abstract, and sensitive to discourse variables. Other systems -- syntactic and semantic -- have to be considered in order to determine the appropriate choice among the members of the article system. Jespersen (1949:404) states "It is impossible to give a small number of settled rules available for all cases; idiomatic usage very often runs counter to logic or fixed rules". Some teachers even recommend not teaching them at all, suggesting that correct use is acquired more through practice than close study of the rules and their many exceptions (Pica, 1983).

1.2 Why are Articles so Difficult to Learn?

It is not surprising that ESL learners have difficulties using English articles, considering the considerable knowledge of English language syntax, semantics and pragmatics required for their use. Also, difficulties are experienced by some ESL learners because some languages express article functions by different means. One reason which is suggested for these learner difficulties is that these learners may not 'think' in the same conceptual categories as does the native English speaker (Landa, 1976; Acton, 1977). For learners from language backgrounds whose article system seems to resemble English, such as those with French as a mother tongue, there are also difficulties. This is because the corresponding forms are used differently. For example, French requires the definite article in expressions like "J'aime le poulet", where

English requires zero: "I like chicken". The learning problem is caused both by the complexity of the articles, and by the lack of similar use in the other language.

1.3 Approaches to Teaching Articles

The different theoretical frameworks that have been used to describe English -- traditional, structural, transformational, and systemic -- have, naturally enough, taken somewhat different approaches to the analysis of the articles. However, none has arrived at a simple description.

Most pedagogical grammars up to now have used mostly sentence-level examples, and have described the semantic nature of the articles inadequately (Acton 1977, Grannis 1972). Many present several complex concepts at once, introducing for this purpose an elaborate terminology, for example, definite/indefinite, general/particular, familiar/unfamiliar, concrete/abstract. ESL learners are thereby overloaded conceptually.

Individually-programmed learning material is one possible solution to the problem. However, a computer search revealed no available programmed-learning materials for ESL article instruction.

1.4 Purpose of this Study

The purpose of this study is to present an analysis of the syntactic and semantic aspects of the English article system and to use this analysis as the basis for the

construction of an algorithm which could be used to simplify the learning of the English article system by non-native speakers of English. In addition, an attempt will be made to show how the article algorithm could be used as the basis for structuring and sequencing a program of instruction, eventually for use in the development of a computer-assisted instructional package.

1.5 Limitations of this Study

This study will attempt to design an algorithm to assist in teaching English article usage. While accounting for most correct uses of the articles, it will not be able to account for all possible uses, because the article system is, at present, not completely described and so it is not possible to foresee all possible occurrences.

1.6 Definitions

Articles - The articles are a part of speech. They are a class of function words that mark nouns and occasionally other parts of speech ('the rich'). In English there are three: a, the and 0. Like all function words, they are defined by listing.

Algorithm is a step by step procedure to solve a problem.

Genus of nouns refers to the whole class of nouns.

A noun phrase a sentence unit with a noun (or pronoun) as the nucleus. It can consist solely of the nucleus, or it may include determiners and modifiers.

CHAPTER 2

Review of the Literature

2.0 Introduction

Scholarly, traditional, structural, transformational, and systemic grammarians have all taken somewhat different approaches in explaining the functions and meanings of English articles. There is such a copious literature on the subject that this chapter will deal only with representative studies. Christophersen (1939), Hewson (1972) and Jespersen (1949) represent the early scholarly traditional approach. Yotsukura (1970) best exemplifies the structural approach, while excellent summaries of the transformational approach appear in Karmiloff-Smith (1979) and Hawkins (1978). Halliday (1976) and Winograd (1972) represent the systemic approach. Many of these linguists, however, refer to Christophersen as the source of the most comprehensive analysis of the articles.

2.1 Origins of the English Articles

The English article system has a very interesting history. English hasn't always had a system of articles. Hewson (1972) says that the article system satisfies a 'practical need' that arose in the evolution of some Indo-European languages, the need for a morpheme to counteract the drift within the system of the noun towards a greater generalization. This drift is historically attested in the

Indo-European languages in the reduction of the eight case system, concomitant with the development of a greater range of abstract expression and the appearance of article systems (Hewson 1972:14).

Articles appeared slowly in English over several hundred years. This development of the article system helps explain why at different stages of the language there has been fluctuation in the usage of the article system and also why there are fluctuations in present day usage in certain constructions (Hewson 1972:24).

In Old English, there was a one article system. There was a contrast of 'definite' article and 'zero' on the one hand, and a contrast of 'an' and 'sum' on the other (Hewson 1972:21).

The zero article is the oldest of the three article forms. Initially it conveyed both an indefinite sense and a definite one (i.e. proper names). It later conveyed the notions of continuous object and abstract idea (Christophersen 1939:84).

The definite article 'the' originated in a demonstrative pronoun (which had a full declension). In Old English there were two definite determiners which functioned as deictics. They gradually split to form the modern definite article 'the' and the demonstrative pronoun 'that'. 'The' started in a few isolated instances (for example the names of rivers) and gradually spread to cases where a common name is used in a proper-name capacity

(Christophersen 1939:83).

The indefinite article was the last step towards the modern system. It has its roots in the numeral 'an' (formerly declined as an adjective). It was sometimes used in Early Old English with the sense of 'a certain'. Eventually 'a' took over the unital sense (one of), while 'one' developed the numeral sense. The zero form continued to express continuous objects and abstract ideas (Christophersen 1939:84).

2.2 Traditionalism

Early twentieth century linguists used a large variety of terms in their attempt to describe the general psychological functions of nouns with or without an article (Christophersen 1939). Grassiere says, "The articles are one of the most effective instruments of analysis of abstraction and clarity in developed languages" (in Kramsky 1972:51). The large variety of terms used to explain the meaning of the concepts represented by the articles (for example, determination, definiteness, concretization, substantiation) indicates how difficult the concepts are to describe. An excellent comprehensive survey of these terms used in early scholarly works appears in Christophersen The Articles; a study of their theory and use in English (1939). These terms will be discussed as a background to Christophersen's own thesis.

One term commonly used in grammars prior to 1939 is 'determination', which means the opposition of something

of vague and indefinite extent (the whole genus) which normally takes zero article, to something of a lesser extent, something limited with 'fixed boundaries', which normally takes an article (Christophersen 1936:52). An example is "I like wine. I liked the wine (they gave us)".

The term 'actualization' means that the article 'the', when added to a noun, indicates the 'actuality' of a concept or presentation (Christophersen 1939:55). That is, by the addition of an article, a noun is changed from being the name of a mere idea into something 'actual' or 'real'. For example, 'house' is only an abstract concept, there are many different houses; a real house; i.e., 'a house' or 'the house', comprises, in addition to its generic features, a lot of individual ones. It has 'reality' and 'actuality'.

The term 'substantiation' used by Bühler (1934, in Christophersen 1939), means that the articles add substance to the noun. Substance distinguishes nouns from verbs and adjectives. It is what is added in the transition from idea to reality. The notion of substantiation, Christophersen notes, accounts for proper nouns, because they already contain substance. No article is needed with them.

'Concretization' is a term used by Guillaume in Le problème de l'article et la solution dans la langue française (Guillaume, in Christophersen 1936:57). He distinguishes between the 'potential' and 'effectual'

meanings of a noun. The former concerns language, (le nom en puissance), and the latter, 'speech' (le nom en effet). In languages, a noun can, according to Guillaume, potentially mean an infinite number of different things, whereas a noun in speech has only one of these potential meanings, for example the whole species, a single individual or something between these two extremes (Guillaume in Christophersen, 1936:55). In speech, the article can indicate which meanings are intended. The article is "un simple signe de relation entre une idee et un fonds d'idees" (Guillaume, in Christophersen 1939:55). Thus the noun is made more 'concrete' by the addition of an article.

Traditional grammarians, although each uses different terms to do so, are attempting to describe the psychological functions of articles when added to nouns. In essence, articles add a concretizing element to the noun which (except for the proper noun) is in itself abstract.

2.3 Christophersen

Christophersen states that the above theories do not explain the articles with uniques, or with unit words, or do not account for the differences between the articles. Basing his own theory partly on Bühler's substantiation theory and partly on Guillaume's theory, Christophersen proposes that the articles do more than indicate 'substance'. "To receive an article a word must stand for

something viewed as having 'precise limits' [Poutsma's definition of articles as that of marking off or defining]" (Poutsma, in Christophersen 1939:39). He thus tries to explain the difference between the two articles through his theory of familiarity and unity.

According to this theory, the definite article 'the', contains an element of substance and familiarity. That is it adds to the potential meaning of a word "a certain association with earlier knowledge by which it can be concluded that only one individual is meant" (Christophersen 1939:72). It does so even though our familiarity with the indicated subject may be small. By the explicit reference to external knowledge not contained in the meaning of the word itself, the word with 'the' attains something of the nature of a proper name.

When using 'the' the speaker must not only know which individual he is thinking of but must also suppose that the hearer knows it, too. That is, the 'the-form' should call up in the hearer's mind the image of the exact individual that the speaker is thinking of. Consequently, the speaker must adapt his language to the hearer's state of mind (Christophersen 1939:28). Christophersen provides the following example. In a room with only one table, provided no other table has just been mentioned, the phrase 'the table', will call up the idea of that particular piece of furniture. The essential thing is that one knows that there is one (and only one) table in the room and that it

is the one that is meant.

If a 'the-form' is used without the hearer's attention being focussed on the proper thing, the hearer will most likely not understand what is meant. For example, if somebody suddenly says "I was down at the bookseller's yesterday, but I couldn't get the book" a response might be, "What book?", as the focus is not narrow enough.

The existence of the proper basis of understanding means that the hearer's field of attention is so narrow at the moment of receiving the communication that only one individual (the one meant) is evoked by the 'the-form' (Christophersen 1939:28).

A 'Basis of Understanding' comprising the subjects and things known by both speaker and hearer is necessary. This basis can be transitory or almost permanent, and can be shared by a greater or fewer number of people (Christophersen 1929:72). There can be a direct or an 'indirect association' established in the hearer's mind. For example, when speaking of a certain book we can say 'the author is unknown'. Here the knowledge referred to is 'the book' and as every book has at least one author, the knowledge of 'the book' automatically entails the knowledge that there is 'an author'. The speaker must decide whether the expression that he uses will evoke the right association in the hearer, i.e., whether there is a 'basis

of understanding'. This basis may be created in various ways:

1. explicit context, (the idea in question is called up by means of the same form (i.e., previous linguistic reference). For example "There lived an old tailor in a village. The tailor was known..." The context can be either from the text, or from the extralinguistic situation.
2. implicit context, (the only one present when utterance is made). Certain ideas are so intimately associated that one calls up another; e.g., after mentioning 'the tailor' one can continue 'the man'.
3. situational context, (e.g., the same household entails 'the house', 'the garden', etc.)

The necessary condition for all three, is that the hearer or reader of the 'the-form' is left in no doubt as to what is meant.

According to Christophersen, the main function of the indefinite article 'a' is 'unity'. His notion of unity stems from his definition of a unit-word as "something regarded as single and complete in itself; an individual or unit belonging to a class of similar objects" (Christophersen 1939:26). He says that a phrase with 'a', means only that one unspecified member of the class is meant. It indicates nothing about its individual characteristics; it merely stresses the element of unity already inherent in the word. No previous knowledge is required, so 'a' is neutral regarding familiarity. "No

relation is here established to previous experience outside the idea of the word itself. Thus, the modification given to the potential meaning of the word is slight" (Christophersen 1939:73). For example, "I wonder if you have come across a fellow called James Birch: we were at Eton together.", is 'about one definite person that the speaker knows, and he supposes that the hearer knows him, too. But the neutral 'a' form is used, as it is only a supposition. It does not mark indefiniteness. In the phrase "His father is an MP", 'his father' presupposes definiteness and familiarity and the talk can therefore only be about one definite MP, but if among such persons none has previously been the centre of attention, unity is the only thing that is to be marked. "His father is the MP" would signal identity between "his father" and one definite MP who had previously been talked of.

The main points of Christophersen's thesis are the following. When a positive degree of familiarity is to be indicated, 'a' cannot be used. But 'a' is not just a mark of indefiniteness, because a large number of words, even when indefinite, appear with zero form. Indefiniteness, therefore, is only one of the significates of 'a', while 'unity' (i.e., one of the class) is the other.

Christophersen indicates two distinctions of the articles (familiar/unfamiliar and unital/continuous) graphically in the shape of a pair of co-ordinates (Figure 2.3). 'A' and 'Ø' together serve as a contrast to 'the'.

The positive degrees, numbers 1 and 2, are indicated formally (by 'the' and 'a' respectively). The zero form denotes the notion of continuous object and abstract idea. The zero form alone marks the absence of both familiarity and unity. Every substantive must contain two of these items: 1 & 2 ("The table in the room is new" is familiar and unital), 2 & 3 ("His father is an MP" is unital and unfamiliar), 3 & 4 ("I like wine", is continuous and unfamiliar) or 4 & 1 ("The water in this bucket is rusty" is continuous and familiar).

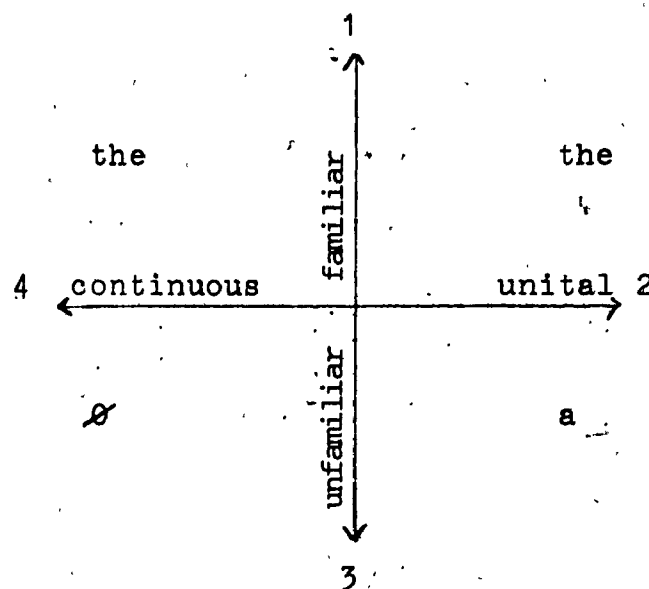


Figure 2.3 adapted
from Christophersen 1939:75

Christophersen elaborates his theory into further details, all of which cannot be dealt with here. Christophersen's notion of familiarity and unity has been referred to in almost every major analysis of the articles and has been praised by many grammarians as the most

comprehensive.

2.4 Jespersen

A better known analysis of the uses and meanings of the articles is that of Jespersen (completed by Neil Haislund) (1949). He makes use of a concept of degrees of familiarity based on Christophersen's theory of familiarity to explain the many possible uses of the articles. He leaves out any discussion of the article in general, stating "it is impossible to cover the whole ground, therefore I must refer for further details to Christophersen for a fuller treatment" (Jespersen 1949:404).

Jespersen's theory of article use takes as its starting point classifications of nouns into unit-words and mass-words (with the subdivisions 'material' and 'immaterial'). Jespersen classifies nouns as follows:

Mass words [he later uses the terms 'uncountables'] are formally characterized by the use of the zero and the definite article. They are distinguished from proper names by these (except in some specially defined cases) being unable to take any article, and from unit-words [he later uses the term 'countables'] being unable to take zero.

	INDEFINITE	DEFINITE	ZERO
UNIT WORD	X	X	
MASS WORD		X	X
PROPER NOUNS			X

Jespersen 1949:404

Jespersen treats all three articles together using what he calls the theory of the stages of familiarity, i.e., "knowledge of what item of the class denoted by the word is meant in the case concerned" (Jespersen 1949:417). Before the speaker or writer constructs a sentence, 'familiarity' about whatever is denoted by a substantive is already in his consciousness (Jespersen, 1949:479). The three stages are complete familiarity, nearly complete familiarity, and familiarity so complete that no article is necessary.

Jespersen details long sections of specific uses of articles giving examples of humans, animals, inanimate things, and exclamations before comparatives, superlatives and ordinals. He does not account for the many different functions and specific uses of the definite article. Also, it is unclear how current some of his examples are, since he cites examples from very early periods of Modern English.

2.5 Structuralism

The structural linguist whose work on articles is most frequently cited is Yotsukura (1970). She attempted to

establish formulae to account for the obligatory and optional uses of articles. On the basis of a large corpus of noun structures appearing in high school textbooks, Yotsukura listed the sequences of articles plus modifiers which occurred, noting only those with the definite or indefinite article. She did not list those nouns which occurred with both 'a' and 'the'. From the sequences, she established a three dimensional classification of nouns: 1) countable and uncountable nouns (for ambiguous nouns such as 'food' the existence of two homophonous nouns, one countable and the other uncountable was assumed); 2) 'abstractness' and 'concreteness'; and 3) definiteness and indefiniteness.

She found 38 formulae, only 17 of which would qualify as a rule. Yotsukura does not account for formulae which give more than one possibility, nor does she consider divided usage or contextual elements. Yotsukura's list is useful in providing grammaticality data but ignores the importance of context in determining the use of the definite article.

2.6 Transformational generative grammar

Transformational generative linguists attempted a formal analysis of the articles. Chomsky says that the transformation for telling when you get 'a' and when you get 'the' is complicated and "I do not know how to state it exactly" (Chomsky in Yotsukura 1979:29).

Postal (1970 in Karmiloff-Smith 1979:29) suggests representing articles as syntactic features of nouns. Article differences in surface structure, he says, should be represented in deep structure by their feature differences e.g. +definite, +demonstrative, +speaker, +singular, +countable, etc. Huebner (1979) discusses noun phrases in terms of two binary features, + specific referent and + assumed hearer's knowledge.

2.7 Psychomechanics

Hewson (1972), discusses Guillaume's psychomechanics as a form of generative grammar. In Guillaumean theory, the indefinite article is said to pick out a particular instance of a concept and then, through the definite article, inductive generalization is made. Hewson interprets this theory as a principle of mental movement from the general to the specific or vice versa.

Hewson believes that articles are in linguistic binary opposition:

Binary contrasts in the grammatical structure of a language are a reflection of a fundamental intuitional mechanism, i.e., the relationship of the greater and the less, the particular and the general...It is axiomatic that we think by contrast. English as a natural language reflects that fact... in the binary oppositions to be found in its lexicon and the grammatical

structures (singular/plural; passive/active)...

The speaker's choice of indefinite or definite article reflects the basic contrast of individual and genus (which is inherent in our thinking) (Hewson 1972:38).

Many transformational grammarians believe that articles are mediated by a binary contrast. However, not all linguists agree. For example, Whitman (1974), takes the position that 'a' and 'the' are, in fact, entirely different syntactic entities, quite unrelated to each other except for the fact that both occur within the same general structure. He believes they are independent and unrelated, and therefore it is misleading to generalize them under one term. In spite of Whitman's position, most writers believe that articles do represent basically opposing notions.

2.8 Speech act approach

There have been various attempts to describe the referential aspects of the articles in speech act terms. Searle (1969, in Hawkins 1978) attempts to formulate the necessary conditions for the successful performance of a definite reference under speech act circumstances. Hawkins (1978) develops a 'speech act' theory of definiteness, the 'Location Theory', in which he attempts to unite semantics, pragmatics and syntactic generalizations (Hawkins 1978:14). Hawkins' analysis provides insight into the complex relationship between these fields, where

article choice is concerned. Also he provides some excellent examples which could be adapted to instruction in article usage.

2.9 Systemic Analysis

The main theorist in the field of systemic grammar is Halliday (1976). In Cohesion in English (1976), he examines the grammatical and semantic links which bind sentences into a coherent and cohesive text. He places the indefinite article in the broader class of 'non-specific determiners'. He believes that the term 'article' is unnecessary because " 'a/an' is simply a non-salient form of the numeral 'one' ". He discusses the 'pro-noun' one, the substitute 'one' and the elliptical 'one' as forms of the indefinite article.

He places the definite article in the category of 'specific determiners', which includes demonstratives. All determiners but 'the' are semantically selective. He describes 'the' as a specifying agent. Its function is to identify a particular individual or subclass within the class designated by the noun (Halliday 1976:70). The information required for identification is available in the situation or in the text.

In exophoric (or situational) reference, the referent is recoverable in a) the specific situation e.g. "Don't go; the train's coming." where the train is interpreted as the train we both are expecting; contrasted with "Don't go;

a train's coming" which is possibly a warning to avoid being run over. The referent is recoverable b) on extralinguistic grounds because there exists only one member of the class of object e.g. "the sun" ii) or because only one member of a class can be assumed "the baby" (our baby); or iii) finally because reference is to the whole class "the stars", or where the individual is considered as a representative of the whole class, e.g., "The snail is considered a great delicacy in this region." Endophoric (or textual) reference can be cataphoric (forward pointing) or anaphoric (backward pointing).

NOMINAL GROUP (a): DETERMINERS

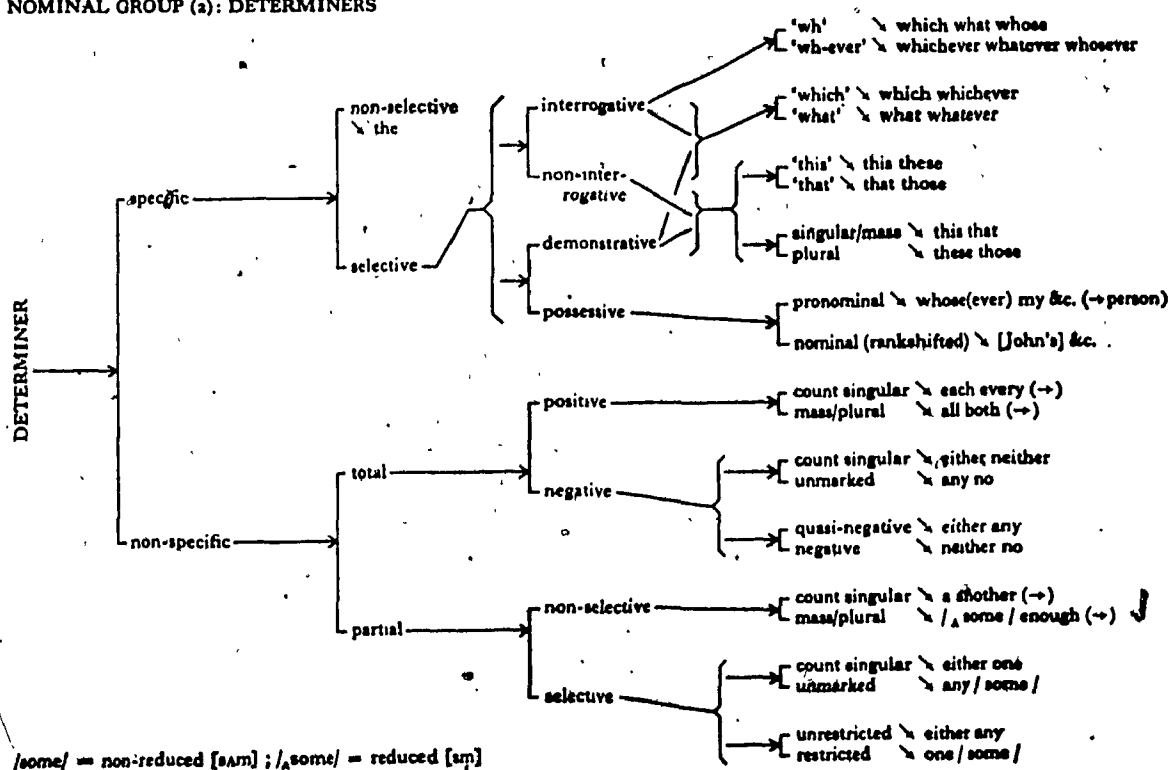


Figure 2.9.1
Halliday 1976b:132

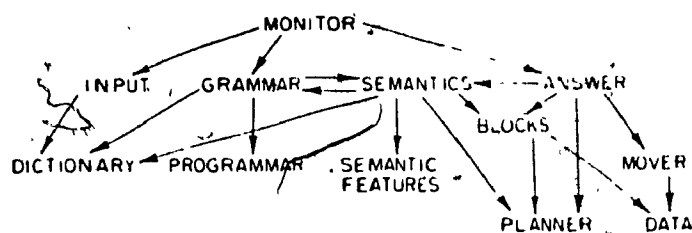
Halliday, in Halliday: System and Function in Language, 1976a, has developed a theory of grammar called 'systemic grammar'. This emphasizes the limited and highly structured sets of choices made in producing a syntactic structure. A basic concept of 'systemic grammar' is the notion of 'syntactic units', i.e., the way a sentence is built up out of smaller parts each with a special role in conveyng meaning. Halliday presents the ESN (English System Network) of determiners (part of the nominal group) illustrated in Figure 2.9.1.

Winograd uses Halliday's systemic grammar to define a network of systems. In Understanding Natural Language, (1972), he describes a computer system for understanding and producing natural language (English). The system answers questions, executes commands and accepts information in an interactive English dialogue. His program can understand language within a special domain. The user addresses a simple robot with a hand and an eye and the ability to manipulate blocks on a table. The steps the system takes in understanding a sentence can be determined directly by special knowledge about a word, a syntactic construction or a particular fact about the world.

Winograd's system incorporates important ideas about syntax, semantics, and problem solving, and concentrates on their interaction. He expresses knowledge as 'procedures written in special languages'. The system contains a

parser, a recognition grammar of English, a semantic analysis and a general problem solving system.

Winograd's language understanding program is organized as shown in figure 2.1.9.2 below. Arrows indicate that one part of the program calls another directly.



Organization of the System.

Figure 2.9.2
Winograd 1972:68

Winograd presents 'system networks' for all the basic structures as the basis for his detailed recognition program. He uses a number of separate word classes which can be divided into subclasses by syntactic features assigned to individual words. He notes that some classes overlap. When the parser parses a word as a member of a certain class, it sorts out those features which are applicable.

With words like 'week' it would look at the semantic features. The distinction here would be between event and non-event. The lists of syntactic features for the determiner (DET) and noun are:

DETERMINER: DEFinite, DEMemonstrative, DETerminer,

INCOMplete, INDEFinite, NEGative, NONUM (no number), NPL (Noun plural), NS (Noun singular), OFD (of and determiner group), PARTitive, QDET (question determiner), QNTFR (quantifier).

NOUN: MASS, NPL (noun plural), POSSessive, TIME (day, month), TIMI (time - one, 'yesterday').

Of the 18 classes he distinguishes, only the verb has more features than the determiner. He states that the different possibilities for the meaning of 'the' are 'procedures' which check various facts about the context, then prescribe actions or procedures. These features also illustrate the number of decisions or 'bits' of information the ESL learner must juggle when deciding which article to choose.

Winograd distinguishes three basic ranks of units: the clause, the group, and the word.

There is a semantic system which describes relationships at three different levels. It first defines the meaning of words, it then relates the meanings of groups of words in syntactic structures and finally it describes how the meaning of a sentence depends on its contexts -- both the linguistic setting and the real-world setting. According to Winograd a person's 'model of the world' is organized around 'objects' (represented by the noun group). These objects have 'properties' (represented by adjectives and classifiers) and enter into 'relationships' (represented by verbs).

Winograd's study illustrates how many sub-systems are involved in article selection and presents them in a clear fashion. His system is a valuable tool for thinking about what we do when we understand and respond to natural language. His treatment of the articles is systematic, detailed, and accurate.

2.10 Reference and Pedagogical Grammars

The reference grammars written by Christopersen (1939), Jespersen (1949) and Quirk (1973) provide long lists of rules of the type "the definite article is used in context X" - followed by pages and pages of exceptions. Very few pedagogical grammars adapted from the reference grammars attempt to deal with the semantic nature of articles (Grannis 1972). Most pedagogical grammars exclude constructions larger than a single sentence, while the information the student needs to use and interpret articles is often discourse related. This restriction makes it virtually impossible to deal with any but the most superficial problems of article usage. Winograd (1972) makes a similar criticism of the artificiality of isolated sentences in computer programming stating:

Much of the structure of language comes from its being a process of communication between an intelligent speaker and hearer, occurring in a setting, which includes a physical situation and a topic of discourse, but also the knowledge each participant has about the world and the other's ideas (Winograd 1972:153).

This communicative situation is seldom stressed in pedagogical grammars.

Another criticism of most pedagogical grammars is the use of complex terminology to describe the articles.

Further, this terminology is not consistent from one grammar to another. For example the terms familiar/unfamiliar, definite/indefinite, general/particular, abstract/concrete, specific/nonspecific are all used to describe the the same features. Perhaps because these concepts are so difficult to explain, little explanation is given. Learners from language backgrounds that do not express these 'concepts' by the use of a system similar to the English article system have great difficulty when told that 'the' is the definite article. They may not know what 'definite' means. Indeed, whole volumes have been written by Kramsky (1972), Hawkins (1978), Christophersen (1939) and others to try to explain the concept of definiteness.

2.11 Instructional Materials

Pica (1983), in an excellent review of ESL instructional materials, found many inaccuracies in the presentation of article rules to the ESL learner. She found that patterns of article use could not be correctly or completely described by the rules of article use presented in the instructional materials. Many of the rules presented were incomplete or incorrect. For instance:

Use 'a' for introductory mention of an item,
 followed by 'the' for second mention:
 is often followed by sentence level examples such as,
 His car struck a tree.

You can still see the mark on the tree. (Thomsom and Martinet in Pica 1983:84)

This type of example, when demonstrated at the sentence level, lends itself to grammatically correct counterexamples. For example:

His car struck a tree.

He was surprised to see how much damage a car could do to a tree.

Pica seldom found this pattern in actual discourse. She reports that of 23 occasions in which a researcher asked for directions to a place introduced with 'a', for example, "Can you tell me where I can find a drugstore", participants never responded using 'the', but replied with 'proforms' such as, 'it', 'one' or even 'a'.

Another example from Pica is the rule:

'the' can be used with a first mention item if the item is familiar or identifiable to both speaker and listener.

The problem with this rule is that many students cannot decide if an item is mutually familiar to their listeners. Pica found that article use appeared to be related to a participant's familiarity with an item referred to, but in fact was a complex of each participant's interpretation of each other's previous experience, immediacy and visibility of the referent, and scope of a given setting. In other words, a strong cultural component is necessary for correct article use and this cannot be accounted for by rules such

as the above. Pica believes that a key to ESL students attaining proficiency in article use lies in developing awareness of variations of article use within communicative contexts.

2.11.1 More Recent Teaching Approaches

There have been some recent books, for example, Leech and Svartik (1975), and Close (1981), which attempt to tackle teaching the article through a functional approach. Such works also provide long lists of rules. Close, for example, in English as a Foreign Language (1981), presents 58 points covering 22 pages. Such detailed explanations are likely to overwhelm the learner. There have also been some teacher-oriented articles based on a more or less functional approach (Acton 1977, Hok 1970, Grannis 1972, Whitman 1974). These have appeared in journals directed to ESL teachers, but are not easily accessible to students.

In A Conceptual Framework for Teaching Articles in English (1977:58), Acton attempts to interpret certain theoretical insights on language functions as well as more traditional structurally-based approaches to teaching articles so that they are directly applicable to the problems of teaching. He suggests a conceptual framework of article use to help the learner understand why articles work the way they do, and help him predict which article should be used in a given context (Acton 1977:58). Acton's model is shown in Figure 2.11.

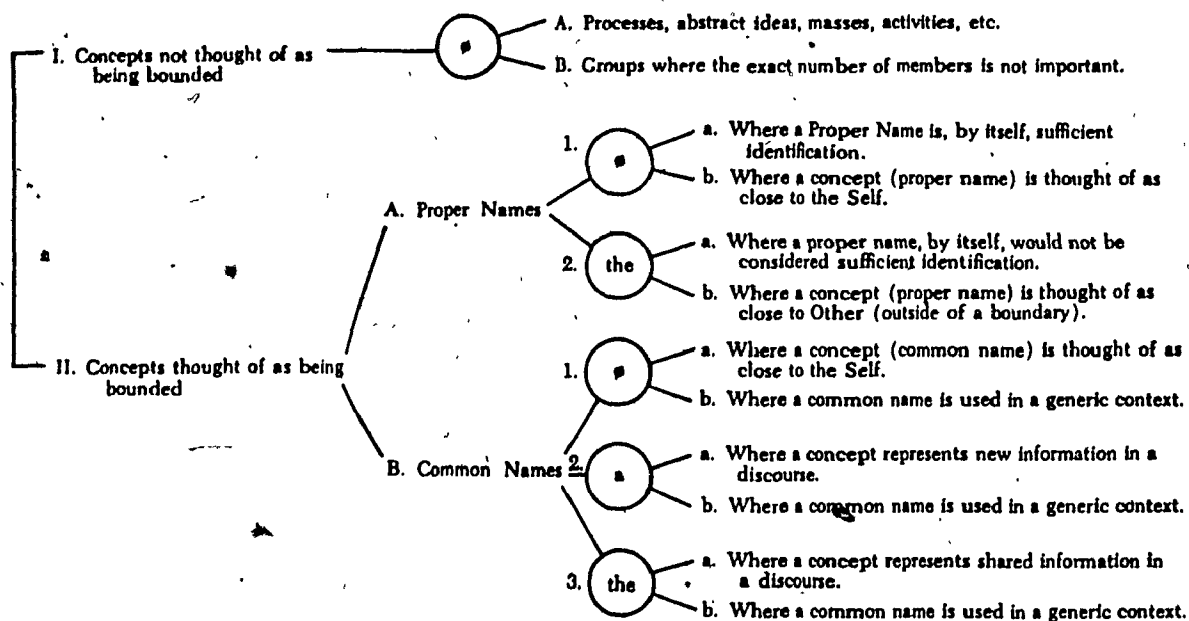


Figure 1. A Conceptual Framework for Article Usage.

Figure 2.11
Acton 1977:59

Acton emphasises that his model "must be thought of as representing a set of relationships...and to be maximally effective the system must be viewed in its entirety, as a whole, not just as a collection of rules" (Acton, 1979:58). Therefore, the scheme does not operate only from left to right, or vice versa. He intentionally de-emphasizes the use of directional statements like: "Use X in this situation". Acton presents visual representations to illustrate four closely-related functions of the system of articles. The first function of articles is the 'bounded/unbounded

concept', i.e., articles signal that conceptual boundaries (similar to the concept of concretization) have been imposed upon or placed around ideas so that they can be treated as objects or units. Acton explains that once a native speaker of English conceives of something as being an object, or having a boundary, he can then count it and/or mentally separate it from something else (Acton 1977:60). This is the traditional count/non-count distinction. The boundaries, of course, can be physical or mental, as in "Boris had a vision". Boundaries, Acton notes, can shift.

The second function of articles is 'the bounded distinction' (the traditional definite/indefinite distinction). The article 'the' indicates that the speaker assumes a given concept is sufficiently clear and well identified that the listener can separate it from all others like it. Acton says this concept of boundaries explains the difference between the first two functions of articles.

The third function of articles, according to Acton, is to indicate which type of generic is intended. There can be one, two or three different boundaries involved in generic usage. In the sentence "Oranges are round" the relevant boundary includes 'all oranges in existence'. The boundary thus establishes the existence of a set of objects. In the sentence "An orange is round" there are two boundaries -- one around the group or set 'oranges' and

one around an individual. This is commonly called the 'typical' or 'representative' usage. In the sentence "The orange is round" there are three boundaries; one for existence, one for individual plus an additional separating boundary.

The fourth function of articles is to indicate distance from 'Self versus Other'. This is similar to Jespersen's notion of "familiarity". He explains this as considering "whether or not the speaker and listener are thought to be inside or outside of the boundaries of some group or institution" (Acton, 1977:64). The general rule is "If an object(s) is conceived of as close to Self, then no article is used; if something is closer to the Other (outside a boundary) the definite article is used" (Acton 1977:64). For example, one of the natives would probably not say "The natives are restless tonight". The sentence suggests that the speaker is not a native.

Acton suggests that the teacher go through Figure 1 with numerous examples for advanced students; but for less advanced students he suggests using only small pieces of the presentation--in conjunction with both inductive and deductive instruction in articles and related grammatical units.

Acton believes that in teaching articles advanced students are capable of benefitting from conscious attention to the pragmatics or situational aspects of articles in ways that are well beyond the beginning

students. He suggests the most effective focus for teacher input to the learner is to progress from discourse to isolated sentences.

Classroom teachers will find some of Acton's teaching suggestions very valuable. The model outlined in Chapter 4 of this thesis makes use of some of Acton's suggestions.

2.12 Insights from Language Acquisition Theory

It takes time to acquire the forms and meanings of one's first or second language system. This section will focus on insights from language acquisition theory. Specific syntactic and semantic problems will be discussed in Chapter 3.

2.12.1 Phonetic Problems

In order to gain control of the articles, the listener must isolate and recognize them in the stream of speech. This is not a trivial problem. 'A' in normally spoken native English speech is often reduced to an unstressed schwa, and is so closely linked to its following noun phrase that 'morpheme boundary perception' becomes quite difficult (Bickerton, 1981:149). This segmentation problem with spoken English makes it difficult for the ESL learner to determine the functions of the articles, because if the learner does not hear the articles in spoken speech, he is unlikely to ascertain their functions. To help alleviate this problem, special exercises in aural recognition should be integrated into instruction.

2.12.2 Language Distance and Language Transfer

Conceptual problems caused by 'language distance' also affect article usage (Hewson 1972, Acton 1977, Hok 1970). Much of the literature on the subject states that Slavic, Oriental and Indian ESL learners have great difficulty with article usage. This is not surprising, because not all

languages have articles. In some that do, for example French, article usage doesn't always correspond exactly to the English.

While the articles may be absent from some languages, the functions they fulfill, such as marking definite/indefinite reference, are not. They can be marked through a variety of different means.

Kramsky, in a cross-linguistic typology of 300 languages (1972), classified languages according to definiteness and indefiniteness (he uses the terms determinedness and indeterminateness). He distinguishes seven main surface devices for expressing the category of definiteness. These are: independent words, independent words to express one member of the category and an enclitic or proclitic to express the others, clitics to express both members, flexion on nouns and adjectives, prosodic means, word order and languages in which the category is inherent in the noun itself. Kramsky comments "No other category is characterized by such a diversity of formation and semantic prominence" (Kramsky, 1972:9).

The Sapir-Whorf hypothesis of linguistic relativity holds that different languages indicate the same objective realities with different linguistic markers, leading to the belief that people perceive these realities differently, depending on the linguistic categories which are specific to their language (Whorf, 1931, in Landa, 1976:210).

Dale (1976:240) provides the following example of

this. If an English speaker sees a stone falling he will analyse the situation into two parts: 'the stone' [or 'a stone'] (noun) and the act of falling (verb); he will produce a sentence like "The stone falls (is falling, fell)": whereas a Russian speaker might wonder why it is necessary to specify whether the stone must be conceived of in a definite or indefinite manner. To him 'stone falls' is acceptable. A Chinese speaker, on the other hand might describe the situation with "stone fall"; while a Nootka speaker might say "It stones down". Instead of analyzing the situation into object and activity, he would select a generalized notion of the movement of a particular class of objects and a direction.

Bickerton (1981) compares the article system of modern English with that of Guyanese Creole to demonstrate how semantic incongruity can affect article choice. The (Guyanese system is shown in Figure 2.12.1.

In this system the specific/non-specific distinction (SNSD) divides the entire semantic area, with zero on one side and some marker or other, on the other. The presupposed distinction (presupposed in this context refers to information shared by speaker and listener) divides only the +specific area. In the English system shown below only one quarter of the "semantic space" is divided by zero (Bickerton 1981:247). Not surprisingly, Creole speakers often omit 'a' in compliance with their own semantic

system.

SEMANTIC SPACE FOR GUYANESE ARTICLES

P = presupposed
S = specific

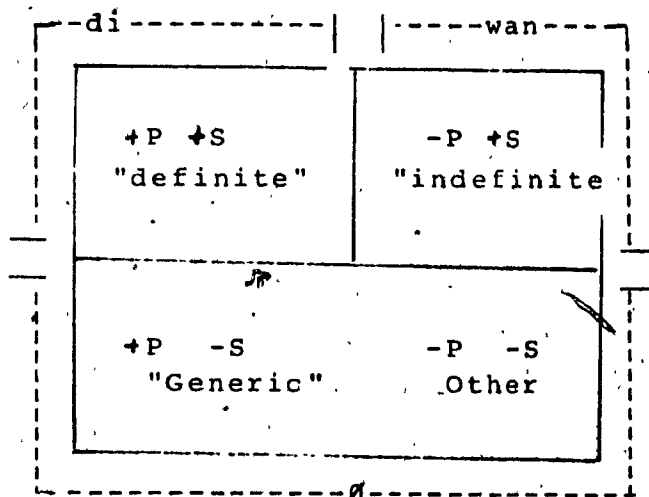


Figure 2.12.1
Bickerton 1981:247

SEMANTIC SPACE FOR ENGLISH ARTICLES

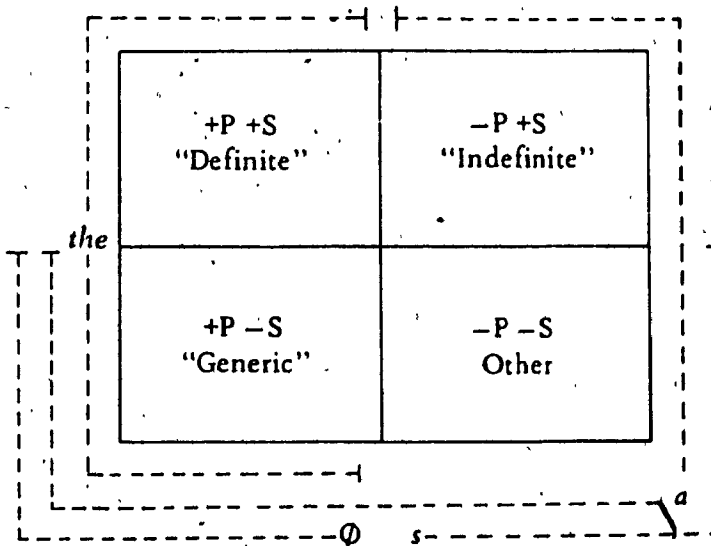


Figure 2.12.2
Bickerton 1981:249

There is other evidence that conceptual problems caused by language distance affect article choice. Landa (1976), comments that a major difficulty in learning a language is learning to think in the conceptual categories of the people whose language is being studied. Acton (1977), explains how the English article system reflects something of the way English speakers categorize the world and how:

To be able to choose between using no article or the definite article often requires a thorough concept of Self. Many cultures are much less prone to putting boundaries on concepts. To isolate or fence in an idea, that is to treat it as an object, may be to think about it very differently [Whorf 1951, in Acton]. For many students of English as a Second Language that process is quite alien to their own way of categorizing experience (Acton 1977:72).

Linguists of the contrastive analysis school argue that L2 learners will experience transfer difficulties (i.e., the intrusion of features from one language into another) with those aspects of the language where two language systems deviate.

Although some research tends to downplay the role of transfer in favor of "universal errors", there is ample evidence to indicate that transfer is an important factor in language learning, particularly in the learning of

articles in English (Duskova 1969)..

2.12.3 First Language Acquisition

Even native speakers of a language containing articles take some time to master the article system. For example, Karmiloff-Smith (1979) noted in a study of 1000 native French speakers that, although articles are amongst the earliest markers to appear in the small child's language corpus, some aspects of article usage remained unmastered in older children. She cites an example of a child 7.9 having difficulties with the generic functions of 'the'. Zehler and Brewer (1982), in a study of English L1 children, note that children as old as 3.1 have difficulties using 'the' correctly. They attribute this difficulty to an overextension of a principle of shared knowledge found in adult article use. Maratsos (1976) found that children of 3 to 4 years tended to point, or to use the slightest distinguishing features to make deictic reference, rather than use 'the'.

While we cannot form firm conclusions about teaching from language acquisition data, we can see that even with native speaking English and French children, article acquisition occurs slowly over a number of years. It also appears that generic usage, the familiar use of 'the', cataphoric, and anaphoric reference functions of 'the', are acquired late in both English and French L1 learners.

We should, therefore, not be surprised that ESL

learners have difficulties with articles. A reasonable conclusion from language acquisition studies is that instruction in the use of the article should be spread over a period of time, as it is the final result of a developmental process.

2.13 Conclusion

This chapter has described some of the major linguistic works dealing with articles in English. Although these analyses give us insight into the way articles work, teaching article usage remains a serious problem.


Selecting the correct article is complicated because there are very few settled rules available for all cases (Jespersen, 1949:404). The only syntactic rules we can give with any certainty are: articles precede nouns, 'a' cannot be used with plurals, and 'a' and 'the' cannot co-occur (*a the chicken).

The reason for the small number of relevant syntactic rules is that syntax and semantics overlap. What are generally termed syntactic rules for article usage depend upon noun classifications, which necessarily involve semantics. Syntax alone cannot determine the choice of article. Both 'the' and 'a' can be used with exactly the same constructions, for example, "I want a room" and "I want the room". However, the meaning is different. The problem for the learner is how to master article usage

using noun classes that require knowledge of the articles as a starting point.

Landa suggests algorithms as effective tools to help learners begin to think in the conceptual categories of the second language. In Chapter 3, some insights from the above ~~works~~ will be incorporated into an algorithm for teaching the English article system to learners of ESL. The model to be presented in Chapter 4 will ~~integrate~~ techniques suggested by Landa with those of Halliday and Winograd.

Neither Halliday nor Winograd, however, provides a complete description of articles. Jespersen, Acton, Kramsky, Hewson, Yotsukura and Hawkins all refer to Christophersen's analysis as the most comprehensive. In addition, Christophersen's analysis has the advantage of discussing articles largely in terms of binary features which he calls familiar/unfamiliar and unital/continuous. This is useful because one of the first steps in constructing an algorithm is to ask questions which divide the remaining possibilities in half. For this reason, Christophersen's description will serve as the basis for the analyses of the article system and this will be used in construction of the algorithm.



CHAPTER 3

Research Methods

3.1 Description of Procedure for Making the Model

3.1.0 Introduction

Some of the semantic and syntactic concepts and problems involved in article usage were discussed in Chapter 2. To solve some of the associated learning problems, Landa (1976) has suggested using algorithms as a tool which can teach thinking in the conceptual categories of a second language. The basic procedures involved in constructing an algorithm as suggested by Landa and Wheatley as well as some of the notions utilized by Winograd and Halliday in constructing models of language systems will now be discussed.

The first problem in constructing an algorithm, as mentioned by Landa, is analyzing grammatical phenomena precisely. The second problem concerns how these phenomena can be broken down into their elements so that they can be represented algorithmically.

3.1.1 What is an algorithm?

Present uses of the word 'algorithm' are derived from theoretical mathematics, where it means "an exact prescription defining a computational process that leads from various initial data to a desired result" (Markov, 1961 in Wheatley 1972). "It is in fact a mathematical recipe" (Wheatley 1972:1). The algorithm is used as a

means of plotting the strategy of problem solving in computers, where a computer is made to work through a set of procedures, i.e., an algorithm, to achieve a desired result.

The mathematical recipe meaning of an algorithm has been extended to cover a recipe in any field of activity (Wheatley 1972:1). In the context of programmed instruction, an algorithm is a system of instructional commands specifying the procedures which must be performed in order to solve a given problem. In this sense an algorithm is a purely practical device. It is a performance aid. Algorithms have been used as the basis of structuring and sequencing instructional programs (Romizowski, 1981; Dick and Carey, 1978; Wheatley, 1972). It is asserted that people can work through algorithms and be led to a decision or the solution of a problem (Wheatley 1972). The process of working through an algorithm is at first conscious, but, with practice, can become unconscious (Landa 1976:198).

Algorithmic processes can be described verbally, symbolically, graphically or through list structures, logical trees, decision-logic tables or flow charts (Wheatley 1972). The model for article use to be presented in Chapter 4 will utilize the flow chart format because it represents the article system in an organized visual way. Though equivalent to a list of rules, a visual representation, as some research and experience indicates, is

potentially a more meaningful yet coherent piece of language data (Acton.1977:58). Some research indicates that organization is necessary for memory (Mandler, in Hok 1970:231). As a flow chart is an effective means to depict the organization of a system, the rules for article use will be presented in a flow-chart format.

3.1.3 Description of procedure for making the model

The pioneer in teaching grammar by means of algorithms is L. Landa. In Algorithmization and the Learning Process (1976), his work was concerned with the "intellectual operations" or "cognitive processes" in the learning of Russian grammar. He says that the first problem in constructing an algorithm is to analyse instructional phenomena precisely. This includes an analysis of the knowledge, skills and habits which the learner should assimilate to solve a specific language problem (Landa 1976:349). To do this, it is necessary to analyse the cognitive activity or processes into elements or steps, broken down where necessary into more elementary operations. These components may be either specific images and concepts or discrete intellectual operations. Some of the 'images' or concepts (such as boundaries and substantiation), which the English language learner should assimilate, were mentioned in Chapter 2.2. These will be analyzed in the next section.

The problem of which article to use can be represented

as an algorithm or a sequence of algorithms, and can include comments and illustration (Edwards, 1967:28). As an algorithm may contain both questions and instruction, the model in Chapter 4 will utilize these and visual illustrations to explain the uses of articles.

In constructing an algorithm, Wheatley says that the best question to ask is one in which the possibilities are divided into two parts (Wheatley 1972:14). An example of this halving process in an everyday problem solving situation, is the following conversation.

"Whom do you think got a raise?"
"Male?"
"No".
"Does she work in this department?"
"Yes."
"It must be Barbara".

Many linguists have suggested that the use of articles involves opposing binary notions (Hewson, Hawkins, Christophersen). For example, is the noun unital or continuous? Is it familiar or unfamiliar? Is it a count noun or a mass noun? This binary notion will be adopted for the creation of the model in Chapter 4. The series of semantic and syntactic questions which must be asked to determine the correct article will be ordered hierarchically.

3.2. Analysis of the Articles

It must be emphasized from the start that articles are not the only means of making a word definite or indefinite. Possessive and demonstrative pronouns also convey these meanings. However, the focus here is only on the articles, 'a', 'the', and \emptyset .

As far as can be determined from the literature, the crucial factors that must be taken into account to arrive at an accurate description of article use are the following: 1) the function of articles in sentence structure, including consideration of the noun and determiner groups and their relations to each other; 2) the system of noun classes, class membership and class relations, which include singular/plural and count/non-count distinctions; and 3) the semantic notions of familiarity (sometimes known as definiteness, determinedness) and unity (sometimes known as individualizing), and concretization (sometimes known as substantiation, boundaries, objectification).

Each of the above mentioned functions will be discussed below.

3.2.1 Function of Articles in Sentence Structure

English sentences have two main components: the Noun Phrase (NP), which has the Noun (or pronoun) as its nucleus and the verb phrase (VP) which has the verb as its nucleus. The head element of a NP can be a person or an object

(represented by a noun or pronoun). Halliday says head elements are "participants" in some process. The NP may also include a series of determiners (DET). A determiner may precede a NP containing a common noun. Halliday views a determiner as a 'possessor of some entity'. The determiner group includes demonstratives, possessives and articles. Some of these may function as head elements, but the articles cannot. 'The' and 'a' can serve to identify a particular individual or subclass, but only through dependence on something else (Halliday 1976:71). 'The' indicates that the item in question is 'specific' and 'identifiable'. The information can be sought in the situation or the text. Winograd (1972) explains the syntax of the noun group (NG) through the slot and filler analysis as illustrated below:

DET	ORD	NUM	ADJ	CLASS	NOUN
The	first	three	red	fire	-hydrants

adapted from Winograd 1972:

Except for the noun, which gives the basic information about the object(s) referred to by the noun group, most slots are optional. The first few elements in the NP, the quantifiers and determiners, "work together to give its logical status", i.e., whether it refers to a particular object or set of objects. Whether a NP has a determiner, and what types of determiner it has, is of key importance

in the meaning of the NG and the way it relates to other units (Winograd 1972:58). There has to be agreement in number between the determiner and the noun. Winograd represents the noun group as a part of the larger noun network, illustrated in Figure 3.2.1.2:

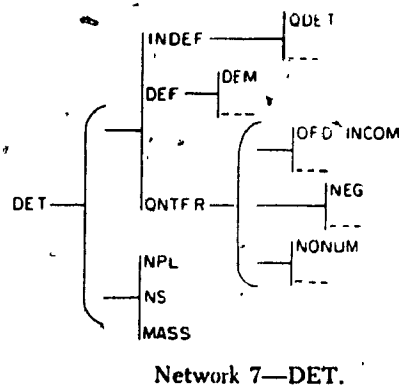


Figure 3.2.1
Winograd 1972:68

3.2.2 The System of Nouns and Noun Classifications

Linguists usually group nouns into several different classes, distinguishing these by formal criteria, including the uses of articles. There is often more than one representation for any given concept and nouns may, under certain circumstances, take more than one of the articles. For example, continue nouns, which normally appear with zero article can take an 'a' or 'the' form; for example, "The surface of the earth is 80% water," but, "He drank the water." Also, a given noun can belong to more than one class. For example, the names of trees, which are usually unit words, become continue words when they denote the

names of wood as material, as in "an oak", as opposed to "Oak is a hard wood". What matters "is that they are conceived of as different" (Christophersen 1939:27). Christophersen says the distinction between noun classes "is not absolute but represents different modes of apprehension." (Christophersen 1939:27). He classifies nouns into 4 classes:

1. Continue words and plurals: 'zero' and 'the' forms.
2. Singular unit words: 'a form' and 'the form'.
3. Uniques 'the form'.
4. Proper names 'zero form'.

He then classifies nouns according to whether or not they are preceded by the article, and whether or not they take the plural form. As the 'a-form' is not used in the plural, there are only five possibilities. Many words have normally no zero-form, while others have as a rule neither 'a-form' nor plural. Still others have only one form. He calls these noun classes types 1,2,3,4 and 5. Graphically the types look like this: (Christophersen 1939:24):

1	2	3	4	5
cake	-	butter	John	-
a cake	a book	-	-	-
the cake	the book	the butter	-	the equator
cakes	books	-	-	-
the cakes	the books	-	-	-

Christophersen believes that it is improbable that the

differences between the above mentioned types of nouns is a purely mechanical one. "There must be a psychical distinction underlying it" (Christophersen 1939:25). He says that there is a psychological distinction between unit-words (type 2) and continue words (type 3). He explains this through the concept of 'limits'. Below is a summary of Christophersen's remarks on the five types.

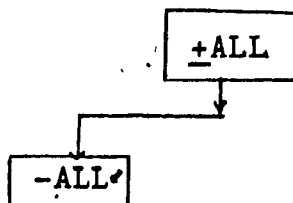
3.2.3 Continue words

"A 'continue-word' represents something apprehended as continuous and extending indefinitely in space and time" (Christophersen 1939:26). Attention is focussed on the genus, irrespective of the amount represented. It is in a way a generic form. Continue words due to the "vagueness of their quantitative delimitation" are not divisible into individual units and therefore singular and plural is alien to them from a "purely psychological point of view" (Christophersen 1939:27). As continue words usually appear in the singular form, they cannot take 'a'. Examples of continue words are material: -- 'butter', 'water'; immaterial: -- 'music', 'leisure'. The general rule is that continue words use zero form when the thing meant is viewed as unlimited or has imprecise limits, then it stands for a general idea about a continuous object (Christophersen 1939:33). An example is, "Milk is good for you". Because the focus is on the whole class, continue words will be represented in the algorithm thus:

+ALL

There are some nouns which English usually considers as continue words, but which do not fit Christophersen's definition of indivisibility very well: It is quite difficult to justify to the L2 learner that 'rice', 'beans', 'oats' are continue words (normally), but that 'potato', is not. These nouns cause great difficulty to English L2 learners. As the above description does not apply very well to them, these nouns would have to be taught as exceptions to the general rule.

Continue words may, on occasion, take the 'the-form' to denote something of less extent than the whole genus for example, "The art of 17th century Europe" (Christophersen 1939:41). Here attention is focussed on a definite part of the continuous whole with precise limits, time or otherwise (this is similar to Acton's concept of boundaries). The part focussed on is often associated with special qualities that do not belong to the genus as a whole; for example, "The air" (in this room) is smokey." The part of a continue word 'marked off' does not become a unit, i.e., a member of a class of similar objects. The conditions for use with 'the' correspond exactly to those for unit-words, with respect to a shared basis of understanding (see 3.2.12). When continue words are used in this way, they fall under the -ALL frame. Sub-frames would explain the deviation from the main rule.



The air (in this room) is
smokey.

3.2.4 Unit-words

"A 'unit-word' calls up the idea of something regarded as single and complete in itself, an individual or unit belonging to a class of similar objects" (Christophersen, 1939:26). It is viewed as a point and has precise limits. Unit-words may be material -- 'girl', 'house', or immaterial -- 'day', 'hour'. 'Unit-words' can be counted, and thus the term 'count' will be used in the construction of the algorithm and represented thus:

+COUNT

Unit words can be singular (one) or plural (more than one) (see 3.2.8). Unit words may take 'the' or 'a' article forms, as in 'a girl', 'the girl'. Christophersen explains the difference between these two forms through his theory of familiarity (see Chapter 3.2.12). Unit words present a problem in that they can act as continue words if the reference is to the whole class. For example, "Cars pollute the environment". Whether a noun behaves as a unit-word or a continue word depends upon the 'mental position' adopted by the speaker, i.e., the form of the idea

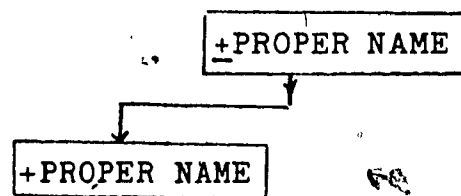
which he wishes to express.

3.2.5 Uniques

Some grammarians set up a separate class of 'uniques'; Christophersen, however, does not. He places them under 'unit-words' saying that they are in a way only subdivisions of these, because uniques require a 'the-form'. Therefore, in principle, there is no difference between uniques and ordinary unit words (Christophersen 1939:30). Because they take 'the', familiarity, which presupposes delimitation and definiteness, is indicated. Another reason for not representing them as a separate class is that uniques (excluding proper names) may not always be unique. The situation may change. For example, English speakers generally consider 'the moon' a unique. But the planet Jupiter has several moons. Therefore a conversation about Jupiter would not refer to 'moon' as a unique. Interpretation, thus depends, upon the situation (see 3.2.11). Finally, the indefinite article can be used with uniques in some situations; for example, 'a moon' is possible. In the model developed in Chapter 4, uniques will not be represented as a separate class. They will appear under the \pm ALL frame of the algorithm. The question to be asked is, "Is the noun +ALL?" There is of course an argument that a word like "the equator" is in a one member class and therefore we could answer +ALL, which in fact, could be argued. However this would not account for the "familiar" notion in the word.

3.2.6 Proper Nouns

Proper nouns refer directly to 'existents'; they are always concrete and represent real people or places. They have substance themselves. Christophersen says that proper names (and their pronouns) have unique reference (or at least unique in a given context). For example, 'Europe' refers to a given continent, and 'Sarah', in a given context, refers to one particular person. A proper name, says Christophersen, "has definite limits and calls up in the hearer's mind the memory of previous experience of a similar nature" (Christophersen 1939:67). Proper names will be represented in the algorithm thus:



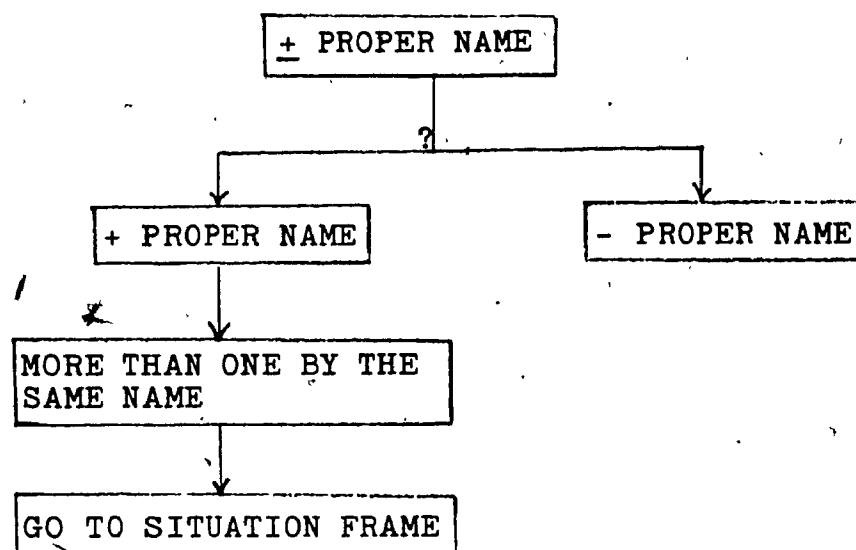
Proper nouns normally do not take articles. However, proper nouns can act as common nouns and take articles if there is confusion between 2 things of the same name, for example:

I know Jane Fonda (the famous one)
 I know a Jane Fonda (not the famous one, another one)

Proper names can also convert into common nouns to distinguish between two aspects of the same thing.

Vancouver is a beautiful city
 The Vancouver I know is a cold damp and depressing city.

Exceptions such as those mentioned above will be dealt with in a sub algorithm. Thus:

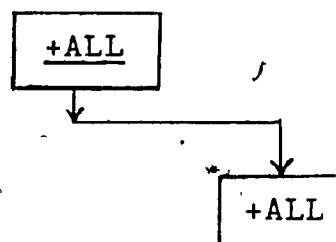


Christophersen provides a detailed section on uses and exceptions of articles with proper nouns. However, Quirk's classification (1973) is even more detailed and therefore could be more useful for the instructional frames of the algorithms.

3.2.7 Generics

In generic usage, 'all members of the class' is the referent. All three articles can be used generically: in "Dogs are vigilant animals", reference is to all members of the class 'dog'. In "A dog is a vigilant animal", the class is thought of as a unit represented by one of its members. In "The cat is not vigilant but the dog is", no one cat is represented; the phrase does not call up the idea of any particular individual. Although all three

articles can be used generically, the generic 'the' form is used chiefly with types of men, species of animals, plants precious stones, and cultural products. The generic 'a' form is more common but is often only a 'masked individual use' (Christohersen 1939:130). The context determines whether an individual or an entire species is meant. Generics will be placed on the +ALL side of the algorithm to indicate that all members of the class is meant. Thus:



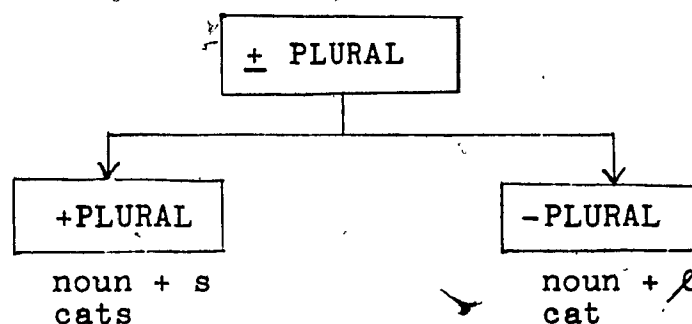
3.2.8 Plurals

Plurals, like continue words, convey the impression of something with indefinite limits (Christophersen 1939:36). Quantity is irrelevant. What is relevant is the generic or class quality. Unlike continue words, plurals are countable. Plurals can take the zero form to indicate the whole class "Cats make good pets", or may take the 'the' form to indicate an indefinite quantity (less than the whole class). For example, "Mr. Jones asked if the cats had had their shots yet". The general rules for plurals are that they cannot take 'a' and plural nouns require an 's' morpheme.

There are times when even continue words can be plurals, in, for example, "The Canadian wines were rated

poorly by the judges". There are nouns, which in English appear in plural form (for example, 'scissors', 'news') but which, in fact, are singular. There are also nouns which occur only in the plural ('cattle', 'sheep'). These special cases would need to be pointed out to the L2 learner.

In the model, plurals will be represented as a class feature rather than as a noun class, because the focus is on whether reference is to one or more than one noun. Thus nouns can be:



3.2.9 Summary

In this summary of Christophersen's classification 'a', 'the', and \emptyset , can all appear with all semantic classes of nouns. 'A' cannot appear with a plural. However, plurals are not represented as a semantic class but rather as a feature of a class. Christophersen explains the difference between the three article forms as a result of two distinctions: familiar/unfamiliar, and unital/continuous. These concepts will be discussed in 3.2.10 to 3.2.13.

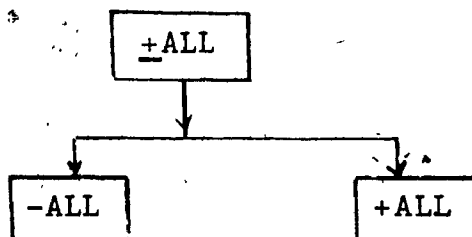
3.2.10 Unity

The first function of articles when added to nouns has been variously described as actualization, concretization, individualization, differentiation. Christophersen uses the term substantiation. He calls nouns which take articles unitals, and nouns which do not (normally) continuous. In essence the function of 'a' and 'the' when added to nouns (except proper nouns) is to make reference to a unit within a class (i.e., a specific realization with definite limits or boundaries), while a noun without an article refers to the whole class, i.e., the idea of the noun, without substance or specific boundaries.

Hok, in The Concept of 'General/Specific' and its Application to 'the', 'a', 'some, and 'any' (1970), defines this concept as one basic to human thought. She says that the speaker's choice of articles depends upon a 'repositioning process' in which things are viewed either macroscopically, i.e., a category unto itself; or microscopically, i.e., a unit within a category, or as separated from other categories. The function of articles is to indicate which view is taken. This explains why count nouns can become non-count nouns.

In the model to be presented in Chapter 4, nouns viewed macroscopically (continuous, or without definite limits) will be represented by the term +ALL, while things viewed microscopically (i.e., as units or specific realizations with limits (or boundaries) will be

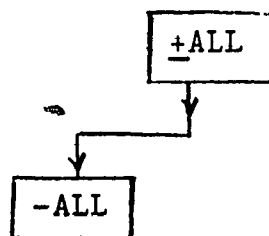
represented by the term -ALL. Illustrations and explanations will be required in the instructional component of the algorithm. A general rule (with exceptions noted in 4.5), is that +ALL nouns require zero article.



Corn was planted
in the summer.
He bought a pen.
He bought the pen.

Corn was planted in summer.
Pens are useful.

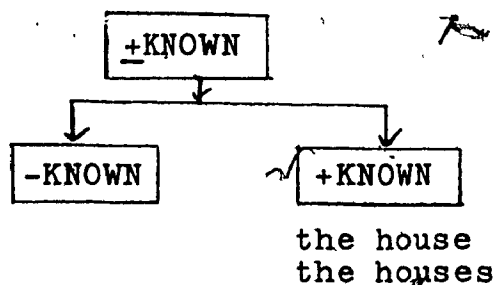
Christophersen explains the difference between the articles 'a' and 'the' in terms of their functions. The main function of 'a' is unity. A phrase with 'a' means only that one unspecified member of the class is meant. It indicates little about its individual characteristics. A noun with 'a' has been 'delimited' from the rest of the class. It is therefore not the whole class. We can represent this element of unity in our algorithm thus:



She bought an apple.

3.2.11 Familiarity

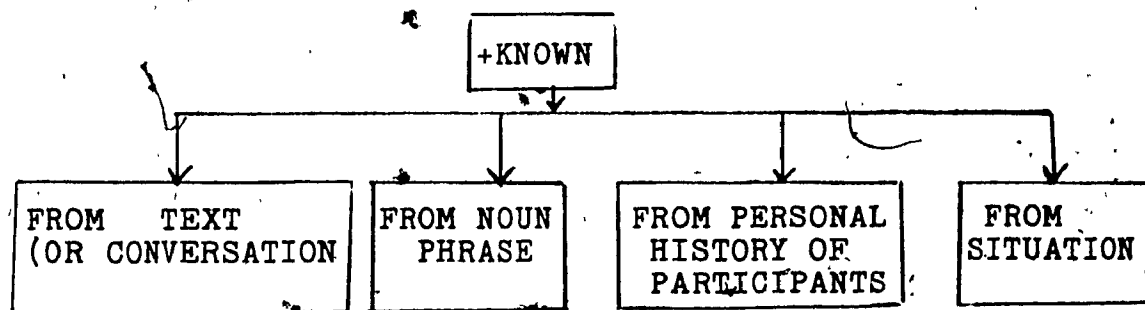
Familiarity is the second semantic concept associated with article usage. It has been variously described as definite, specific, and differentiated. "The definite article makes explicit extralinguistic reference"; 'the' means "the thing you know", i.e., something known marked off with definite limits (Christophersen, 1939:70). Familiarity means that when using 'the', the speaker must not only know which individual he is thinking of but also suppose that the hearer knows it too. That is, the 'the' form should call up in the hearer's mind the image of the exact individual that the speaker is thinking of (Christophersen 1939:28). The notion of familiarity will be represented in the algorithm with the symbol +KNOWN. Thus: "Do you and your hearer 'know' what the noun refers to?"



This is a difficult question for many L2 learners to answer because discourse variables such as the listener's likely knowledge of particular referents affect the answer. The learner would be directed to a sub-algorithm where explanations and examples would be provided.

In order to determine if a noun is familiar, the speaker must decide if there is 'a basis of understanding'. This means that the hearer's field of attention is so narrow at the moment of receiving the communication that only one individual (the one meant) is evoked by the 'the-form' (Christophersen 1939:28). A 'basis of understanding' may be created in various ways. Christophersen discusses three bases of understanding: explicit context, implicit context and situational context. These three are not essentially different. "The only necessary condition is that the hearer or reader of the 'the' form is left in no doubt as to what is meant by it" (Christophersen 1939:30).

Acton's conceptual framework (1977) elaborates on Christophersen's basis of understanding and also incorporates some of Hawkin's examples and terminology. Acton's treatment is more suitable to the algorithm than is Christophersen's. Acton breaks down the situational context into four parts shown below.

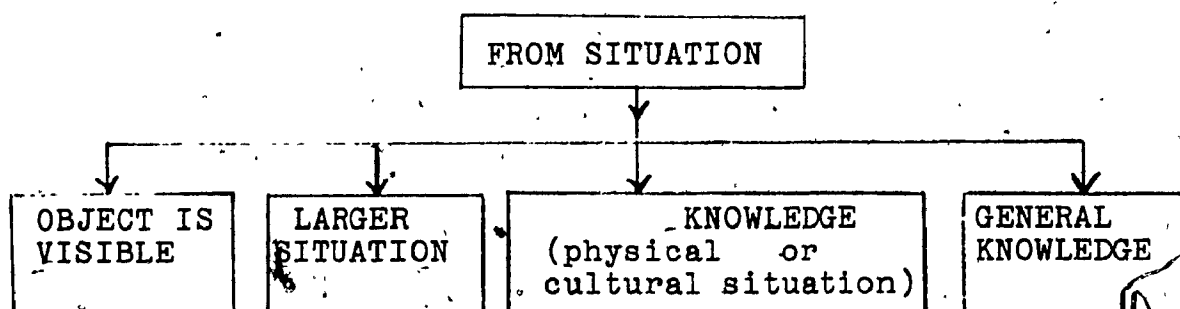


adapted from Acton 1977:70

The first frame is the 'previous mention function'. For example "Montreal has a famous mayor. The mayor is

known as the man who had a baby". The second frame is usually referred to as the relative clause rule. (For example "The cat that ate the salami".) The third frame is used only between speakers who know each other or something about each other fairly well as in "How is the leg coming?"

Acton breaks down the situation frame further thus:



(Adapted from Acton 1977:71)

The first frame can be illustrated with the sentence "Please pass the nutcracker". The second with "Watch out for the dog" (where one or both participants in a situation can see the dog or know that there is a vicious one present). The third frame is usually known as 'entailment', that is if an automobile has been mentioned then one can continue 'the horn', 'the tires', etc. The final frame is the usual unique use, for example 'the sun'.

To keep the algorithm as uncluttered as possible these will not be shown in the algorithm itself but will be available as 'sub-algorithms' (available through an inquiry). Explanations would need to be developed. Christophersen, Acton and Hawkins all provide excellent

examples, which could be used in the teaching component.

3.2.12 Restrictive Adjuncts

The article refers forward in noun groups with various types of restrictive modifiers. Examples are adjectives ("the present writer") and relative clauses ("the man who wrote this book"). This is sometimes called 'anticipatory usage' (Christophersen 1939:37). These structures, while restricted by their modifiers, usually behave like normal nouns with an article. Christophersen says they further delimit the head noun (37). These will be illustrated under +ALL in the algorithm. The same rules usually apply to them as to other nouns.

3.13 Conclusion

In the preceding analysis two semantic concepts were presented 1) +ALL (the class) or -ALL (less than the whole class); 2) +KNOWN (familiar) or -KNOWN (unfamiliar). In addition a distinction was made between +PROPER NAME or -PROPER NAME. With respect to noun classes several syntactic features were discussed: count/non-count and singular/plural. Chapter .4 will represent these concepts and features as a system of choice options. It will suggest a step-by-step procedure to help the second language learner sort, classify and gradually organize into a system the various bits of knowledge which are required for correct article usage.

CHAPTER 4

THE ALGORITHM

4.0 Introduction

Before presenting the algorithm, some of the notational devices used in its construction will be introduced. The terms are adopted mainly from systemic grammar.

The concept of 'system' as proposed by Halliday is utilized in the algorithm. In systemic grammar, "a system is a set of options with an entry condition; that is to say, a set of things of which one must be chosen..." (Halliday 1976b:1). A system network specifies what possible combinations of choice could be made, together with a condition of entry. For the purpose of the model in Figure 4.1 showing the choice options for the article system, there is a presupposition that the condition of entry is a noun phrase. The model is shown in flow chart format and is presented as a network of possible grammatical and semantic choice options. Unlike Halliday's open-ended networks, which operate from left to right, the model here operates from top to bottom. At the top of each arrow is the entry condition. Below the arrow is the choice. Grammatical choice options involved in article selection are singular/plural, known/unknown, all/not all, count/non-count. These will be represented binarily.

In order to make a choice between options, relevant

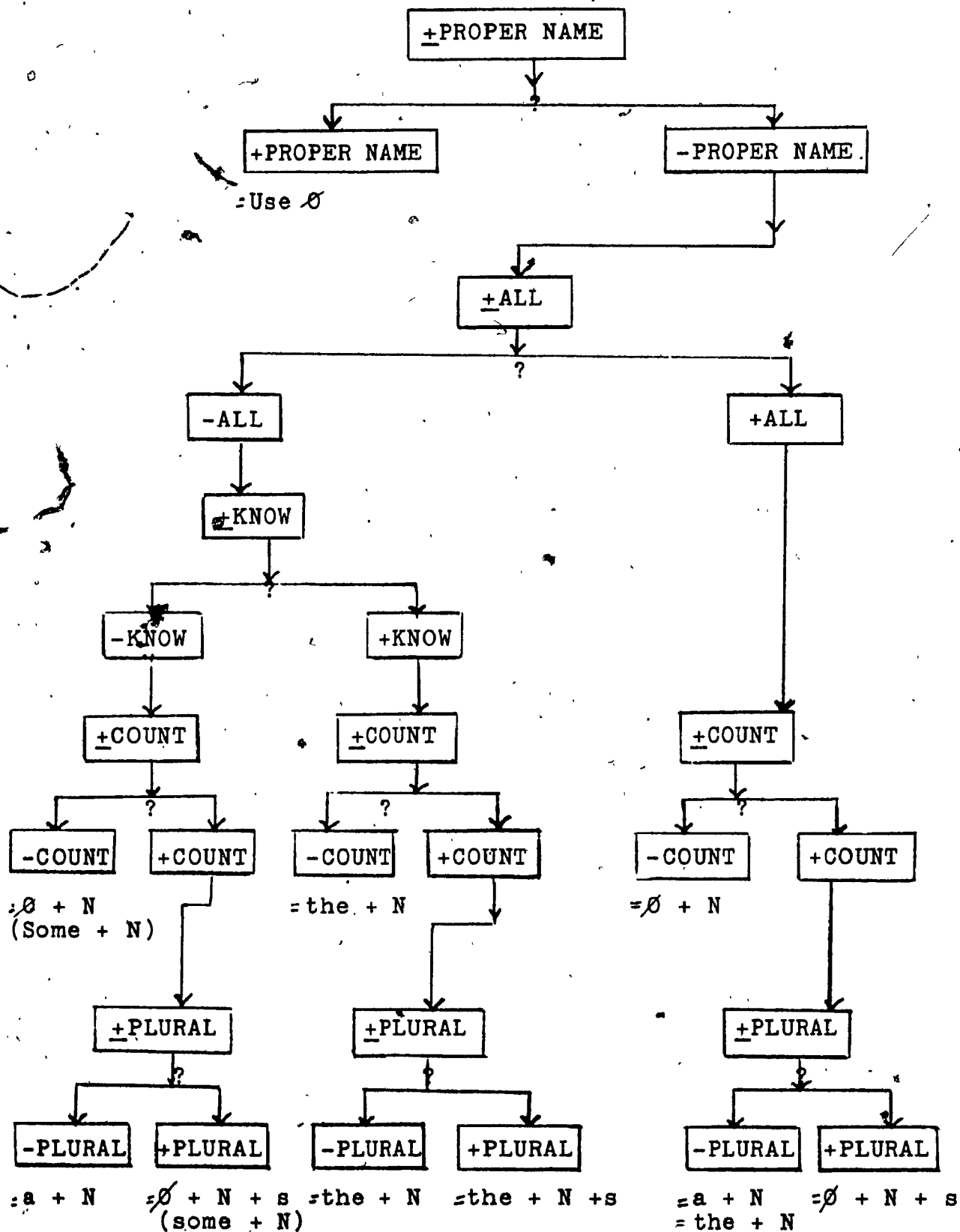
information is sometimes required. - This can be obtained in the program by using INQUIRIES, i.e., a request for information from the ENVIRONMENT. In this model, at each node, the INQUIRY is represented as a question mark (?). In a computerized instructional program INQUIRY would lead to sub-sequences containing progressively more detailed information leading to the correct choice options and access to the ENVIRONMENT. It is proposed that in a computerized program the INQUIRY sub-sequence could be escaped for a return to the main choice node.

The model could be used as shown as a basis for the order in which grammatical structures could be presented by a teacher. This, however, is not the purpose here; the purpose here is to provide a model which will serve as the theoretical basis for a computerized instruction program in article use.

The model is complex because it reflects the complexity of choosing the correct article. It recognizes that articles need to be sorted, classified and gradually organized into systems.

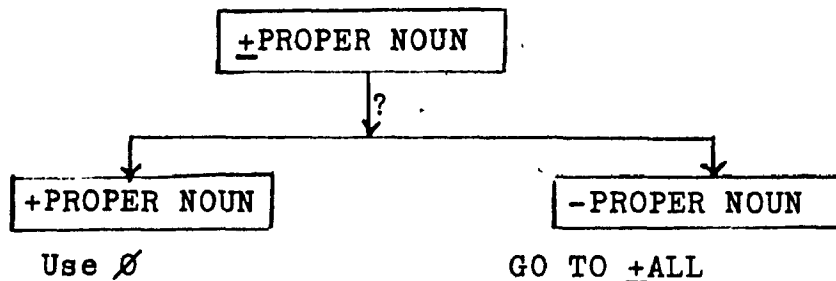
Figure 4.1 illustrates the algorithm for the article system.

Figure 4.1 AN ALGORITHM FOR ARTICLE INSTRUCTION



4.1 The First Question Sequence, + PROPER NOUNS

The first choice option in the model is +PROPER NOUN. It means, "Is this noun a proper noun, yes (+PROPER NOUN) or no (-PROPER NOUN)?" It is presented as the first choice option for two reasons. The first reason is tradition; most pedagogical grammarians, when presenting rules for article use, distinguish between proper nouns (represented here by +PROPER) and common nouns (represented here by -PROPER). The general rule is that proper nouns do not take an article, while common nouns usually do take one. Christophersen says the articles, especially the definite article, "arose to indicate a feeling of difference" between the category of proper names which apply to one and the same person or thing and common names which apply to a series of objects (1936:82). Secondly, there is some evidence from first-language acquisition studies which indicates that (French) children first begin to mark noun-like words with a 'schwa' form. Karmiloff-Smith hypothesizes that this schwa form before some nouns allows children to "distinguish proper names (by an absence of an article-like element) from common names (presence of an article like element)" (Karmiloff-Smith, 1979:216). Therefore, +PROPER NOUN has been placed as the first choice sequence in the model. The question sequence for +PROPER NOUN and the inquiry sub sequence is shown below.



The teacher (and the learner in the case of a computerized instructional program) should ask the +PROPER NOUN question first. If the answer is +PROPER NAME the general rule is to use \emptyset article. Most learners will not have to inquire for further information and consequently the INQUIRY sub-sequences would not be entered unless an INQUIRY (?) is made at the node. An example of the sequence +PROPER NOUN is presented below.

4.1.1 Sequence #1 +PROPER NAME

TO THE LEARNER:

+FRAME 1 - (Computer program asks the student) What is your name? Type your name here _____. (Student types in for example, Mustafa).

+FRAME 2 - (Program asks) Is Mustafa a Proper Name?

+FRAME 3 (Student answers) " yes"

+FRAME 4 (computer instructs) Use \emptyset article"

If the answer is +PROPER NOUN, the choice option is complete. If the learner has difficulty answering the +PROPER NOUN sequence, an INQUIRY could be made, and the following sub-system would appear.

4.1.2 Sub-sequence #1 +PROPER NOUN

+PROPER NOUN



If INQUIRY is called the following sub-sequence appears.

Frame 1 - What is a proper noun?

Frame 2 - Proper nouns can be the names of people, for example, Mr. Jones, Mustafa; places, for example Montreal, Canada; holidays, for example Christmas, etc.

Frame 3 - Proper nouns usually do not take an article.

Frame 4 - Is this a proper noun?

Quirk (1973) provides a very detailed classification of proper nouns including place names and rivers, which usually appear with the definite article. This could be incorporated here.

If the learner cannot answer the question +PROPER NOUN (i.e., indicates "?") the program continues into more detailed sub-sequences. Three choices are presented in the sub-sequence: 1) one or more than one by same name; 2) idiosyncratic usage; 3) exceptions. The learner would choose one (or more) for further explanation. The program states "Which sub-sequence would you like to see? Press 1, 2 or 3." An example of the sub-sequence for choice number 1 is outlined below:

ONE OR MORE THAN ONE BY THE SAME NAME. If this option is

chosen the program would continue "If there is more than one proper noun by the same name, the SITUATION determines whether the noun takes an article and which one. For example, in the following conversation between Cupee and Mustafa, Cupee says "I know Jane Fonda". Mustafa says "Really, you know the famous movie actress?" Cupee says, "No, not the Jane Fonda, I know a (girl named) Jane Fonda". In this case the proper noun is not behaving as a normal proper noun which has only one referent. An article is therefore necessary to make a distinction. The choice of article depends upon the situation. The same rules apply to +PROPER NOUN in such cases as apply to -PROPER NOUNS. Therefore go to ~~PROPER NOUN~~ PROPER NOUN.

Explanations for choice options 2 and 3 of the subsequence will also be available in the INQUIRY subsequence. At any time the learner can escape from the subsequence and go ~~back~~ into the main program.

We must assume that advanced learners will know what a proper name is, and that is why most learners will go immediately to the next choice option. For elementary and intermediate learners of ESL the teacher can simply stress that 'normal' proper names have no article. Exceptions will probably be left until some other basic concepts have been taught, or if diagnostic tests indicate this area is causing difficulty.

4.2 The Second Question Sequence ± ALL

If the answer to the first question +PROPER NOUN is -PROPER NOUN the second choice sequence is +ALL. In this model -ALL refers to whether or not a noun is unital (various other terms are substantiated, actualized, limited, specific, wholes or parts as they relate to wholes), while +ALL indicates the name of a mere idea, or all occurrences of what this noun refers to (i.e., the class). +ALL indicates that the number of items mentioned is not relevant as in "She bought wine". The general rule is to use \emptyset article with +ALL (with exceptions noted in 4.1.5 -- generics) and 'a' or 'the' with -ALL nouns. For example, suppose the learner is confronted with which article to use with a noun like 'water' in the phrase "Water is a liquid". The question is, "Does this noun, in the context being used, represent +ALL water?" If yes, use \emptyset article. In the sentence "He put the water in the fridge", does the noun refer to all water? If the answer is no then use -ALL and proceed to the next choice node.

The question +ALL is not just a question of whether the noun is considered in English as countable or not, but rather if the noun is being used in a non-count capacity. For example, in the sentence "Travelling by car can be hair-raising" the noun 'car' is being used in a non-count capacity. In such cases information from the environment would be required to determine whether one or more than one car is being referred to. In this model this question is viewed as a decision in the +ALL frame.

A sub-sequence to assist learners with the +ALL concept could use visual illustrations, language specific examples and exercises. Christophersen, Acton, Leech, and Hok, all present visual representations to illustrate this concept. These could be incorporated here. Most learners with first languages that have articles may not need instruction in this sequence. These learners would proceed to the next choice option. However, an INQUIRY would lead to a sub-sequence.

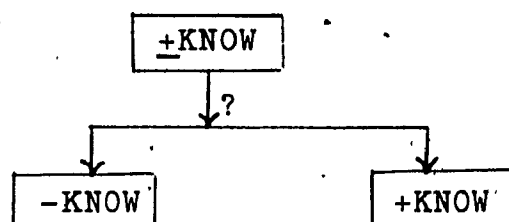
Contrastive analysis would be useful in determining which learners should be directed to the sub-sequence. For example, English and French classify nouns differently. French speakers say "La vie est belle". English speakers say "Life is good". But a French ESL speaker often says "The life is good", because modern French requires an article with continue words while English does not, unless referring to a particular, definite, known part (Christophersen 1939:66). Language transfer seems to be operating here. French speakers then could be directed to the sub-sequence which explains how English/French article usage differs with continue nouns.

4.3 The Third Question Sequence +KNOW

If the answer to the second question sequence, +ALL is -ALL, the next question is +KNOW. This term has been chosen over the terms 'familiar' or 'definite' though in essence it means the same thing. It has been chosen

because learners may find it easier to grasp the idea of KNOW more easily than the term 'familiar' or the even more abstract term 'definite'. The general rule is to use 'the' for +KNOW and 'a' for -KNOW.

Here situation, reference and discourse pragmatics interact. It is likely that many learners will have to use the INQUIRY to make this choice.



If the learner presses ? the following sequence appears.

Q. What does +KNOW mean?

A. Briefly it means "Do we know this noun already". That is do both of you, the speaker and the hearer, know which noun is being talked about. It answers the question WHICH ONE. Press ? for more information. If the learner presses ? then the +KNOW sub-algorithm with explanations and examples will be presented. Here the different basis of understanding as explained by Christophersen and elaborated upon by Acton and Hawkins can be presented. The detailed SITUATION frame in 3.2.11 would be incorporated here.

If the learner has decided that the answer is +KNOW

then the article 'the' is used and the learner proceeds to the next question +COUNT to determine whether the noun takes an 's' or not. What are commonly called 'unique' nouns would also be included in the +KNOW question sequence.

4.4 The Fourth Question Sequence +COUNT

The next question in this model, no matter whether +ALL or +KNOW is chosen, is whether a noun is considered in English as a countable noun or not (+COUNT). In structurally based grammars this question is often discussed before, or to the exclusion of, the two semantic questions (i.e., +ALL or +KNOW). In this model it is presented as a lower order question.

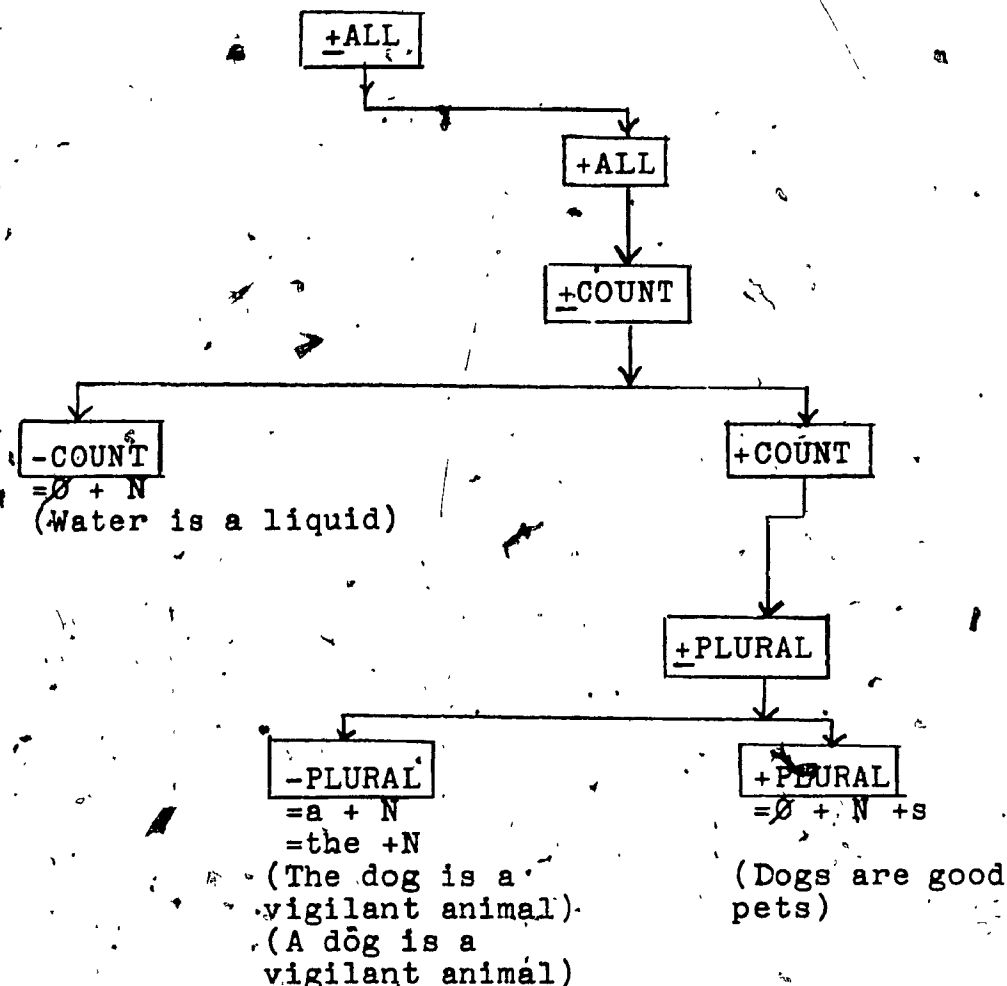
This question concerns English noun classifications and asks whether a noun belongs to a divisible class of similar objects with definite limits or boundaries. The question is "Can you count the number of items referred to?" For example, in the phrase from the beginning of a text "I hired a boat", can the number of boats hired be counted? If yes, use +COUNT and proceed to the next choice node. If you are not talking about the whole class, is the thing(s) you are talking about a member of a class English considers as countable? Nouns in English which have definite boundaries, such as 'car' or 'boat', are +COUNT, whereas nouns without definite boundaries such as 'water' or 'wine' are usually considered as -COUNT. There are exceptions here which cause difficulties to L2 learners,

such as rice, beans, cattle, (discussed in 3.2.3). These would be included in the inquiry sub-sequence.

This +COUNT question sequence has some similarities to the second question sequence (+ALL), but in fact it is a different question. +ALL asks if reference is to all members of a class, while +COUNT asks if reference is to a divisible class of similar objects with definite limits or boundaries. This explains why -COUNT words cannot take an 'a' (you cannot have one of something which cannot be counted), but can take 'the' (you can have a definite known portion of a -COUNT noun with limits or boundaries). For example "Pass me the butter".

Again, as with the other questions, the learner may not be able to decide +COUNT. In fact, deciding +COUNT causes considerable difficulty for English L2 learners. Many learners will need extensive work in recognizing +COUNT nouns, particularly when they are used non-referentially, as in "Love is blind." The learner can inquire for further information, (?), and illustrations, explanations, examples and practice exercises will be presented in the sub-algorithm.

If the answer to the question sequence (+ALL) is +ALL then the noun is expressing what is commonly known as generic usage. There are three possible ways to realize this concept. They are shown in the sub-algorithm below.



Unless the student tests into or has chosen to enter the **+ALL** frame, the program would direct him/her to the **-ALL** frame, because generic usage causes many difficulties for students. Karmiloff-Smith reported that using articles generically was one of the last functions acquired by young children. This conclusion receives support from Zehler, Maratsos and Bickerton. It would perhaps be advisable not to delve too deeply into the complexities of generic usage until after the other functions have been explained. It is for this reason that nouns falling on the **+COUNT** side of the **+ALL** question are shown lower in the algorithm.

Students will be directed to the +COUNT generic sequence on 1 of 3 conditions.

- 1) they request to go there.
- 2) a diagnostic test indicates they should go there.
- 3) The learner has mastered the other main areas of the algorithm.

There is an overlap here between +ALL nouns (generics) and -ALL nouns in that +ALL nouns can also take the articles 'a' and 'the'. This problem is indicated in 4.1.2 by dotted lines. As can be seen, a noun can fall on the +ALL side of the algorithm and take zero article as in "Water is a liquid" and they can fall on the -ALL side as in "I want water". In the second case what is implied is 'some' water. There is a difference in meaning between the two uses of the zero form. The first example means ALL of the class, while the second means part of the class. This refinement would not be pointed out until learners had mastered the other uses of the articles. As a general rule, the learner can be instructed to use \emptyset article with +ALL nouns. Refinements can wait until a later time. Learners noticing the anomaly can INQUIRE for explanation. Bringing it to the learners' attention too early might only add to their confusion.

The overlap in usage of articles in the +ALL frame is indicated by dotted lines in figure 4.2.

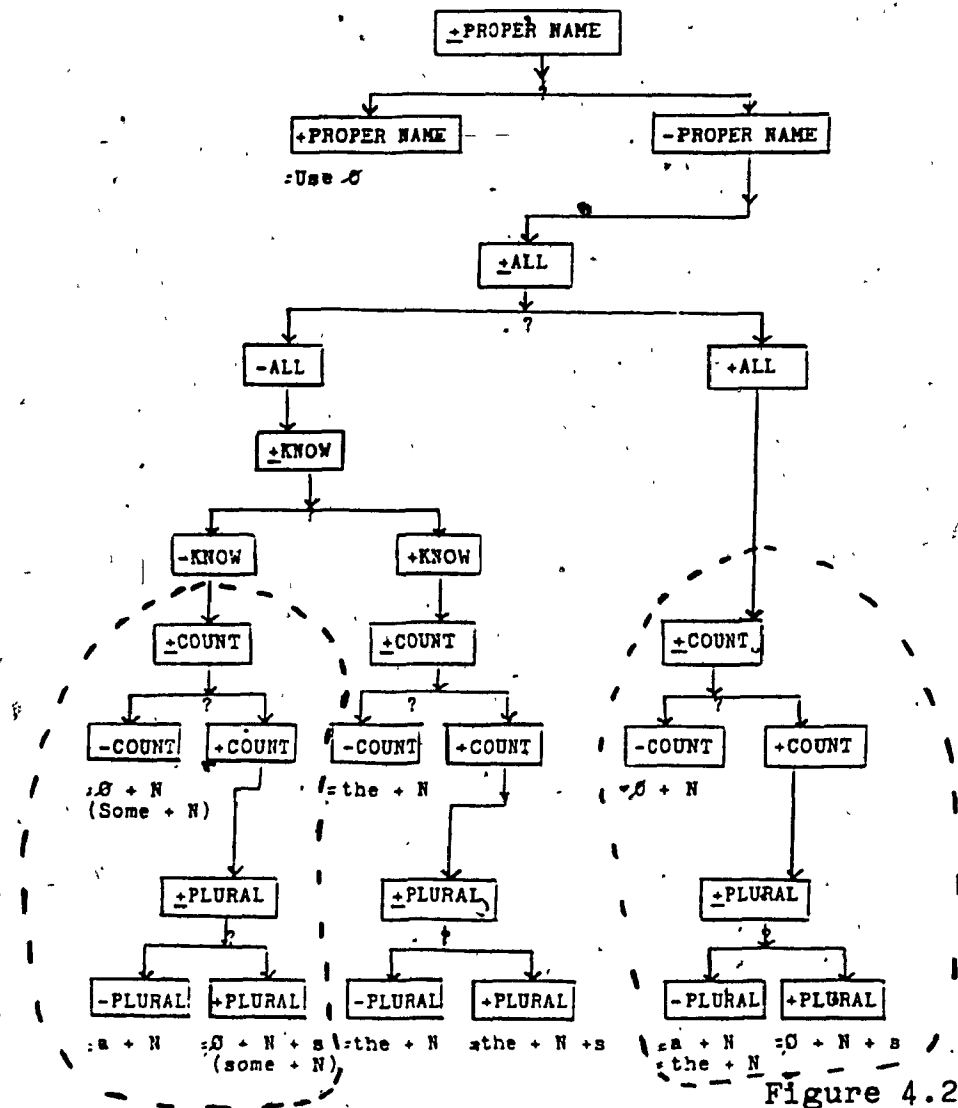


Figure 4.2

4.5 The Fifth Major Question Sequence **±PLURAL**

This question sequence applies only to **+COUNT** nouns. It asks if the reference is to one **-PLURAL** or more than one **+PLURAL**. **INQUIRY** would list nouns considered countable in English but uncountable in some other languages.

4.6 Verification of the Model

In order to verify the model examples from two sources will be run through it. The first example comes from the research work of Kharma, Analysis of the Errors Committed by Arab University Students in the Use of the Definite/Indefinite Articles, (1981). Kharma administered close tests to 128 Arabic students and analyzed the results. His test results indicate that Arabic learners have great difficulty with generic article usage. Kharma says this is because in Arabic generic use usually requires the definite article when non-count nouns are used. One part of the test and the percentage of errors for some of the questions are shown below.

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 cowrie 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. In time, (31) _____ gold and, (32) _____ silver were used...

Sixteen percent of his students answered 'the coins' for number 25, and 68.8% answered number 26 incorrectly; 46

students using 'the' and 42 using 'a'.

We can run these sentences through the algorithm to see that it works. In test item number 25 the focus will be on just one noun.

"It was in China that the idea of using (25) _____ coins first arose."

Kharma says that the correct answer is 'coins' and that this is an example of plural nouns used generically. Given the plural 'coins' in the sentence, then the questions which must be asked in the algorithm are the following:

Is this +PROPER NOUN?

Answer -PROPER NOUN.

Is this +ALL?

(Given the plural 'coins' the answer is) +ALL

Is this +COUNT?

The answer is +COUNT. (Coins in English are countable)

Is this +PLURAL?

The answer is +PLURAL.

Therefore use Ø + N + s. (i.e. coins)

This example, however, proves more difficult than it seems. The model works well if the plural noun 'coins' is provided. But if the learner tries to construct his own sentence, he may not know whether to use 'coin' or 'coins'. Even English speakers may not agree upon which form to use in this context. Some English speakers might say:

"It was in China that the idea of using 'the coin' first arose."

or even, but unlikely:

"It was in China that the idea of using 'a coin' first arose."

This 'divided usage' was discussed in Chapter 3.2.7. All 3 articles can be used generically (although 'a' with a singular count noun is not very likely). The model is flexible in allowing for this indeterminacy.

Learners making errors with generic article usage such as those outlined above, would be directed to the +ALL side of the algorithm for practice in this particular area. If the learner goes through the +ALL INQUIRY^o frames, the learner will be told that +ALL should be chosen, because the reference is to the idea of 'coin' or 'coins', not to a limited number of countable coins. The learner will see that there are three possibilities, but will be advised against using 'a coin'. No matter whether he chose 'coin', or 'coins' the correct answer will be arrived at.

Test Item No. 30.

"In time (30) _____ gold and (31) _____ silver were used."

The first question is;

Is this noun ALL?

(Here the learner might be tempted to answer -ALL because not all gold was used, just some of it.) Again we see that the model is flexible. Though here the English speaker knows this is not the case, even if the learner concludes that the answer is -ALL, the correct answer is obtained. This is because of the overlap in the algorithm with respect to -COUNT noun, mentioned in 4. 2.

If the learner answered +ALL, because it is gold in general, or the idea of gold, then the next question is:

- Is this a +COUNT NOUN?
The answer for 'gold' is -COUNT.
The algorithm indicates that \emptyset article should be used with a -COUNT noun.
Therefore the answer is 'In time, gold...'

Let us assume that the learner answered -ALL, because not ALL gold was used. This answer is not very likely, because the entry test had indicated that the learner should be practicing the +ALL side of the algorithm. But assuming the learner was not so directed, the next question would be:

Is this +KNOWN
The answer is -KNOWN
The next question is "Is this +COUNT?"
The answer is -COUNT
The algorithm indicates that a \emptyset article should be used. Therefore, use "In time, gold..."

The second type of example to be run through the model appears in a cloze test in Celce-Murcia (1983:186). This example concerns the use of the definite and indefinite articles, where the situation must be taken into account.

Student: How did I do on (1) _____ test?
Teacher: Well actually you didn't do very well.
Don't you have (2) _____ tutor?

For question number 1 ask:

Is 'test' +PROPER NOUN?
The answer is -PROPER NOUN?
Is 'test' +KNOWN?
The answer is +KNOWN. (because the student would not be asking the teacher this question unless both of them knew which test was being spoken of.)

Is 'test' +COUNT?
 The answer here is +COUNT.
 Is 'test' +PLURAL?
 The answer is -PLURAL.
 The algorithm indicates - Use 'the test'.

In question number 2: "Don't you have _____ tutor?"

The first question is:

Is 'tutor' +PROPER NOUN?
 The answer is -PROPER NOUN.
 Does 'tutor' refer to +ALL tutors?
 The answer is -ALL tutors.
 The next question is "Is this +KNOWN?
 The answer is -KNOWN (The question would have been phrased differently if the teacher knew the answer as in "Isn't Mary your tutor" or some such).
 The next question is "Is 'tutor' +COUNT?
 The answer is -COUNT (only one 'tutor' is being talked of).

The next question is "Is 'tutor' +PLURAL?
 The answer is -PLURAL
 The algorithm indicates that 'a + N is used.

The general rules for article usage can be verified by running examples of the various types of article use through this model. In each case the correct answer can be obtained. The main purpose of the model, however, is to show the organizational hierarchy of articles and to assist the learner in areas which he is having difficulty with and has been directed to. It would be unwise for a learner to attempt to learn more than one sub-sequence at a time as this would result in conceptual overload.

CHAPTER 5

SUMMARY, CONCLUSIONS AND IMPLICATIONS FOR TEACHING

5.1 Summary

The purpose of this thesis is to present an analysis of the syntactic and semantic aspects of the English article system, and to use this analysis as the basis for the construction of an algorithm which could be used to simplify the learning of the English article system by non-native speakers of English. In addition, an attempt is made to show how the article algorithm could be used as the basis for structuring and sequencing a program of instruction, eventually for use in the development of a computer-assisted instructional package.

To develop the algorithm, the grammatical phenomena involved in article usage were described according to Christophersen's analysis. Then, these phenomena were organized hierarchically with the most general concepts placed first. This hierarchy was presented as a series of choice options in a flow chart format. Some sentences representing some chief article errors were run through the model to verify that it would lead to the correct answer.

5.2 Conclusions

It is possible to construct an algorithm which can assist the ESL learner to learn article use more efficiently and to use articles correctly. The algorithm

presents information on the article system, in an organized manner valuable to the teacher. It illustrates the many complexities of the article system.

5.3 Implications for teaching

The article algorithm can be used as a basis for lesson preparation. It helps the teacher understand the complexities of the articles and the basis for choosing the correct one under different circumstances. It helps the teacher see the order in which choices must be made and also indicates which categories are more difficult for students. It indicates an order in which the teacher can present grammatical structures to make sure the concepts are fully understood.

5.4 Implications for learning

Although the model could be used as it is, it is intended to serve as the basis for the creation of a computerized instructional program. Such a program would allow the student to control the learning process. This would be an advantage over the classroom situation because often there are learners from different language backgrounds in the same class. A human teacher in such a situation can give relatively little feedback on article usage, because questions and answers are often individual and specific to learners from different language backgrounds. In addition, teacher explanations often utilize concepts which may be foreign to the L2 learner.

In a computerized program, the learner could INQUIRE as to the meaning of these concepts, whereas in a classroom situation the learner is often dependent on which concepts the teacher wishes to present. Also, in a classroom situation there is often only occasional questioning or testing of the students' understanding of what has occurred. Programmed instruction based on the model (Figure 4.1) would aim to provide information feedback by means of question and answer. Central to the model is access to the environment through the INQUIRY mechanism.

Another advantage of the algorithm over conventionally-printed materials is that it is written as a sequence of options ordered in a logical hierarchy from the most general to the most specific. Only the required options need be read to find the answer to a particular case (Wheatley 1962:3). This will allow the learner to isolate the particular area which is causing difficulty and will allow each learner to concentrate on his own problem areas.

Fourth, the model can serve as an advance organizer, i.e., as a brief overview of the structure of information to be learned. Advance organizers based on hierarchical structure (proposed by Ausubel 1960, in Romizowski, 1981) designed to aid learning and the retrieval of information, take advantage of the way in which higher order concepts and principles subsume less general ideas and concepts. This assumes that highly abstract material

subsumes less abstract material and it implies that if content is sequenced hierarchically it will be easier to retrieve. The model outlined in Chapter 4 also suggests the use of visual representation of semantic concepts as advance organizers. "One assumption, supported to some degree by research and experience, is that although a visual representation may be more or less formally equivalent to a list of rules, to the learner it is potentially a more meaningful and coherent piece of language data" (Acton, 1977:58)

A final advantage is that the many rules and exceptions in article use are split into basic units and the student is led to consider only one operation at a time. At certain points in the process the learner has to ask if one condition is present to make the next choice, and if the learner cannot answer the question, there is access to explanations which will lead to the correct answer.

5.5 Shortcomings of the model

A model is an attempt at explaining a problem. No model can ever be the final answer to the problem of article usage in English. No matter how competent the L2 learner becomes in English, article usage remains an area which seems to defy mastery because speech is a human activity and can never be entirely predicted. But the model does go some way towards enhancing our understanding

of how articles are used by native speakers, and it will provide some insight into the enormous difficulties encountered by foreign students with this aspect of English.

The model in certain respects falls short of what one would wish for. First, not all aspects of article usage are included in the model. Rather, general principles are emphasized. Idiosyncratic and frozen uses are not accounted for in the model, although many of these follow the same general principles as for 'regular' article use outlined in the model. In addition, there are times when even native English speakers do not agree on article choice.

Second, the model is not magic. L2 learners will not achieve mastery unless they master the aspects of English contained in the model, such as noun classifications and reference devices. Finally, the model, although adaptable to learners at all levels, is aimed more towards intermediate and advanced ESL learners than it is to beginners.

5.6 Implications for further research

The model suggests areas for further research in this complex but fascinating subject.— The first is the development of the units of instruction relevant to the various question frames in order to make the model operational. The model could then be programmed into a

computerized instructional system. The second area is the development of diagnostic entry tests which would allow learners to be directed to only those areas which are causing difficulty. A third area is research into the efficacy of the model. Does it work? If so, do learners improve their control over different parts of the article system by practicing the procedures outlined in the algorithm?

Once this is done, a computer could be programmed to record students' responses to different aspects of the article system at the different question nodes according to language background and exposure to English. These answers could be categorized, and could so contribute to detailed statistical information of value to language acquisition researchers, as well as to classroom teachers.

The teaching of languages is a complex, time consuming task. If machines can be used to solve one small part of the teaching problem, the teacher can be freed to devote more time to teaching which addresses the more human, the more communicative language needs of the language learner.

BIBLIOGRAPHY

- Acton, W. 1977. A Conceptual Framework for Teaching Articles in English. In On TESOL '77: Teaching and Learning English as a Second Language. H.D. Brown, C. A. Yorio and R. H. Crymes (eds). Miami, Florida.
- Bickerton, D. 1981. Roots of Language. Ann Arbor: Karona Publishers.
- Briggs, L. J. 1977. Instructional Design; Principles and Techniques. Englewood Cliffs, N.J.: Educational Technology Publications.
- Bung, K. 1973. Towards a Theory of Programmed Language Instruction. The Hague: Mouton.
- Celce-Murcia, M. & Larsen Freeman, D. 1983. The Grammar Book; an ESL/EFL Teacher's Course. Rowley, Mass.: Newbury House.
- Christophersen, P. 1939. The Articles; a Study of Their Theory and Use in English. Copenhagen: Oxford University Press.
- Close, R. A. 1981. English as a Foreign Language. 2nd. ed. London: Allen & Unwin.
- Dale, P. S. 1976. Language Development; Structure and Functions. 2nd ed. New York: Holt, Rinehart.
- Dick, W. & Carey, L. 1978. The Systematic Design of Instruction. Glenview, Illinois: Scott Foresman and Co.
- Duskova, L. 1969. On Sources of Errors in Foreign Language Learning. In IRAL. 7:1, 11-36.
- Edwards, K. S. 1967. Algorithms and the Teaching of Grammar. In A.V. Language Journal. 5:1, 27-29.
- Grannis, O. C. 1972. The Definite Article Conspiracy in English. In Language Learning. 22:2, 275-289.
- Halliday, M. A. K. & Hasan, R. 1976a. Cohesion in English. London: Longman.
- Halliday, M. A. K. 1976b: Halliday: System and Function in Language. London: Oxford University Press.
- Hawkins, J. A. 1978. Definiteness and Indefiniteness; a Study in Reference and Grammaticality Prediction. Atlantic Highlands: N.J. Humanities Press.

- Hewson, J. 1972. Article and Noun in English. The Hague: Mouton.
- Hok, B. 1970. The Concept of "General-Specific" and its Application to "The", "A", "Some" and "Any". In TESOL Quarterly. 4, 231-239.
- Huebner, T. 1979. Order of Acquisition vs. Dynamic Paradigm; a Comparison of Method in Interlanguage Research. In TESOL Quarterly. vol. 13, no. 5. 22-29.
- Jespersen, O. A. 1949. Modern English Grammar on Historical Principles. Copenhagen: Munksgaard.
- Karmiloff-Smith, A. 1979. A Functional Approach to Child Language; a Study of Functional Determiners and Reference. Cambridge: Cambridge University Press.
- Kramsky, J. 1972. The Article and the Concept of Definiteness in Language. Mouton: The Hague.
- Landa, L. N. 1976. Instructional Regulation and Control; Cybernetics, Algorithmization and Heuristics in Education. Englewood Cliffs, N. J.: Educational Technology Pub.
- Leech, G. & Svartik, J. 1975. A Communicative Grammar of English. London: Longman.
- Mann, W. C., 1983. A Linguistic Overview of the Nigel Text Generation Grammar. In The Tenth Annual LACUS Forum. Hornbeam Press: Columbia, S. Carolina. 255-265.
- Maratsos, M. 1976. The Use of Definite and Indefinite Reference in Young Children; an Experimental Study of Semantic Acquisition. Cambridge: Cambridge University Press.
- Mathiessen, T. C. 1983. How to make Grammatical Choices in Text Generation. In The Tenth Annual LACUS Forum: Columbia, S. Carolina. 266-284.
- Pica, T. 1983. The Article in American English; What the Textbooks Don't Tell Us. In N. Wolson, and E. Judd (eds.). Sociolinguistics of Language Acquisition. Rowley, Mass.: Newbury House Publishers. 82-95.
- Quirk, R. & Greenbaum, S. 1973. A University Grammar of English. London: Longman.
- Richards, J. C. 1974. Error Analysis, Perspectives on Second Language Acquisition. London: Longman.

- Romizowski, A. J. 1981. Designing Instructional Systems; Decision Making in Course Planning and Curriculum Design. New York: Kogan Page.
- Searle, J. 1969. Speech Acts; an Essay in the Philosophy of Language. Cambridge: Cambridge University Press.
- Wheatley, D. M. & Unwin, U. W. 1972. The Algorithm Writer's Guide. London: Longman.
- Whitman, R. 1974 Teaching the Article in English. In TESOL Quarterly. vol. 8. 253-261.
- Winograd, T. 1972. Understanding Natural Language. New York: Academic Press.
- Yotsukura, S. 1970. The Articles in English. Paris: Mouton.
- Zeheler, A. M. & Brewer, W. F. 1982. Sequence and Principles in Article System Use: an Examination of A, The, and Null Acquisition. In Child Development. 1268-1274.