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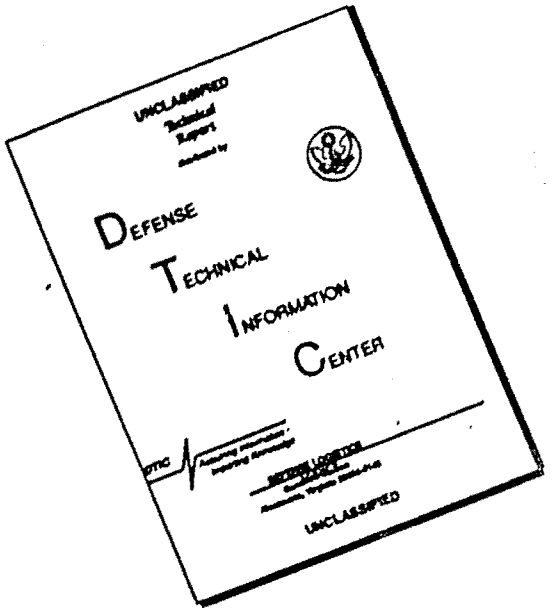

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COMPREHENSIVE REPORT ON

PREDICTIVE SYNTACTIC ANALYSIS

Murray E. Sherry

September 1961

Electronics Research Directorate
Air Force Cambridge Research Laboratories
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ABSTRACT

Predictive syntactic analysis is a scheme for the automatic syntactic analysis of natural language that is based on a continuous left-to-right scan of a sentence. This report supersedes previous reports on the experimental predictive syntactic analysis program for Russian. All the grammatical rules followed by the experimental program are here included. This paper is intended to serve at this time both as a report of past accomplishments and as a working paper on which to base future research.

I. COMPREHENSIVE REPORT ON PREDICTIVE SYNTACTIC ANALYSIS

Murray E. Sherry

1. Introduction

Predictive syntactic analysis is a scheme for the automatic syntactic analysis of natural language that is based on a continuous left-to-right scan of a sentence. Past experience has been largely limited to the syntactic analysis of technical Russian texts,[1,2,3,4] although several attempts to analyze English texts by this method have been made.[5,6]

This report supersedes previous reports on the experimental predictive syntactic analysis program for Russian. All the grammatical rules followed by the experimental program are here included. This paper is intended to serve at this time both as a report of past accomplishments and as a working paper on which to base future research. It is specifically not intended to be a concise summary of the predictive syntactic analysis scheme for the casual reader. Various brief outlines of the predictive method have been presented in earlier papers listed in the bibliography.

The experimental program is still far from complete. A number of grammatical structures, such as interrogative sentences and idiomatic constructions, have not yet been taken into account and, therefore, cannot be analyzed correctly at this time. No means of analysis for such structures will be suggested here unless their analysis seems to parallel closely that of an existing analysis technique.

Detailed operation of the experimental predictive syntactic analysis program is not mentioned here. These programming techniques and the problems

inherent in them are discussed at length by Isenberg[7] in another section of this report.

Experience has shown that, although the individual operations performed in the predictive analysis program are not formidable conceptually, en masse they are exceedingly difficult to master. The method adopted for the presentation of the operations is to start with the simplest ones and build on this base to the more involved mechanisms used in the program. This presentation is supplemented by a concise, complete, cross-referenced set of rules for the present analysis program (Appendix A). With these rules the reader can duplicate any analysis described or illustrated here.

Explicit examples from analyzed text have been included wherever possible to summarize the vast number of details that are covered. Hopefully, these examples are sufficiently varied to preclude the necessity for the reader to study the individual analyzed texts, since the scanning of texts is an extremely laborious method for studying program output. The majority of the words from the texts occur in a few simple grammatical constructions which are repeated endlessly.

Four texts, listed below, amounting to approximately 5500 running words, have been analyzed by the latest experimental version of the program and are the basis for the examples in this report:

Text 00A: Владимирский, К. В., "О синхронном фильтре," Журнал экспериментальной и теоретической физики, том 21, вып. 1, физический институт имени П. Н. Лебедева, АН СССР, 1951, 8 стр.

Text 00K: Гнеденко, Б. В., Курс теории вероятностей, глава 10, параграф 48, "Вводные замечания," Государственное издательство технико-теоретической литературы, Москва-Ленинград, 1950, 240-2.

Text OUU: Чебышев, П. Л., "Прочие сочинения биографические материалы," Полное собрания сочинений П. Л. Чебышева, том 5, "Опыт элементарного анализа теории вероятностей," Издательство АН СССР, Москва, 1951, 27-8. (This text was suggested by I. Rhodes of the National Bureau of Standards.)

Text OOH: Печатные схемы сантиметрового диапазона, Сборник статей под редакцией В. И. Сушкевича, "Предисловие редактора русского перевода," Издательство иностранной литературы, Москва, 1956, 5-7.

Texts OOK (924 words) and OOH (700 words) are taken from modern technical literature. Text OUU (545 words) is a small sample from a 19th century piece of technical writing. The analysis of this text is distinctly inferior to the analysis of any of the others due largely to the different syntactic rules followed almost 100 years ago. Text OOA (3270 words) has previously been used extensively to generate syntactic rules. This text has been re-analyzed with the latest version of the program although it has not been recently used as source material to improve the experimental program. Text OOA has been rejected as source material to avoid biasing the program to the writing style of any particular author.

Two other texts were also analyzed by this latest experimental version of the program; these are texts $ (816 words) and YYY (416 words). The sentences in text $ were specifically composed to contain particular syntactic properties of interest that rarely occur in texts. The sentences in text YYY are interesting samples culled from several texts and brought together to provide material of greater than average grammatical variety to aid in testing and developing the predictive analysis program.

Several errors, either typing mistakes or program errors made during dictionary lookup, appear on the input tape of text $. Rather than repeat the process of dictionary lookup, the input tape of text $ was directly corrected. To distinguish the altered entries, the mark (CORR.ENTRY) has been entered, replacing the English correspondent in the 10-word item. The grammatical information placed in the corrected items is identical in every respect to the information which would have been automatically inserted by the appropriate programs.

Wherever possible, samples have been chosen from texts OOK and OOH. Texts OUU and YYY have been used as second choices. Examples not present in those four texts were chosen from text OOA, and text $ was used only as a last resort. Extra words have often been left in the examples to indicate the context of the sentence structure being discussed.

More than one-third of the sentences in the six texts have been analyzed successfully by the experimental program. A "successful" analysis is one in which either the syntactic analysis produced by the program is grammatically correct or the error-detecting properties of the program are sufficient to indicate the correct solution. Due to the limited size of internal memory on the Univac II Computer, the computer used for the predictive syntactic analysis program, it has not been practical to provide for error-correcting routines. Thus there is no indication of error correction on the present output of the program.

Most unsuccessful sentence analyses are due to a single error. Several problems account for a large number of the errors: missing words in the Russian-English dictionary, no grammatical information for proper

names, no analysis for certain punctuation marks, etc. Other problems more closely associated with existing rules of analysis are mentioned in appropriate parts of this report.

As time passes, the remaining problems are more and more specialized. The rules for the solutions of these problems are utilized rarely and the size of the program increases rapidly. However, so long as the new rules fit into the basic scheme of the program, they can be easily incorporated.

The work on predictive syntactic analysis is an outgrowth of studies on a syntactic analysis technique by Rhodes[8] and the formalization of the syntax of the Łukasiewicz parenthesis-free notation by Burks, Warren, and Wright,[9] and bears general similarities to the linguistic model of Chomsky.[10] A theoretical model which is analogous to the predictive syntactic analysis program in several interesting aspects is due to Oettinger and the author.[11,12]

This report is divided into nine parts, each one dependent on the preceding ones. After a comprehensive outline of the predictive syntactic analysis technique (Part 2), the simple constructions of noun phrases are discussed (Part 3). Verb phrases and other relationships of government are then taken up in Part 4. More involved relationships among the components of clauses, the subjects and predicates, are discussed in Part 5, prior to the identification of clauses and complex phrase forms in Part 6. Parts 7 and 8 are devoted, respectively, to the identification of compound structures and to other miscellaneous constructions. The various details are summarized by a series of examples of complete sentences analyzed by the program (Part 9).

Some of the comments and examples in this report were initially suggested by co-workers of the author. Mr. Warren Plath, in particular, has freely devoted many hours to the study of the analyzed texts. He has pointed out a significant proportion of the errors in the present program and has proposed means for correcting many of these errors.

2. The Predictive Syntactic Analysis Technique

The method of predictive syntactic analysis is based on the premise that a Russian sentence can be scanned from left to right, and that at any point in this process it is possible both to determine the syntactic structure of the word under consideration on the basis of the predictions made during the analysis of the words to its left, and to predict the syntactic structures which will be encountered to the right of the current word. Any language exhibiting the properties of a nested language can be analyzed in one direction in the same general manner.

In English, if a sentence is interrupted by a phrase or a clause, the embedded phrase or clause will be completed before the main clause is resumed. This embedded phrase or clause is considered to be nested within the main clause. Thus the clause "who came to dinner" is nested in the sentence: "the man who came to dinner ate heartily," whereas the unnested string of words, "the man who came ate heartily to dinner" is a questionable sentence at best. Another structure, the phrase "to dinner," is nested within the subordinate clause. A level, or depth, of nesting can be assigned to every phrase and clause in a sentence. Thus "the man ate heartily" is at the first level, "who came to dinner" is at the second level, and "to dinner" is at the third and deepest level.

The concept of nesting recently has received the attention of several investigators. Alt[13] has discussed the problem of assigning numerical values to clauses and phrases within a sentence. Yngve[14] and Sager[15] have also used the nesting concept when discussing, respectively, the synthesis and analysis of English sentences. Sager uses the terminology of "depth of parenthesization" instead of "depth of nesting" since she conceives of an approach whereby a pair of parentheses is placed around every identifiable nested structure. Plath[16] has presented a method for diagramming nested structures and parenthesizing each of these structures.

The terminology for describing the predictive syntactic analysis technique has evolved parallel to the development of the technique itself. The original terminology has undergone a complete revision in addition to several minor modifications. The terminology to be described in this section is merely the latest and, hopefully, the most meaningful set of terms.

A. The Program Cycles for Predictive Syntactic Analysis

Predictions of syntactic structures are stored in a prediction pool which behaves somewhat like a pushdown store, a linear array of storage elements in which information is entered or removed from one end only, in accordance with a "last-in-first-out" principle.[11] New predictions are always entered at the top of the prediction pool, and the predictions are tested starting at the top of the pool and proceeding downward. The topmost prediction in a pool need not necessarily be the next prediction to be fulfilled.

In the experimental program the predictions used are those of the syntactic roles that the words assume in a sentence. Many predictions are named for classical syntactic roles such as the subject prediction. All

these names are explicitly defined within the context of the experimental program. These definitions need not coincide with the classical grammatical definitions, but they resemble the classical definitions closely.

The present program uses 10-word* items both for input and for output (Figure 1)** to take advantage of the input-output characteristics as well as certain internal operations of Univac I and II Computers. The first English correspondent stored in the dictionary entry of a Russian word, the morphological class of the Russian word, the Russian word itself, and the text serial number appear in the first five machine words of the 10-word item. The syntactic data is contained entirely in the last five machine words of the item. The coding format of the information in the last five machine words (word 5 to word 9) for each morphological type and syntactic class of Russian word is described by Foust[17] in another section of this report. Words 5 and 8 contain morphological and syntactic information that remains invariant during the analysis of the Russian word. During the analysis the syntactic role of the word in the sentence is placed into word 9, which, before the analysis, contains the dictionary entry number of the Russian word. Various grammatical characteristics, such as case, number, gender, etc., are, when applicable, stored in words 6 and 7. When the analysis program selects the information appropriate to the particular syntactic role of the Russian word, the remainder of the information is deleted from these two machine words.

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* Machine words are numbered 0,1,...,9.

** The figures for this section of the report are bound separately and included in a pocket attached to the back cover of the report.

The process of predictive syntactic analysis consists of two cycles, a testing cycle and a predicting cycle.

(1) The Testing Cycle. During the testing cycle the predictions are tested against the information about the arguments or grammatical characteristics of a word that are obtainable from a dictionary. Since the lexical properties of words do not always define a unique argument, a set of alternative arguments must be considered. Thus, "waters" has two alternative arguments: /noun, plural/ and /verb, 3rd person, singular, present tense/. The alternative arguments of a single 10-word item are completely described by machine words 5 to 8. If grammatical information must be stored with a prediction, it is placed in grammar words, which are referred to by the prediction.

From this point of view, the morphological homograph problem in Russian is subsumed under the heading of alternative arguments. It makes no difference with regard to the input whether a word has two or more alternative arguments such as the nominative singular and accusative singular for the Russian noun стол, or whether there are two or more homographs of a word, such as the pronoun and the noun homographs of the word том, which are translated as "that" or "volume," respectively. Although the alternative arguments of стол are described in a single 10-word item and the alternative arguments of том are described in two 10-word items, the program treats the alternative arguments of both words identically.

Whenever an alternative argument fulfills a prediction, an intersection occurs. The preferred argument is the alternative argument of the first intersection in a test sequence. The prediction of the first

intersection of a test sequence is fulfilled; likewise, a word is accepted by the fulfilled prediction. A fulfilled prediction is wiped or removed from the prediction pool.

The syntactic role is the grammatical role of the fulfilled prediction and is stored in word 9. The information contained in the preferred argument in words 5 to 8 and in the syntactic role in word 9 is, collectively, the grammatical unit.

In a test sequence all the alternative arguments of a word are tested against all the predictions in the pool in their respective orders, so that each prediction, in turn, is tested against the set of all alternative arguments. All intersections occurring subsequent to the first intersection are listed in hindsight for future reference, while the grammatical unit is recorded as the temporary analysis for the given word. The other alternative arguments which intersect with subsequent predictions are intersecting arguments, and the alternative roles are listed with them.

An output 10-word item and a hindsight 10-word item are almost identical in appearance; the sole difference is in the presence of two 2-digit columns located to the left of the text serial number in the output item. The first number is the chain number, an error indicator that will be discussed later; the second number states the total number of predictions in the prediction pool before the analysis of the 10-word item.

To indicate boundaries of different sets and subsets of predictions in the pool at a given time, several types of sentinels are placed in the pool. These sentinels are usually found just below the last prediction of a set. Presently, the format of sentinels coincides with the format of

predictions; however, this is a temporary expedient that will probably be abandoned in the near future.

(2) The Predicting Cycle. After the testing cycle has been completed and a grammatical unit for a Russian word has been chosen, the predicting cycle is started. The operations of this cycle update the prediction pool (1) by wiping the fulfilled prediction and other rejected predictions, (2) by modifying predictions already in the pool, and (3) by adding new predictions to the top of the pool as indicated by the grammatical unit of the analyzed word.

The rules for wiping predictions in the pool are based on the sentinels located in the prediction pool as well as on the predictions themselves. Modification of existing predictions and addition of new predictions are based on the word class of a word as well as its syntactic role. The grammatical categories such as person, case, number, etc., of a word play only indirect roles in the predicting process. This information serves to limit the words that can fulfill predictions, where the words fulfilling the predictions are restrained to agree with preceding analyzed words in one or more grammatical category.

In this manner, a noun assigned the syntactic role of subject would cause (1) the subject prediction to be wiped from the pool; (2) the predicate head prediction to be modified, so that only a predicate agreeing with the subject in person, number, and gender can be accepted; and (3) three new predictions, a compound subject, a noun complement, and a modifier, to be entered at the top of the pool. The compound subject is predicted because the syntactic role of the word is analyzed as the subject; the noun

complement, a prediction of a genitive noun phrase, and the modifier, a prediction of a participial phrase, are predicted by every noun regardless of its syntactic role.

Due to the secondary role played by the grammatical categories, an intersection can allow a multiple choice of categories. If a subject prediction is fulfilled by a nominative pronoun that can be either singular or plural, it is not necessary to preselect either alternative. Instead, the ambiguity can be carried along. In the particular example no restriction on number need be made in the predicate head prediction. Likewise, if a noun immediately following a preposition can exist in more than one of the cases that the preposition can govern, there is no need to assume arbitrarily that any one case is the correct one.

A reference to the grammatical unit that initiated a fulfilled prediction is also included in word 9 of the accepted Russian word. The three-digit number located to the left of the syntactic role is identical to the last three digits of the text serial number of the Russian word which initiated the prediction. In this manner, when a sentence is analyzed, not only is a syntactic role assigned to every word, but a linkage to the word initiating the prediction is established. To continue with the same example, if the word following the noun subject is a genitive noun, the text number of the noun subject is attached to the syntactic role of the genitive noun, and the noun complement can then be identified as dependent on the subject.

B. Prediction Span Indicators

Not all predictions in the pool are of equal importance. Whereas, on the one hand, it would be difficult to justify the analysis of a sentence without an indication of a predicate, on the other hand, a sentence with no subordinate clause would be perfectly acceptable. To provide a relative level of importance among the predictions, a prediction span indicator (PSI) is assigned to every prediction in the pool. The PSI indicates (1) how long the prediction can remain in the pool before it must be wiped, (2) whether or not the prediction must be fulfilled for the analysis to be considered successful, (3) if the prediction is mutually exclusive with adjoining predictions (i.e., only one prediction from a set of mutually exclusive predictions can be fulfilled), and (4) whether or not the prediction should be tested at a given time.

The PSI can take on any value between 00 and 99. Any PSI with the value equal to or greater than 50 is considered inactive and cannot be tested. It is otherwise identical to its active counterpart with a PSI less than 50. Each prediction in a set of mutually exclusive predictions is indicated with a PSI of between 20 and 29 (or, inactively, between 70 and 79). The basic predictions presently used are:

00 - the prediction must be fulfilled by the next word in sequence or not at all;

01 - the prediction must be fulfilled during the analysis of the sentence;

02 - the prediction can be fulfilled more than once and is not to be wiped when fulfilled;

03 - the prediction may be fulfilled at any time but need not necessarily be fulfilled.

Only sentinels are listed with 02 PSI; all ordinary predictions belong to the other three basic types.

C. Infinity and Arbitrary Choice

In any scheme of automatic syntactic analysis a method must exist to handle words which are not predicted. This class of words can be subdivided into two categories: those that should be predicted and those that cannot be predicted.

A number of words and other forms exist that either can never be predicted or can be predicted only occasionally. Examples of such words and forms are adverbs, prepositions, and commas. Adverbs occur both to the left and to the right of the words that they modify. In a left-to-right pass, adverbs are predicted only if they occur to the right of the words they modify. An adverb preceding an adjective or a verb usually gives no clue about the following structure. Thus, there is no information to be gained by having the adverb fulfill a prediction in the pool. Likewise, it is a difficult matter at best to link a prepositional phrase to the word it modifies even if the phrase follows immediately after the word. A comma is even worse in this respect since its position in a sentence is unpredictable. However, it is true that if two commas are used to isolate some structure in a sentence, the second of the commas may often be predicted by the first.

When a word that cannot be predicted is encountered during a testing cycle, it must nevertheless be accepted in some sense, subject to later revision. Since there is no prediction in the pool, no finite number can be assigned the unpredicted word to indicate the linkage. Rather, an "infinite number" is assigned to the unpredicted word, and in the terminology of predictive syntactic analysis, the word is "accepted by infinity." (The ordinary prediction is considered a finite prediction.)

The necessity for adopting the concept of a word accepted by infinity is an admission that predictive analysis cannot be completed on a single pass. The hoped-for result from a single pass is not necessarily a complete and comprehensive analysis, but rather a limited and accurate analysis without error, upon which the desired comprehensive analysis can be built.

Situations arise when several intersections with the alternative arguments of a word both of an infinite prediction and of a finite prediction take place in the analysis of a single word. Since the infinite prediction is a weak prediction, really a statement that the analysis scheme is incomplete but that the analysis should not indicate an error, it is desirable that the stronger finite prediction be chosen whenever possible. This is accomplished by means of an override routine, whereby the grammatical unit of the finite intersection is substituted for the grammatical unit of the infinite intersection in the event the infinite intersection occurred first. In the present program an override takes place only rarely. It occurs usually when a short-form adjective is homographic with an adverb (see Part 5A).

The infinity classification is distinct from the arbitrary choice classification, the only other nongrammatically oriented classification in

predictive analysis. A word is an arbitrary choice when it cannot fulfill any prediction in the pool and does not belong to a class than can occur more or less randomly. By definition, the arbitrary choice classification excludes all words that can be accepted by infinity. A word such as a noun that does not fulfill any prediction during a testing cycle and cannot be predicted by infinity is automatically assigned to arbitrary choice.

One of the requirements for the identification and analysis of a complete sentence is that every word in the sentence fulfill a prediction. Thus a completely analyzed sentence can contain words accepted by infinity, but it cannot contain any words which have been labeled "arbitrary choice." The chain number, briefly mentioned previously, serves to indicate the occurrence of an arbitrary choice. The chain number is set to zero prior to the analysis of a new sentence. Every time an arbitrary choice is found, the chain number is incremented.

D. The Program Format

Predictive syntactic analysis has been conceived as a program consisting of an executive routine that performs the various bookkeeping duties and controls two sets of subroutines. The first set, the testers, correspond to the set of predictions. The second set, the predictors, correspond to the set of preferred arguments and syntactic roles that make new predictions or modify predictions already in the pool.

Although the sentinels are considered as part of the set of predictions, and consequently as part of the set of testers in the program, it is more logical to consider them as a third distinct set of subroutines.

The detailed logical description of the three sets of subroutines is given in Appendix A. The remainder of this report is devoted to a discussion of the operation and interaction of the various members of these sets. In addition to reporting on the present system, several logical errors in the system are pointed out and occasional suggestions to improve the performance of the program are included. The stress is on the improvement of the identification of the structures already being identified as opposed to the recognition of other new structures.

3. Elementary Phrase Structures

In predictive syntactic analysis the identification of the syntactic role of individual words and the identification of the phrase and clause structure within a sentence are carried out simultaneously. To explain the detailed operation of the process, it is convenient to start with the deepest nested phrase structures, which are the simplest, and to consider the other more complex structures later.

Consider now the three most elementary phrases, the noun phrase, the prepositional phrase, and the numeral phrase. Only the predictions essential to the analysis of these phrases will be mentioned here in an effort to avoid unnecessary complication. For a complete picture of the operation of the predictive analysis program, the steps should be worked out in detail using the rules of Appendix A.

A. The Basic Phrase and the End-wipe Sentinel

The most elementary phrase structure in Russian, referred to as the basic phrase, is the noun immediately preceded by none, one, or more than

one adjective, with all the words in agreement in case, number, and gender. Since predictive syntactic analysis proceeds from left to right, the syntactic role of the basic phrase is assigned to the leftmost word of the basic phrase. If the leftmost word is a noun, then the basic phrase consists of only one word; however, if it is an adjective, then the rest of the basic phrase must be identified before the program can return to the analysis of any other higher-level structure in the sentence.

The basic phrase can be assigned any of a number of syntactic roles, such as subject, object, or preposition complement, which are represented by appropriate predictions in the pool. When such a prediction is placed in the pool no indication is given of what the structure of the basic phrase will be. Therefore, both an adjective and a noun must be capable of fulfilling the prediction. For the same reason a participle, a numeral, and a pronoun must also fulfill the prediction. (Discussion of these syntactic word classes will be postponed for several pages.)

If the first word of a basic phrase is an adjective, a master prediction with a 01 PSI is made. Thus the analysis of the sentence can be successful only if another adjective or a noun agreeing in case, number, and gender with the original adjective follows. If the word that follows is a second adjective, a second master prediction is made, and this process continues until a noun fulfills the master prediction.

To ensure that either an error is indicated or the master prediction is fulfilled before other less deeply nested structures are analyzed, an end-wipe sentinel is placed in the prediction pool immediately below the master prediction. If the end-wipe sentinel is reached during the testing

cycle before any intersection between the alternative arguments of the current word being tested and the predictions located above the end wipe has been recorded, the end wipe causes itself and all the predictions above it to be wiped from the pool.

Before wiping predictions from the pool, the end-wipe sentinel subroutine must check to determine whether any of the alternative arguments of the current word can be accepted by infinity. If so, the wiping process does not take place.

This wiping operation seems quite arbitrary; however, sound theoretical principles have suggested this approach. A model of the Russian language for predictive syntactic analysis has been discussed previously.[11,12,2] The model is based on the parenthetic and parenthesis-free notation of mathematical expressions. It has been shown that if an expression is well formed, a syntactic analysis of the expression will leave no trace in the prediction pool. That is, if the prediction pool consists of a certain set of predictions before the start of the analysis of the well-formed expression, then the prediction pool will consist of the same set of predictions after the analysis of the expression. On the assumption that the Russian language is well formed in the same sense, the same rule can be applied to the syntactic analysis of the natural language. Of course, in a Russian analysis, no explicit indication of the end of a well-formed expression exists, so that it is necessary to take the opposite stand: if the first intersection in the test of a word occurs with a prediction located below a set of predictions in the pool belonging to a deeper nested structure, the deeper nested structure is assumed to be complete. On the hypothesis

that the expression is well formed, no trace of the analysis of the expression should remain in the pool and the residue of predictions generated by the analysis of the expression should be wiped from the prediction pool. A check on the inaccuracy of the hypothesis is the 01 PSI prediction. If one or more are wiped from the pool in such an operation, it signifies that the analysis did not result in a well-formed expression and an error exists.

The phrase подобные антенные системы (Figure 2)* is a typical subject basic phrase. The adjective подобные fulfills the subject prediction in the pool. It also fulfills the left object prediction which is farther down in the pool. The second intersection is duly recorded on hindsight. As an adjective, подобные predicts a master that must be nominative, plural, and can have any gender. An end-wipe sentinel is placed under the master prediction. The following word, the adjective антенные, fulfills the master prediction and is accepted as the master of подобные. It too predicts a master that must be nominative, plural, and any gender. This second master prediction is fulfilled by the noun системы. The analysis program determines that the basic phrase has been completely analyzed when the following word, the verb описываются, is analyzed. The end-wipe sentinels, inserted into the prediction pool when the master predictions were made, are wiped without any indication of error.

The second basic phrase, the single word этом (Figure 3), illustrates the use of the end-wipe sentinel. When этом is analyzed, the topmost prediction in the pool is a preposition complement, a prediction for a basic

* Figure 2 and all those that follow contain text material both before and after analysis and are bound separately with this report for ease of reference. Information collected in hindsight during analysis is included in these figures.

phrase governed by a preposition. Этом has two alternative arguments, one adjectival and one nominal. The first intersection is with the adjectival alternative argument, so that этом is selected as an adjective and the other intersection is noted in hindsight. The master prediction generated by the grammatical unit of этом is for a locative, singular, and masculine or neuter basic phrase. Once more, an end-wipe sentinel is placed below the master prediction. The noun расположение cannot fulfill the master prediction; neither can it be accepted by infinity. The end-wipe sentinel therefore wipes both itself and the master prediction from the pool. Since the master prediction has a 01 PSI, the wipe is recorded in hindsight as an indication of an error. In this particular example the error is the obvious incorrect choice of intersections, and it can be corrected by selecting the nominal alternative argument of этом as the preposition complement.

The phrase при этом might be considered an idiom. To reduce the large number of idiomatic expressions that must be recognized in Russian, it is convenient to consider expressions idiomatic only if their syntactic or semantic meaning cannot be determined by an ordinary analysis. Since the grammatical usage of при этом can be obtained from ordinary syntactic analysis techniques, the prepositional phrase does not qualify, in this sense, as a syntactic idiom.

The third example, среднюю за много периодов амплитуду (Figure 4) illustrates the need for the infinity test before the end wipe performs its role. The words of the basic phrase среднюю амплитуду are not contiguous; the adjective is modified by the prepositional phrase за много периодов. The preposition is accepted by infinity and the rest of the prepositional phrase is analyzed before the basic phrase can be identified.

From the above examples the two functions of the end-wipe sentinel are evident. The sentinel provides a mechanism for wiping predictions that can no longer be fulfilled. It also provides a latent mechanism for the quick detection of errors by wiping predictions that must be fulfilled. The second function cannot be really utilized until errors are corrected during the analysis pass.

Occasionally an author writes a basic phrase with the noun preceding the adjective and with no intervening commas. This practice was quite common in the 19th century as evinced by text OUU where this structure was encountered in almost every sentence. In modern texts this structure is very rare; only one instance was discovered among the other analyzed texts: сопротивление это должно буть... (Figure 5). Perhaps the author was trying to emphasize his argument in this sentence. Due to the extreme rarity of such structures in the modern language, no provision for handling them has been made in the analysis program to date. The error in the analysis of это is propagated when должно is not selected as the predicate (see Part 5). A second independent error is caused by the selection of значительно as a verb complement rather than as an adverb (see Part 4E).

B. The Noun Phrase and the Pronoun Phrase

Whereas every adjective predicts a master that must be fulfilled, every noun predicts a noun complement that need not be fulfilled, but if it is to be fulfilled at all, it must be fulfilled at once. The noun complement prediction with a OO PSI can be fulfilled by a genitive noun phrase. Of course, the noun of a noun complement basic phrase also predicts a noun

complement, so that this type of structure may repeat several times. The initial basic phrase, which fulfills some prediction other than a noun complement, followed by any and all noun complement basic phrases together constitute a noun phrase. Any other deeper nested structures that interrupt the analysis of these basic phrases, such as the prepositional phrase in Figure 4, are part of the noun phrase.

A typical example of a noun phrase consisting of two basic phrases is печатные схемы сантиметрового диапазона (Figure 6). After печатные схемы is identified as the subject basic phrase, the noun схемы predicts the noun complement. The genitive singular alternative argument of the adjective сантиметрового fulfills the noun complement prediction and makes the subsequent prediction of a genitive singular master. The noun phrase is completely analyzed by the recognition of the noun диапазона as the master of сантиметрового. Although this noun also makes a noun complement prediction, the next item in the sentence is a comma that cannot fulfill the prediction.

Pronouns, with the exception of relative pronouns, are not treated as separate entities in the predictive analysis program. In the testing phase of the program, a pronoun can be accepted in place of an adjective or a noun. If the pronoun is coded adjectivally, the predictions of an adjective are made; if it is coded nominally, the predictions of a noun are made. A nominal pronoun cannot be modified by preceding adjectives and it cannot be followed by a noun complement. The treatment of a nominal pronoun as a noun is presently based on the hypothesis that no harm is done in making the same predictions since the nominal pronoun should not be found preceded by modifying adjectives or followed by a noun complement, and the wrong

prediction should not be fulfilled. Unfortunately, this hypothesis is not valid and separate categories are necessary. Она in the sentence она ничего не сказала (Figure 7) cannot have a noun complement under any circumstances. Ничего is really the object of the negated verb (see Part 4).

C. Adjective-noun Homography

Adjective-noun homography in Russian is not uncommon and an appropriate method for handling the ambiguity is essential since every prediction that can be fulfilled by a noun can also be fulfilled by an adjective. The pronoun этом (Figure 3) exhibited this ambiguity. The homograph многие in the basic phrase многие физические явления (Figure 8) is more illuminating. As used in the example многие is an adjective. It is used as a noun in the counterpart example многие русских авторов.

The choice of homographs, which is determined by their ordering, can be based either on the statistical frequency of expectation or on fail-safe error indications in the subsequent analysis. The latter basis is obviously preferable for the ultimate achievement of an error-free analysis, and adjective-noun homographs are appropriately ordered with the adjective always preceding the noun.

An adjective predicts a master with a 01 PSI; that is, the master must occur. To ensure that the master occurs immediately after the adjective, with certain exceptions already mentioned, an end-wipe sentinel is placed underneath it in the pool. The example of Figure 3 has indicated that the lack of a master results in a quick error indication in the form of a wiped prediction recorded in hindsight. In contrast, the noun makes only the weak

prediction of a noun complement with a 00 PSI. If no noun complement is found, the prediction is wiped and no record is kept that the prediction ever occurred. The net result is that if the nominal choice is in error, no explicit indication of the error is left.

Consider the basic phrase in Figure 8 as an example. By selecting the adjective before the noun, this phrase is analyzed correctly. But now assume that the phrase is the alternative многие русских авторов. The second word, русских, cannot fulfill the master prediction of многие since there is no agreement in case and number. The master prediction is therefore wiped by the following end-wipe sentinel. The error is detected and can be corrected since the only alternative action is to consider многие as a noun and predict a noun complement.

Now consider the counterexample where the noun is selected before the adjective. This time the alternative phrase is analyzed correctly, whereas многие физические явления is the problem. If многие is selected as a noun, a noun complement prediction is placed at the top of the pool. физические cannot fulfill the noun complement prediction, the prediction is wiped, and the analysis proceeds to test the other predictions in the pool with no indication of error. If there is another prediction located farther down in the pool that can be fulfilled by a nominative or accusative adjective, the program will assume that the syntax of the sentence is still being correctly analyzed. Only if there is no other intersection will физические be labeled arbitrary choice and will an error be indicated. Note that in selecting a noun first the error indication is not assured but is up to chance. This is a highly undesirable predicament!

D. The Prepositional Phrase

The structure of a prepositional phrase is almost identical with that of a noun phrase, the only difference being that the leading basic phrase in a prepositional phrase is preceded by a preposition. In discussing the basic phrase or noun phrase, the analysis of the first word of the phrase was not considered but was postponed temporarily. Similarly, the discussion of the intersection of the preposition will be postponed and only the analysis of the phrase is considered.

Every preposition predicts that a preposition complement, a basic phrase in a case governed by the preposition, must follow immediately after the preposition. The 01 PSI of the preposition complement and the end-wipe sentinel placed immediately below the prediction present a situation identical to the master prediction already discussed.

Every preposition can govern one or more cases. This information is stored in word 6 of the dictionary entry of the preposition. In the first example, the preposition при of the phrase при различных исследованиях (Figure 9) can govern only the locative case. This is represented by the two P's in word 6, one each for the singular and the plural. In this example one of the three alternative arguments for the following adjective различных intersects with the preposition complement prediction. The identification of the following locative plural noun исследованиях completes the analysis of the phrase.

Multiple intersections resulting in case and number ambiguities are represented by the examples для ее описания (Figure 10) and в любой предыдущий момент (Figure 11). In the former example three of the alternative

arguments of ее intersect with the preposition complement prediction: /pronoun, adjectival, genitive, singular/, /pronoun, adjectival, genitive, plural/, and /pronoun, nominal, genitive, singular/. The first two can be selected simultaneously since the syntactic word class is the same, while the third can be entered only in hindsight. The subsequent master prediction can be fulfilled by a genitive singular or genitive plural noun. Here описания is genitive singular. In the latter example case intersections of the preposition complement are ambiguous, both the accusative singular and locative singular alternative arguments of любой intersecting with the prediction made by в. The second adjective предыдущий agrees with only one of the possible cases, resolving the ambiguity.

In both previous examples the ambiguity is finally resolved by a third word of the prepositional phrase. Such ambiguities are not always resolved. The analysis of the prepositional phrase в области (Figure 12) gives two syntactic possibilities, locative singular or accusative plural. No subsequent word in the phrase exists to resolve the ambiguity. Unless the reader semantically analyzes the context of в области, he cannot determine whether the author meant "in the region" or "in the regions." The resolution of such ambiguities in the predictive analysis program is dependent on the prediction of the preposition and its linkage to the word it modifies.

L. The Numeral Phrase

All the cardinal numerals and other words expressing numeric concepts are treated in a special manner because they do not follow the same rules as ordinary adjectives and nouns. In speaking of a numeral phrase, only the set of words that are treated in the special manner is considered.

The ordinal numerals are not included in this set but are coded as ordinary adjectives. A complete list of the words that fall into the set of numerals has been given by Magassy.[18]

Numerals fulfill the same predictions as ordinary nouns and adjectives. In addition, if a numeral is nominally coded, normal nominal predictions can be made. However, if a numeral is adjectivally coded, which is the usual situation, a new type of master prediction, the numeral master, is made since the case and number of the numeral master do not always agree with the case and number of the numeral. Numeral masters are marked with an "N" instead of the normal "M" in word 9 to distinguish them from ordinary masters.

Three types of "agreement," depending on numeral type, occur between numerals and numeral masters: (1) the case and number of the numeral master agree with the case and number of the numeral; (2) the case and number of the numeral master do not agree with the case and number of the numeral; and (3) the case and number of the numeral master do not agree with the case and number of the numeral, and, in addition, the case and number of the adjectival numeral master do not agree with the case and number of a nominal numeral master. In the first two cases, if the numeral master is an adjective, the noun that completes the phrase agrees with the adjective as in an ordinary basic phrase.

Due to the above-mentioned special properties, numerals are coded in a somewhat different manner from adjectives or nouns.[18] The case and number combinations that the numeral can govern are entered in word 8. If a numeral is of the first two types then the information in word 8 is coded

in the normal "NGACIPNGACIP" notation; if a numeral is of the third type, a special "RZV" code is used.

The numeral одной in the phrase молекул одной жидкости (Figure 13) is an example of the first type. The hindsight for most numerals is unusually large since most numerals have adjectival and nominal homographs and therefore account for a large number of intersections. The alternative arguments of одной intersect eight times with predictions in the pool; the first intersection is between the /numeral, adjectival, genitive, singular/ alternative argument and the noun complement prediction made by молекул.

When a numeral is accepted as an adjective, the numeral predictor subroutine examines whether or not the numeral can have a normal agreement with the preferred argument of its numeral master. This test is accomplished in two stages. First the program checks for the "RZV" notation. If this is not found, the program looks for an intersection between the preferred argument of the numeral and the information stored in word 8. An intersection indicates that a normal numeral master should be predicted and the numeral is of the first type. No intersection would indicate the second type. In the illustrated example since the information in word 6 is identical to the information in word 8, the numeral has to be of the first type. The numeral is accepted as a genitive singular noun complement and жидкости is then accepted as the genitive singular master of the noun complement.

A second example of a numeral of the first type is illustrated by the numeral двух in the phrase в двух статьях сборника (Figure 14). Here are four multiple intersections between adjectival alternative arguments of двух and the preposition complement prediction of в. All four intersections are recorded and checked against the agreement code in word 8.

Only two intersections, accusative plural and locative plural, result from this test, so that the ensuing numeral master can be fulfilled only by an accusative or locative plural numeral master. The following noun статьях turns out to be locative plural and the numeral master prediction is fulfilled.

When the numeral predictor subroutine examines an analyzed numeral and no intersection exists between the preferred argument of the analyzed numeral and the agreement code from the dictionary entry in word 8, a numeral master is predicted with whatever case and number combinations that are listed in the agreement code. The information in the preferred argument of the analyzed numeral is completely disregarded. If there is no intersection whatsoever with the preferred argument and the agreement code, then the numeral is of the second type. The numeral пять in the phrase пять остроумных математиков (Figure 15)* illustrates this type. Пять is accepted as the subject, either singular or plural, of the sentence. The agreement code states that only a genitive plural master can follow the numeral. This genitive plural numeral master prediction is then fulfilled by the adjective остроумных.

The numeral phrase is still incomplete since a noun is needed to terminate the phrase. The adjective остроумных predicts a second numeral master agreeing in case and number. Although the gender is not tested, it should agree also. This test is analogous to the ordinary basic phrase containing more than one adjective, where each adjective predicts a new

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* The verb пришли in Figure 15 and the verb пришел in Figure 20 are listed in the dictionary at this time only in the reflexive form.

master until finally a noun is analyzed. In this example the phrase is completely analyzed after the noun математиков is accepted as the second numeral master of the subject.

The numerals of the third type differ from the other types in that their numeral masters do not obey the simple rules of agreement. Whereas nominal numeral masters of the third type of numeral always appear in the genitive singular, adjectival numeral masters are either nominative plural or genitive plural. This unusual type of agreement is indicated by the coding "OR0000ZV0000" in word 8 of the dictionary item. The single numeral master prediction made by such numerals is organized to accept either a genitive singular noun or a nominative plural or genitive plural adjective. If a noun fulfills the prediction, then the numeral phrase is completely analyzed. However, if an adjective fulfills the prediction, the adjective generates a new numeral master prediction that will accept either the genitive singular noun or another adjective in the same case and number as the adjective making the prediction.

Three phrases illustrate the various combinations that are analyzed by the predictive analysis program. The noun жидкости is analyzed as the genitive singular numeral master following the numeral in the phrase две жидкости (Figure 16). The syntactic analyses of a genitive singular noun numeral master following a nominative plural adjective numeral master and a genitive plural adjective numeral master are illustrated by the phrases четыре черные книги (Figure 17) and четыре черных книги (Figure 18), respectively.

F. Numeral Chaining

Another aspect of the numeral phrase poses special problems for automatic syntactic analysis. When a number greater than twenty is written out, all the numerals but the last in the sequence are written in the nominative case, regardless of the syntactic usage of the set of words. Only the last word of the sequence is inflected in the normal manner. In the phrase при сто сорок двух авторах, сто and сорок are written in the nominative case while двух is in the expected locative case.

The chain numeral prediction has been adopted to handle this problem. As the following examples indicate, the present rules for the chain numeral are not completely effective. Every numeral predicts a numeral master and a chain numeral mutually exclusively (with a PSI between 20 and 29). A chain numeral prediction can be fulfilled by any numeral that agrees with the chain numeral making the prediction in case, number, and gender. A chain numeral can also be accepted by infinity although, in this case, the numeral must have a nominative alternative argument. A chain numeral is assigned a 23 PSI and the numeral master is assigned a 21 PSI. Thus if neither of the mutually exclusive predictions is fulfilled, the single prediction with the 21 PSI is recorded on hindsight when the set of predictions is wiped. The recording of a single prediction is sufficient to indicate the error. If one of the predictions with a 23 PSI is fulfilled, then the prediction with a 21 PSI is wiped, unrecorded on hindsight.

A chain numeral can occur in one of two ways: the chain numeral is adjoined to a second cardinal numeral or the chain numeral is adjoined to an ordinal, a word that is considered an ordinary adjective rather than a numeral.

The analysis of a chain numeral adjoined to other cardinal numerals has been completed without error in all the instances in the analyzed texts. For example, двести in the phrase двести тридцать два человека (Figure 19)* fulfills the subject prediction and then predicts mutually exclusively a nominative chain numeral and a genitive plural numeral master. Тридцать fulfills the chain numeral prediction and itself makes the same two predictions. Два fulfills the chain numeral prediction made by тридцать and, in turn, makes another chain numeral prediction and an "RZV" numeral master prediction. The latter prediction is fulfilled by the genitive singular noun человека. Such a numeral phrase is indistinguishable from an ordinary numeral phrase since the same "N" mark, which indicates numeral masters, erroneously indicates a chain numeral.

A correct analysis cannot be reached if a chain numeral phrase terminates in an ordinal numeral as in сто сорок второй человек (Figure 20). The ordinal would have to be accepted as a chain numeral for the analysis to succeed. However, ordinals are classified as ordinary adjectives and thus cannot fulfill the chain numeral prediction. This raises the question of whether ordinal numerals should not be considered as numerals that belong to regular inflected adjectival classes. The governmental properties of ordinal numerals are different from ordinary adjectives, as illustrated in Figure 20.

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* A "bug" in the dictionary lookup program does not recognize any form of человек except the canonical form.

4. Government and Objects

The two syntactic relationships "agreement" and "government" can be distinguished with reference to the question of matching. If the grammatical characteristics (case, number, and gender) of an adjective and noun match, the relationship is agreement. Otherwise, the relationship is considered government. Further, the two concepts can be distinguished since wherever agreement is mentioned, either case and number or case, number, and gender are tested; wherever government is mentioned, case alone is tested. This latter division seems more definitive and is used here. Thus the numeral master agrees with the numeral and the numeral does not govern the numeral master. The number of the numeral master is specified, even though it may be plural for an adjectival numeral master and singular for a nominal numeral master.

The phrase structures identified by agreement have been considered in Part 3 and the structures identified by government are discussed in this part. The prediction that is usually generated to fulfill a government relationship is the object, although several others exist. Among these, the preposition complement and the noun complement have already been mentioned (Part 3).

A. The Verb Phrase

The third simple deeply nested phrase structure recognized by the predictive syntactic analysis program is the verb phrase. It is somewhat more complex than the noun phrase or prepositional phrase since it may include one or both of the other two types. Both noun phrases and

prepositional phrases have a similar structure, adjectives and a noun following an initial adjective or preposition, respectively. A verb phrase consists of a verb that may be followed by a prepositional phrase, one or more objects (noun phrases), a verb master (an infinitive verb), or any combination of the three. The verb phrase may also consist of a verb followed by a clause as the object, but this structure is not identified in the present version of the program. In all three deeply nested phrase structures other words such as adverbs that modify individual words in the phrase are also found (see Figure 22).

The verb master is predicted by every verb just as a noun complement is predicted by every noun. The object and preposition object are predicted only if information is present in the dictionary item of the verb to indicate that they are expected to occur. Examples of each of the three types of verb phrases are given in the two phrases сводится к изготовлению (Figure 21) and требуют для своего изучения умения вычислать вероятности (Figure 22).

A preposition object prediction of the preposition к governing the dative case is made by the verb сводится. The "D9" mark in word 6 is the indicator of this prediction. A verb master and an instrumental agent prediction (Part 4C) are placed underneath the preposition object prediction in the pool. The instrumental agent is predicted because the verb is reflexive. The preposition к fulfills the preposition object prediction.

In the second example (Figure 22), the verb требуют predicts a preposition object (F4), a genitive object (P5), and a verb master. The preposition object predicted by требуют is от governing the genitive case. The preposition для which follows требуют cannot fulfill the preposition

object prediction and, instead, is accepted by infinity. The entire prepositional phrase для своего изучения умения is then analyzed. The infinitive verb вычислать then fulfills the verb master prediction of требуют and, in turn, predicts an accusative object (P7).

The present program does not make the object prediction of a verb mutually exclusive with the verb master prediction. Thus an object prediction remains in the pool if the verb master is fulfilled. In this example the noun вероятности fulfills both the accusative object prediction of вычислать and the genitive object prediction of требуют. The correct analysis is made because the accusative object was predicted after the genitive object and therefore is higher up in the prediction pool.

The prepositional phrase для своего изучения умения is an example of an unpredicted structure that modifies a word in a verb phrase and that is part of the verb phrase itself.

The preposition object prediction can serve another purpose in addition to linking the prepositional phrase to a verb or participle. Since the preposition object prediction states not only the preposition predicted but also the case governed by the preposition, the preposition complement prediction of the preposition is less ambiguous. In the example сталкивается с другими (Figure 23) the preposition complement predicted by с is limited by the "J1" code in the 10-word item of the preceding verb only to an instrumental basic phrase although usually the prediction can be fulfilled by an instrumental, genitive, or accusative basic phrase. So far, no example has been found where this process resolved an actual ambiguity.

The preposition object and object predictions are made based on grammatical information in Die Russischen Verben[19] which was coded in the

dictionary entries. Both a first government and a second government are listed in the source book although this distinction has been kept only with the object codes, a "P" code for the first government and an "L" code for the second government. At the time the coding was transcribed, no syntactic analysis program existed with which to verify the accuracy and the completeness of the coding. A comprehensive verification still has not been made, although it was considered by Plath some time ago.[20] The single overriding problem in the coding is with the government of an accusative object. Sometimes, when a verb is obviously transitive, the accusative government is not mentioned in the reference book used. Thus the absence of a government code in word 6 can indicate either that the verb cannot govern an object or that the verb is an ordinary transitive verb. For an automatic syntactic analysis technique, this distinction must be made explicitly.

The preposition object coding is not adequate at this time. The preposition object prediction was recently added to the analysis program on a limited scale. The prediction with a 00 PSI is made only by verbs. Thus, unless the preposition immediately follows the verb, the prediction is lost. In this limited manner only 12 of 614 prepositions in the analyzed texts were selected as preposition objects. A study of the texts has indicated that a total of 33 of the prepositions could be selected if the PSI were changed from 00 to 03 and participles also predicted preposition objects. This still seems to be too small a number and suggests that the coding information taken from Die Russischen Verben is insufficient for present purposes.

The two-character alphanumeric coding format for verbal government has been proven inefficient. It is neither suitable for automatic interpretation by a computer program nor sufficiently mnemonic to assist the coder or reader of program output material. The latter criticism is levied particularly at the preposition object codes.

Not all the government object predictions are made in the current predictive analysis program. Several analyses with missing object predictions as in служащие опорой всем знаниям (Figure 24), were found. In this example the "L8" in word 8 of the dictionary entry of служащие is not identified and an instrumental object prediction that would be fulfilled by опорой is not made.

The relative merits of testing an adjective before or after a noun when an adjective-noun homograph appears have been mentioned previously (Part 3C). The same problem appears in testing verb-noun and verb-adjective homographs against a given prediction. In the verb-noun case the verb alternative argument should be tested before the noun alternative argument since a verb makes predictions with 01 PSI whereas a noun does not. The verb-adjective homograph is typified by встречаем (Figure 25) where a rare and dubious short-form adjective forms a homograph with a normal finite verb form. Here too the verb alternative argument should be tested first, but on the grounds that the other possibility is so rare if existent at all as to be negligible. This example actually provides a third homographic form since встречаем can also be used participially.

B. Other Object Predictors

A participle is a form derived from a verb and carries with it the government characteristics of the verb. The preposition object, verb master, and object predictions that are made by verbs can also be made by participles. The coding information that was entered into the dictionary items of the verbs was also entered into the participle items. At this time the coding is not completely utilized and a preposition object is not predicted by participles. Studies indicate that with the present coding only 12 of the 614 prepositions would fulfill this prediction even if expanded to a 03 PSI. The participle followed by an object and followed by a verb master are illustrated by определяющих искомое (Figure 26) and розволяющие выделить (Figure 27), respectively.

An unnecessary programming difficulty has been caused by the government coding. In a participial 10-word item this coding is not located in the same place as the equivalent coding in a verbal 10-word item. The reason is historical, since participles were assigned to the adjectival morphological class and so had different information allocated to the spaces assigned to verbal government coding. In the future this should be taken into account. The verb and adjective morphological formats should be correlated and uniform government coding should be given verbs and participles.

Just as verbs and participles commonly govern objects and verb masters, so certain normal adjectives and nouns govern objects and verb masters. (A new name for a verb infinitive governed by a noun, adjective, or adverb is needed.) The nouns that behave in this manner usually have

originated from verbal forms. Such a noun is попытка in the phrase попытка осуществить мисль (Figure 28). The "P9" code indicating verb master government is in word 8.

The phrase of Figure 2, подобные антенные системы, contained an adjective, подобные, that was marked to predict a dative object ("P2"). If the object had occurred, it would have had to precede the next word of the basic phrase interrupting the analysis of the basic phrase. Such a dative is illustrated in назвать выделенный нами класс (Figure 29). In this phrase the participle выделенный is used adjectivally as an object and predicts an agent (see Part 4C) prior to predicting a master. The pronoun нами fulfills the agent prediction before the noun класс fulfills the adjectival master prediction.

The objects of an adjective or of a participle used adjectivally must precede the master. Therefore, whenever an adjective or participle used adjectivally predicts objects, the predictions are placed at the top of the pool. An end-wipe sentinel follows. Only then are the master prediction and a second end-wipe sentinel placed in the pool. In this manner the object predictions are fulfilled before the master prediction in the event of several intersections, and if the object predictions are not fulfilled the end wipe ensures that no trace of the predictions remains in the pool. Once the master is fulfilled, the objects of the adjective cannot occur again.

The object-master ordering in the prediction pool is worthy of further consideration. Although, on the one hand, the object must be placed first since it must be fulfilled first, on the other hand, if the alternative

arguments of a word fulfill both an object and the master prediction, the correct intersection is almost always the master. Yet, by this order in the pool, the object is identified and the master placed in hindsight. Two such intersections occur with the alternative arguments of области and the dative object prediction, and the locative, singular, and feminine master prediction of заданной in the phrase в заданной области пространства (Figure 30)*. For such an occurrence, an override procedure has been established whereby the master intersection is chosen. Although this results in a correct analysis as the example illustrates, it is an ad-hoc procedure in the predictive analysis program. No harm results if the object intersection is chosen because the master prediction has a 01 PSI, and a wiped 01 PSI prediction is a clear error indication. Any procedure that is essential to the syntactic analysis of Russian will be added to the program. However, in an effort to provide a simple and elegant analysis technique, nonessential procedures such as the master-object override should be omitted.

C. Agents

The agent prediction, made concurrently with object predictions, may be fulfilled only by a basic phrase in the instrumental case. An agent noun phrase indicates the means or agent by which the action expressed by a verb, participle, or verbal noun is accomplished.

* A "bug" in the experimental program appears in this and several other following illustrations. Some agent predictions are erroneously being predicted with 01 PSI. Thus, if the prediction is wiped, a record appears on hindsight. All agent predictions should be made with 03 PSI.

Coding to distinguish agent government from object government does not exist in the dictionary items, so it is necessary to interpret certain instrumental object codes as agent codes. A general set of rules has been adopted to detect potential agent predictions fairly accurately. Verbs that are reflexive and would normally (i.e., when nonreflexive) take an accusative object, participles which are passive or reflexive and would normally take an accusative object, and verbal nouns (which belong to morphological class N10) which are marked to take an instrumental object are all marked by a program* just prior to the syntactic analysis program so that an agent can then be predicted. An "R4" is placed in the appropriate place in the 10-word item as an identifying mark.

Three examples serve to indicate the three situations when agents are expected to occur. Облегчается снижением (Figure 31) is an example of an agent of a verb. The following two phrases, заполненных диэлектриком (Figure 32) and заполнение волновода диэлектриком (Figure 33), are examples of an agent governed by a participle and governed by a verbal noun, respectively.

Although the analysis of agents usually works quite well, errors appear on rare occasions. One error is represented by становится практически однородной (Figure 34), where an agent is predicted because the present program does not distinguish the copulative verbs like становится which take an instrumental object but not an agent. The only exception is the copulative verb бутъ (see Part 4D), the forms of which are distinctly marked and are recognized by the program. Another error which appears in the phrase

* This program is described in detail by Isenberg.[7]

называемого командой (Figure 35) is due to a legitimate double intersection. The participle называемого takes both an instrumental object and an agent as indicated by the "P4" and "R4" in word 8. The object and the agent of such participles can often be distinguished because the agent would be expected to be animate. The present tests do not provide for such sophisticated details.

In passive constructions an agent represents the logical subject of the action, and in such cases would appear as the formal subject if the construction were transformed into an active one. However, it is also possible to have agents (of means) in active constructions such as in он режет хлеб ножом. The relation of verb to agent and verb to object are quite different with appropriate differences in translation.

D. The Verb Быть

The various forms of the verb быть have been assigned to a unique class to facilitate the identification of verb phrases containing a form of быть. Every form of быть predicts a verb master as does any other verb. In addition, быть can govern a verb complement, namely a short-form adjective, and either a nominative or instrumental object. The three predictions of a verb master, object, and verb complement are made mutually exclusively and the object prediction has a 21 PSI. Examples of each type of verb phrase containing a form of быть are provided by будет находиться (Figure 36), было положено (Figure 37), есть два доклада (Figure 38), and быть студентом (Figure 39). Находиться is the verb master, положено is the verb complement, два доклада is the nominative object basic phrase, and студентом is the instrumental object.

In Russian, as in English with the verb "to be," быть can be followed by a predicate adjective, that is, an ordinary long-form adjective not followed by a noun. This occurrence is not taken into account at this time and the master prediction made by such an adjective is marked in hindsight when it is wiped, as in the phrase может быть очень плохим (Figure 40). If an adjective fulfills an object prediction that was generated by a form of быть, the master prediction made by the adjective should be given a 03 PSI.

E. Adverbs and Negated Verbs

Adverbial forms are very difficult to predict since there are no grammatical characteristics such as person, number, and gender that can be used to help in the analysis. Also, an adverb usually precedes the word modified and, of course, presents a situation that is difficult to handle in the left-to-right predictive syntactic analysis program. Because of these problems adverbs are currently accepted by infinity whenever they occur.

Adverbial forms are often homographic with conjunctions, prepositions, and short-form adjectives. Since short-form adjectives can be accepted only by a finite prediction, they will always take precedence over the infinite adverb intersection by means of the override. Prepositions, however, are usually accepted by infinity and thus with adverb-preposition homographs there is a problem of choosing which intersection to make first since both intersections occur with the same prediction. The same argument is used here as with the adjective-noun homograph and the noun-verb homograph; the preposition intersection should always precede the adverb intersection. The preposition makes a preposition complement prediction with a 01 PSI, whereas the adverb makes no such strong prediction, and usually makes no

prediction at all. Conjunctions are also accepted by infinity, and since they activate several predictions with 01 PSI (see Part 6), they should be accepted before adverbs.

The difficulties involved in a preposition-adverb homograph are made clear in the phrase около двадцати научно-исследовательских организаций (Figure 41). In this phrase a seemingly correct syntactic analysis can be reached with either interpretation of около. The possible analysis of a preposition complement following около suggests that the preposition homograph should be selected. Of the instances of such homography observed in the analyzed texts, the correct choice has almost invariably been the preposition homograph.

With the adverb syntactic role relegated to the least desirable one, the analysis technique is subject to error whenever the adverbial homograph is indeed the correct one to be selected. The sentence Формально, если задаваться...точно так же протекают ... (Figure 42) contains two such errors. The first word формально is assigned the role of predicate head rather than the role of an adverb. This error is difficult to detect because such a predicate head often does not have an explicit subject (see Part 5). A second similar error occurs with точно which is selected as a conjunction rather than an adverb. The verb протекают, which fulfills the predicate head prediction of the supposed subordinate clause introduced by точно, actually should fulfill the main clause predicate head prediction previously fulfilled by формально.

Predictions are currently made by adverbs fulfilling several familiar roles: a negative (не and ни, although the latter is not recognized as a

negative at this time), a comparative, and a subset of the latter, a comparative used as a predicate. The adverb as a comparative predicate is mentioned in Part 5 and as an ordinary comparative in Part 8.

If a verb normally governing an accusative object is negated by an immediately preceding negative adverb, the verb can govern either a genitive object or an accusative object, although not both together. Since the negative adverb occurs before the verb and the object occurs after the verb, it is necessary to transmit the information from negative adverb to verb to object.

A negative adverb is accepted by infinity as any other adverb. It makes a special negative prediction that can be fulfilled by a verb, participle, or negated adverb, which is just another adverb following не. If the negative prediction is fulfilled by a verb or participle, a distinctive mark, an "N" in character position 10 of word 8, is entered into the 10-word item of the verb or participle. The testing process then continues but the intersection with the negative prediction is not recorded. Thus the verb or participle can fulfill its normal prediction. When the object predictions of the accepted verb or participle are made, the "N" is tested for, and if present, the genitive object prediction is made.

The process is best described by considering an example such as the pair of sentences: математик не хотел видеть ответы (Figure 44) and математик не хотел видеть ответов (Figure 45)*. Математик is identified as the subject of the sentence, after which не is accepted by infinity as a

* In typing these two sentences in text $, видеть was misspelled видет, resulting in an incorrect dictionary output.

negative adverb. A negative prediction is placed at the top of the new prediction pool. This prediction is fulfilled by the following word, the verb хотел. The negative subroutine places an "N" in word 8 of the 10-word item of хотел but does not register a success. Instead, the analysis proceeds as if there had been no intersection. Хотел finally fulfills the predicate head prediction and is marked as the predicate of the sentence. From the grammatical unit of хотел, a genitive object ("P5" in word 5), an end-wipe sentinel and a verb master marked with an "N" in the grammar word are predicted. The "N" is placed in the grammar word if an "N" exists in character position 10 of word 8.

The following word, видеть, is an infinitive verb that fulfills the verb master prediction after the object prediction has been wiped. Видеть normally predicts an accusative object ("P3"). A genitive or accusative object prediction is made instead when the "N" in the grammar word is tested. In the former example the accusative ответы and in the latter example the genitive ответов fulfill the genitive or accusative object prediction.

The accusative-genitive ambiguity is illustrated by the sentence она не хотела читать книги (Figure 45). The reader does not know whether "she did not want to read the book" or whether "she did not want to read books" unless the context of the sentence is known. The wiped genitive object prediction in this illustration is due to the "P5" coding in the 10-word item of хотела. The same error occurred in the example in Figure 22.

If a negative prediction is fulfilled by a second adverb following ne, the prediction pool is updated in the normal manner and the indicator that a negative adverb had occurred is lost. This is desirable since in

the structure: не + adverb + verb + object, the object cannot occur in the genitive case unless the verb normally can govern a genitive object.

The genitive object prediction usually caused by the presence of a negative adverb preceding a verb together with the noun complement prediction often cause multiple intersections that are difficult to resolve. A classical example is indicated by the sentence читатель не найдет в сборнике систематического изложения теории и техники полосковых линий (Figure 46). After the predicate найдет is identified, an accusative or genitive object prediction is placed at the top of the pool. The locative prepositional phrase в сборнике is then analyzed. The noun сборнике leaves a noun complement prediction at the top of the new pool, above the genitive object prediction. Obviously, any genitive adjective or noun can fulfill both predictions and a semantic resolution of the problem is required. In the sentence in the example the situation is compounded since there are three places in the sentence where the ambiguity exists. Either систематического, теории, техники, or полосковых could be, syntactically, the object of найдет. Without a semantic analysis, all possible translations would have to be given. The resolution is obvious only to a trained human reader, the adjective систематического in this context acting as the object of не найдет.

The prediction pool is not normally updated after an adverb is identified. Since the predictions for the word following the adverb are the same as the predictions when the adverb was identified, the entire predicting cycle of the program is skipped. However, since a negative adverb makes predictions which have to be placed at the top of the pool, the predicting cycle is not skipped after a не and the pool is updated in the normal manner.

It was only lately noted that, with the exception of the added negative prediction, the other predictions still should not be altered. The particular problems ensuing from this difficulty are illustrated in the sections on participial phrases (Part 6) and on compound structures (Part 7). The same argument is valid for any other type of adverbial form from which predictions are made.

5. The Components of a Clause: Subject and Predicate

Only several simple operations in the predictive syntactic analysis program have been used to analyze the structures described in the last two sections. In all cases predictions have been made and wiped but never modified after they had been entered in the pool. The modification of predictions is the main additional tool utilized to analyze the main components of a clause, the subject and the predicate.

Great freedom of word ordering exists in an inflected language such as Russian. For the analysis of any given clause, no a priori indication specifies whether the subject or predicate will come first. Further, the object, which is usually considered part of the predicate, may precede the predicate head, the first word of a verb phrase or short-form adjective phrase. To increase the effectiveness of the predictive analysis technique, it is highly desirable to recognize the subject, predicate, and object of a clause on a single pass regardless of the order in which they occur.

One or more of these three elements might not occur in a given clause or might be implicit due to the construction of the clause. Clauses with missing components will be considered after a discussion of the analysis of clauses containing all the components.

A. Clauses with an Explicit Subject, Predicate Head, and Object

Of the six possible orderings of the subject, predicate head, and object, four have been found among the sentences of the six analyzed texts. They are:

(1) subject - predicate head - object;
(2) predicate head - object - subject;
(3) object - subject - predicate head;
(4) object - predicate head - subject.

A close look at various examples has shown that the more alternative arguments in the subjects and objects of clauses, the more likely the clause components are ordered more "normally." In a short sentence with no subject-object ambiguity, all six orderings are possible: я вижу вас, я вас вижу, вижу я вас, вижу вас я, вас я вижу, and вас вижу я.

If the object of the clause occurs after the verb predicate head, the object can be identified by the ordinary object prediction generated by the coding in the 10-word item of the verb. However, if the object precedes the predicate head, a prediction must be inserted into the pool to identify the object. To distinguish the object prediction artificially inserted into the pool from the object prediction made by a verb, the former has been called a left object, referring to the position of the object to the left of the predicate head in a sentence. This prediction can be fulfilled by an instrumental or accusative basic phrase. For programming convenience, two left object predictions are put into the pool, one for each case. The order of the four predictions in the pool is:

(1) subject;
(2) left object (instrumental);
(3) left object (accusative);
(4) predicate head.

If the predicate head prediction is fulfilled before the left object predictions, the latter are wiped from the pool and are replaced by any object predictions made by the verb which has fulfilled the predicate head prediction. Only one "object" label is used by the program and the object of a clause is indistinguishable from any other type of object, such as, for example, the object of a verb infinitive subject. A set of names for distinguishing different types of object should be instituted.

Most clauses have the subject - predicate head - object order and are typified by the clause мы находим весьма просто выражение (Figure 47). In this example the nominal pronoun мы is selected as the subject since it is unambiguously nominative plural. With the identification of the subject, a number of constraints can be put on the predicate head which must agree with the subject in person, number, and gender. The grammar words of the predicate head prediction are modified so that only a first person, plural, and masculine or feminine predicate head can fulfill the prediction. The left object prediction cannot be altered since no new information regarding objects can be obtained from a subject.

The second word, the verb находим, is an indicative verb that fulfills the predicate head prediction with the limitations on person, number, and gender. The verb intersects with the predicate head prediction and is accepted as the predicate of the clause. The two left object predictions are now wiped from the pool and the verb makes an accusative object

prediction based on the "P3" in word 5 of the 10-word item. Весьма is an adverb and is accepted by infinity without modifying the prediction pool. Просто is a short-form adjective that can be used predicatively or adverbially. The predicate head prediction is no longer in the pool, and просто can be accepted only as a second adverb. The following noun, выражение, is then accepted as the object of the transitive verb находим.

The next clause, практическое осуществление полосковых узлов отличается большой простотой (Figure 48), illustrates a similar order with an instrumental rather than an accusative object. Note that the subject noun phrase consists of four words, практическое осуществление полосковых узлов, but only the first word, the adjective практическое which fulfills the subject prediction, is responsible for the modifications in the predicate head prediction. After практическое is analyzed the predicate head is modified so that only a third person, singular, and neuter predicate can fulfill the prediction.

The intersection between the alternative arguments of практическое and the subject prediction is not unique since the adjective can also introduce an accusative basic phrase which could be a left object. This second intersection is stored in hindsight. Such multiple intersections with the left object prediction tend to be very common and often clutter the hindsight. There is, however, really no alternative as occasional errors occur and this is the only means of recognizing them.

The two clauses just described indicate the necessity of initially predicting both an accusative and an instrumental left object. Before the verb is recognized, no guess can be made of which type might occur. There

are several verbs which govern genitive or dative objects in addition to or instead of accusative or instrumental objects. A procedure for the identification of dative objects exists (see Part 5C), so that only the genitive object preceding the verb will result in an error. The only example found of such an error in the analyzed texts is the sentence она ничего не сказала, which was illustrated in Figure 7.

A rare verb infinitive subject is illustrated in the next clause дать возможность ... есть большой шаг ... (Figure 49). The infinitive subject limits the predicate head prediction to a third person, singular, and neuter predicate. There are two errors in the analysis of the part of the clause between the subject and the predicate head. Анализом is recognized as the agent of заключения, whereas it is actually used as the agent of проверить, an active construction. The program also cannot recognize the postpositional adjectives строгим and простым. The lack of unique object symbols is apparent in this clause where both возможность and большой are called objects although the former is not the object of the clause.

A large number of clauses have the object - predicate head - subject order, as in предметом настоящего сообщения является анализ (Figure 50). The identification of the noun предметом as the left object provides for the modification of the predicate head prediction, so that only a predicate that can govern an instrumental object can be accepted. With two mutually exclusive left object predictions in the pool, the intersection with one wipes both from the pool. After the noun complement basic phrase is analyzed, the verb является is tested, providing an example of a copulative verb that is not recognized as such and in which an "R4" agent prediction is

automatically inserted. However, since in both cases an instrumental basic phrase fulfills the prediction and such an instrumental basic phrase has been identified, the verb is accepted as the predicate head. With является as the predicate head, only a singular subject can fulfill the subject prediction. The noun анализ fits the description and is accepted.

Two separate left object predictions, one for the instrumental and one for the accusative, are not necessary. Just as multiple intersections can occur with object and preposition complement predictions, a combined instrumental-accusative left object can be used also.

Another interesting order is shown in the clause дает ответ статистическая теория диффузии (Figure 51) where both the subject and the object follow the predicate. Since the predicate head prediction is fulfilled before either the subject or left object predictions, the left object predictions are wiped, the subject prediction is modified so that only a third person, singular subject can be accepted, and a new accusative object prediction is entered into the pool. The noun ответ that follows the verb дает intersects with both the accusative object prediction and the modified subject prediction. The first intersection is with the new object prediction, so that "object" is chosen as the syntactic role of ответ. The following basic phrase, статистическая теория, is unambiguously nominative and can fulfill only the subject prediction, and in the process justifies the selection of ответ as the object.

One other example completes the description of the four orderings found in the analyzed texts: суммарную ширину...мы будем называть шириной полосы (Figure 52). The analysis of this clause contains several errors. The particular combination of errors makes it seem that the analysis is

correct. In this clause the object precedes the subject which, in turn, precedes the predicate. Further complication arises because a second object follows the predicate.

The analysis starts correctly with the identification of the initial noun phrase суммарную ширину отдельных полос as the accusative left object of the clause. The subordinate clause которая дается формулой (2) can be neglected for the purposes of the present exposition (see Part 6). The predicate head prediction is modified so that only a transitive verb can fulfill the prediction. After the analysis of the left object, the subject is discovered next. Мы fulfills only the subject prediction and further modifies the predicate head prediction whereby only a first person, plural, and masculine or feminine predicate can fulfill it. The following word, the verb будем, erroneously contains a "P3" (accusative object) in word 5 and thus fulfills the modified predicate head prediction.

Суммарную ширину is actually the object of the verb master называть. If будем did not have the "P3" code, the analysis would fail since the program does not contain a mechanism to analyze a clause in which the left object is the object of a verb master rather than of the predicate head. (See the comments in Part 4 regarding Figure 22.) The verb называть is correctly coded with both a "P3" and a "P4" to indicate that it can govern both an accusative and an instrumental object in one clause.

Although in all the previous examples of predicate head identification indicative verbs fulfilled the predicate head prediction, other forms can also fulfill this prediction. In the clause большая часть статей посвящена описанию (Figure 53), a short-form adjective посвящена fulfills

the predicate head prediction. Such a short-form adjective can be the predicate head regardless of the person of the subject. In the current program, however, the short-form adjective will not be accepted as the predicate head unless a third person predicate can be accepted. (This restriction is not likely to result in any errors since in scientific texts the probability of finding a short-form adjective used predicatively with a first- or second-person subject is almost nonexistent.) The number and gender of the short-form adjective must agree with the subject. Object predictions are made, based on the same codes that are found in verbs. In adjectival 10-word items these codes are all found in word 8.

The short-form adjective-adverb homograph is not always used predicatively. Particularly, if a short-form adjective-adverb homograph precedes a verb, the short-form adjective is selected as the predicate and there is no prediction in the pool for the indicative verb to fulfill. This problem appears in the clause собственно...приходится иметь (Figure 54). Собственно belongs to a class of words that are either short-form neuter adjectives or adverbs as indicated by the -о ending. The predictive analysis program analyzes собственно as the short-form adjective predicate head. When приходится is analyzed, there is no prediction for it to fulfill and it is marked an arbitrary choice. This type of error is not difficult to detect since an indicative verb can fulfill only a predicate Head prediction. If the prediction is not in the pool, the intersection of the word that previously fulfilled the prediction is the error.

All clauses are not analyzed so easily as those already discussed. For example, in физика и техника интересовало изучение процесса (Figure 55),

физика и техника are identified as the subjects of the clause and the second intersection with the left object prediction is noted in hindsight. The predicate head prediction is modified so that only a plural and feminine predicate can fulfill the prediction. Интересовало, however, is singular and neuter and cannot fulfill the predicate head or any other prediction in the pool. Obviously, физика и техника are the object of интересовало, and изучение is the singular neuter subject desired. This type of error would be quite easy to correct by an error-correcting program.

B. Clauses with Implicit or Missing Components

A more difficult problem than the recognition of errors in the analysis of words in a clause is the problem of knowing when a seemingly essential component is either implicit in the clause or need not be present at all.

The most common problem is the missing object or agent. As was mentioned earlier, the government coding of verbs or participles has been found lacking. One aspect not mentioned earlier is that there is no distinction between required and optional objects. With a distinctive code it would be possible to give 01 PSI to required objects and 03 PSI to optional ones. The verb проследить in the clause проследить за движением какой-либо молекулы (Figure 56) should make an object prediction with 03 PSI, so that when the end-wipe sentinel below the object prediction wipes the object prediction, no mention is made in the hindsight. As the program stands now, the wiped object prediction represents an error in analysis.

No attempt to look for errors indicated by wiped object predictions is contemplated or would be wise until a detailed study of the object coding in the dictionary entries is carried out.

An optional object prediction in the program would assist in resolving both intersections of the alternative arguments of a word with a subject and an object prediction. In the clause протекают и другие явления (Figure 57), другие is selected as the object of протекают instead of as the subject of the clause. Eventually the subject prediction is wiped and entered in the hindsight. Under present circumstances if другие were selected as the subject, the object prediction would be marked in hindsight and the solution of the problem would not be obvious to the program.

Under several circumstances the explicit subject of a clause can be missing. A subject is always implicit if an impersonal, such as можно in можно оценить увличение (Figure 58), is used as the predicate head. When an impersonal fulfills the predicate head prediction, the subject prediction is wiped from the pool with no mention made in hindsight.

Two types of predicate heads - neuter, singular, short-form adjectives and first person, plural, indicative verbs - often appear without explicit subjects. When перечислим in the clause перечислим несколько задач (Figure 59) is analyzed, the subject PSI is changed from 01 to 03 so that the analysis will be judged successful if no subject is found. The same action should take place with the neuter short-form adjective predicate.

The short-form adjectives and the impersonals belong to very similar classes. In a number of cases a word appears in the dictionary as a short-form adjective-impersonal homograph. This situation is entirely unnecessary and the impersonal dictionary entry can be eliminated. As an example видно in the clause отсюда видно (Figure 60), has three homographs: a short-form adjective, a parenthetic word, and an impersonal. The impersonal performs

no useful function that is not attributed to the short-form adjective also, so that the third entry is redundant. Parenthetic words are presently treated as adverbs, although in this instance the adverbial function of видно is already stated in the short-form adjective dictionary entry.

One last predicate form that does not take an explicit subject is the verb infinitive used as a predicate after если and чтобы, such as характеризовать in the clause чтобы характеризовать кратко принцип (Figure 61). Both если and чтобы make special infinitive predicate head predictions with 00 PSI that can be fulfilled only by verb infinitives following the conjunctions and separated from the conjunctions only by constructions accepted by infinity. If the infinitive predicate head prediction is fulfilled, the ordinary subject and predicate head predictions for the clause are wiped from the pool.

C. Indirect Objects

A second special object prediction, the indirect object, is placed below the predicate head prediction when the subject, predicate head, and left object predictions are inserted in the pool. The indirect object prediction serves to identify both "datives of reference" and dative indirect objects. These two grammatical constructions are shown by the examples in Figures 62 and 64, respectively.

To analyze a dative of reference or a dative indirect object, the separate indirect object prediction is needed, since this prediction can be fulfilled in addition to the regular accusative or instrumental object predictions. The indirect object prediction was designed as a catchall for

all unpredicted dative basic phrases that might be considered indirect objects and was placed under the predicate head prediction so that it would not interfere with the other object predictions. Thus an intersection with the indirect object prediction cannot take place until every other possibility has been explored.

This approach is erroneous as several examples will show. The indirect object or dative of reference should be treated in the same manner as the accusative or instrumental object of the clause. A left indirect object that is a counterpart of the left object prediction should be introduced, located above the predicate head in the pool. If the left indirect object prediction is not fulfilled when the predicate is found, the prediction should be wiped from the pool with the same mechanism that wipes the left object prediction. After the predicate is identified, an indirect object prediction can be placed in the pool below any other predictions made by the predicate.

The examples that follow will show the result of the present indirect object prediction. The proposed scheme will be discussed relative to these examples.

The dative of reference which fulfills the present indirect object prediction would usually fulfill the left indirect object prediction under the proposed scheme. The clause мне кажется (Figure 62) is typical of this class. The dative of reference precedes the predicate head and no subject of the clause is ever found.

The identification of an indirect object is not foolproof due to potential multiple intersections. Ей in the clause ей или ему будет

холодно (Figure 63) can fulfill both the left object and the hypothetical left indirect object. The former intersection would be selected and the latter would be entered in hindsight since instrumental left objects are much more common than dative left indirect objects. Eventual recognition of the error would provide a mechanism for selecting the second intersection as the desired one.

If the dative indirect object follows the predicate head, it usually precedes the direct object. The indirect object should be predicted by the predicate head at the same time as the direct object. The coding in the dictionary for indirect objects is usually missing and an end-wipe sentinel intervenes between the objects predicted by the verb and the initial pool if the indirect object is identified. The analysis of the sentence она пишет ему письмо (Figure 64) is typical of this action. Under present rules the indirect object prediction is placed below the predicate head prediction, such that, after the analysis of она as the subject, the prediction pool would be ordered as follows:

(1) left objects;
(2) predicate head;
(3) indirect object.

The identification of the verb пишет as the predicate head would wipe the left object predictions and introduce an accusative object prediction:

(1) object (accusative);
(2) end wipe;
(3) indirect object.

Ему cannot fulfill the object prediction which is subsequently wiped by the sentinel. Even though ему is then analyzed as the indirect object, there is no prediction left for письмо to fulfill.

Under the proposed scheme the prediction pool after она is analyzed would be:

(1) left object;
(2) left indirect object;
(3) predicate head.

After пишет is analyzed as the predicate head, the pool would be:

(1) object (accusative);
(2) indirect object;
(3) end wipe.

Both the direct and indirect object in the pool would then be analyzed by the program.

D. Gaps in the Analysis Program

Two common structures are not yet identified by the predictive syntactic analysis program: the use of the comparative adverb as the predicate and the use of a complete subordinate clause as the object. Both these structures could be easily introduced by means of modifications to the existing tester subroutines.

The former oversight is illustrated by the adverb сложнее in the clause симметричные полосковые линии несколько сложнее несимметричных (Figure 65). Сложнее should be accepted by the predicate head prediction just as a short-form adjective can be accepted. The adverbial alternative intersection would be recorded in hindsight in the event of error.

The clause что длительность подключения кулонметров была выбрана (Figure 66) can be identified as the object of the verb master отметить. Alt[13] has pointed out that что, чтоб, чтобы, and как are conjunctions that can introduce object clauses. These conjunctions should be linked with the appropriate accusative object or left object predictions in the prediction pool when they are tested.

6. The Identification of Clauses and Higher Phrase Structures

To identify the individual more complex components of a sentence, the predictions of the grammatical constructions in the different components must be distinctly marked or otherwise isolated in the pool. The various groups of predictions are separated by the end-wipe and other sentinels that are described in this section.

After the mechanism necessary to identify simple sentences has been indicated, the comma end-wipe sentinel will be considered. Then recognition of subordinate clauses and finally of higher phrase structures follows.

A. Simple Sentences

It is fairly easy to analyze simple sentences in predictive syntactic analysis. The existence of all the main components of a simple sentence can be hypothesized before the analysis even starts. A set of initial predictions for a subject, left object, predicate head, and indirect object would merely have to be supplemented with an end-of-sentence prediction. The entire prediction pool would be ordered as follows (using the present indirect object prediction):

(1) subject;
(2) left object;
(3) predicate head;
(4) indirect object;
(5) end of sentence.

The end-of-sentence prediction actually serves both as a prediction and as a sentinel. First, as a prediction, it can be fulfilled by a period, semicolon, or any other punctuation mark that signifies the end of a sentence. A semicolon fulfills the prediction since in Russian it usually links syntactically independent complete sentences which the author wishes to keep together. Secondly, as a sentinel, the end-of-sentence prediction wipes the prediction pool after all the tests for intersections have been completed. This function has been named the end-of-sentence end wipe. If there has been an intersection with the end-of-sentence prediction, the sentence is complete and a check must be made to determine whether any predictions which have 01 PSI still remain in the prediction pool. If any are found, they indicate errors which should be corrected. The present mechanism wipes all the predictions in the pool and all those with 01 PSI are copied into hindsight.

If there has not been an intersection with the end-of-sentence prediction, then the sentence is still incomplete. At this point the program determines whether the alternative arguments of the word being tested have intersected with any of the predictions in the pool. If they have, the program proceeds to the predicting cycle: if not, then the word is an arbitrary choice. The prediction pool is completely wiped, all predictions with 01 PSI are entered in hindsight, and the chain number is incremented to point out this type of error. When these operations are completed,

control is passed to the arbitrary choice tester subroutine thus setting up appropriate conditions for the predicting cycle.

In a program which could automatically correct errors, it would not be necessary to perform some of these operations. Arbitrary choice would give sufficient indication that the forward analysis should stop and that the steps should be retraced until the error was found.

B. The Comma End-wipe Sentinel

Only a small number of the sentences found in scientific texts are simple sentences. The vast majority of the sentences are complex; that is, they have one or more subordinate clauses. For each clause in a sentence, a new set of subject - left object - predicate head - indirect object predictions has to be introduced into the pool. The more clauses in a sentence, the more sets of predictions that must be handled at one time. These sets of predictions must be kept distinct for a stable analysis to evolve.

While the subordinate clause in the sentence стул, на котором он сидел, был сломан is being analyzed, the adopted nesting hypothesis allows none of the predictions of the main clause, remaining in the pool after стул has been analyzed, to be fulfilled. Until there is an indication that the subordinate clause has been completely analyzed, there is no point in testing for the predicate of the main clause. The end-wipe sentinel does not help solve this problem since the scanning of the prediction pool is not affected by the presence of the sentinel. The end wipe does not distinguish between the predictions of the dependent clause and the predictions of the independent clause. That is, whereas the end-wipe sentinel eliminates predictions once they can no longer be fulfilled, the sentinel is of no help

in inhibiting the testing of other predictions, such as the predicate head of the main clause, which cannot be fulfilled until the subordinate clause has been completely analyzed.

Likewise, in the sentence когда она ушла, он сел на стул, after когда has been identified as a conjunction introducing a subordinate clause, the prediction pool contains two identical sets of subject - left object - predicate head - indirect object predictions. Она and ушла can fulfill both subject predictions and both predicate head predictions, respectively. The intersection with the main clause prediction is wrong in both cases since the subordinate clause must be completed before the analysis returns to the main clause.

To isolate sets of predictions in the pool and to inhibit the testing of some of these tests, a comma end-wipe sentinel has been adopted. This sentinel is inserted beneath all the other predictions for a clause. The name of the sentinel implies its origin. It has been hypothesized that subordinate clauses, as well as certain types of phrases, are isolated by commas from the rest of the sentence in which they occur; and the predictions for a new clause or phrase can be made after a comma has been analyzed. Actually even simple prepositional phrases are occasionally separated from the rest of the sentence by commas, as in the sentence здесь искомое, кроме самых простых случаев, определяется...(Figure 67).

In Russian writing, the rule that commas separate clauses is followed fairly strictly. Sentences do occur, however, in which the commas separating clauses are absent. Only one such sentence, почти вся настоящая глава будет...и только в последнем параграфе мы ладим...(Figure 68), has been

discovered in the analyzed texts. Whether or not such sentences are "good Russian" is an academic question since their solution will be necessary for an effective syntactic analysis scheme. When such sentences are handled by the predictive analysis program, the comma end wipe must be introduced when the new phrase or clause is detected. At that time perhaps a change of name of the sentinel might be in order!

Occasionally, during a sentence analysis, it is known that a deepest nested phrase or clause is only partially identified and that the next word must belong to the same structure. At other times there are clues that perhaps the deepest nested phrase or clause has been completely analyzed and that either a new phrase or clause might start or the analysis might return to a less deeply nested grammatical structure that was only partially analyzed before the deepest nested phrase or clause started. Therefore, the comma end-wipe sentinel must operate in two modes, which have been named the continue clause mode and the end clause mode. In the continue clause mode the comma end wipe inhibits the testing of the predictions located below it in the pool. In this mode the prediction pool is scanned as if there were no predictions located below the sentinel. (However, the predictions below the comma end wipe are retained when the pool is updated.) In the end clause mode the sentinel behaves as an ordinary end-wipe sentinel and the predictions below the comma end wipe are scanned in the normal manner.

When она from the sentence когда она ушла, он сел на стул is being analyzed, the comma end wipe should be in the continue clause mode since there is no question that the subordinate clause is currently being identified. In contrast, when the pronoun он located after the comma is being

analyzed, the sentinel should be in the end clause mode. At this time the analysis might return to the main clause (as it does in the example), might continue with another deeper nested structure, or might even remain in the same clause. The latter two possibilities are illustrated, respectively, by the sentences когда она ушла, одетая в новой шубе, он сел на стул and когда она стояла, ходила или бегала, ее нога болела.

Since the basic hypothesis for this sentinel is the assumption that, in Russian, commas separate certain phrases and clauses from the rest of a sentence, to help the analysis of these phrases and clauses, it is natural for the comma end wipe to be in the continue clause mode at all times except immediately following the recognition of a comma. The word after the comma should be tested with the sentinel in the end clause mode. The analysis of the word following a comma can then return to any previous depth of nesting. After that word is tested, all remaining comma end-wipe sentinels in the pool are returned to the continue clause mode. However, if the word after the comma can be accepted by infinity, then the depth of nesting cannot be determined until after the infinite construction such as a prepositional phrase has been completely analyzed.

To switch from the continue clause mode to the end clause mode and to provide for the analysis of an infinite construction following the comma, the comma predicts another sentinel, the comma end-wipe activator, which is placed at the top of the new prediction pool. Thus, when the alternative arguments of the word following the comma are tested against the predictions, this sentinel is the first one encountered. The comma end-wipe activator subroutine temporarily suspends the testing cycle and scans the pool for

comma end-wipe sentinels. Every one found is switched from the continue clause mode to the end clause mode. The comma end-wipe activator subroutine then tests whether or not an alternative argument of the word under test can be fulfilled by an infinite prediction. The subroutine checks for intersections and if there are none, the comma end-wipe activator is wiped from the pool. Control is then returned to the normal operations of the testing cycle. The change back to the continue clause mode is carried out within the executive routine of the predictive analysis program when the pool is updated.

If the word following the comma can be fulfilled by infinity, the comma end-wipe activator is not wiped. Instead, it is tested during the analysis of every following word until a word is found that has not fulfilled any prediction when the comma end-wipe activator is tested. Only then is the comma end-wipe activator wiped from the pool and the comma end-wipe sentinels finally returned to the continue clause mode. While a comma end wipe is in the continue clause mode, a word is labeled an arbitrary choice if it cannot fulfill any prediction located above the comma end wipe. If such an event takes place, all the predictions above the comma end wipe are wiped from the pool. However, all predictions below the comma end wipe remain unaffected. Thus, the analysis of a nested subordinate clause might be in error even though the analysis of the main clause can be carried out correctly.

C. The Subordinate Clause

Subordinate clauses fall into two categories. those headed by relative pronouns and those headed by conjunctions, called relative conjunctions

to emphasize the parallel with relative pronouns. If a subordinate clause were introduced only by a relative conjunction and the conjunction were the first word of the clause, the mechanism necessary to predict subordinate clauses would be quite simple. The comma would make three predictions:

(1) comma end-wipe activator;
(2) relative conjunction;
(3) comma end wipe.

If the relative conjunction prediction were fulfilled, the syntactic role would make the necessary subject, predicate head, and object predictions for the identification of the elements within the clause.

This simple scheme is inadequate for the analysis of a subordinate clause with a relative pronoun or a conjunction such as ли, as in the sentence он не помнит, видел ли он его, where the conjunction is not the initial word of the subordinate clause. In the clause которая принимается... (Figure 69) the relative pronoun которая both introduces the clause and acts as the subject of the clause. If only the first function of которая is identified when the relative pronoun is analyzed, then the subject of the clause cannot be found during the pass through the sentence.

The following technique was adopted for the predictive analysis program to circumvent this difficulty. Both a relative conjunction and a relative pronoun prediction are placed in the pool. Two predictions are not necessary. The relative conjunction and the relative pronoun can be combined into one prediction. Что is the only word in the dictionary at this time that is listed both as a relative conjunction and a relative pronoun. Что, although usually used as a relative conjunction as in the sentence он сказал,

что она делала свою работу (he said that she had been doing her work) can also be used as a relative pronoun as in the sentence он сказал, что она делала (he said what she had been doing).

The subject - predicate head - object predictions are placed in the pool at the same time. To forestall testing these predictions before the existence of a new clause has been established, the PSI of all these predictions are made inactive. After the analysis of the comma, the predictions to analyze subordinate clauses are ordered as follows:

(1) comma end-wipe activator;
(2) relative conjunction;
(3) relative pronoun;
(4)-(7) subject, predicate, and objects (inactive);
(8) comma end wipe;
(9•••) (miscellaneous old predictions).

Now, if either the relative pronoun or relative conjunction prediction is fulfilled, the testing of the pool is suspended and the inactive predictions located below the relative pronoun are activated. If которая of the previous example которая принимается... is analyzed, it is first identified as the relative pronoun and a "K" is entered in word 9 as an indication. A success is not recorded by this intersection, so that которая can also be selected as the subject of the clause.

If the clause is introduced by a relative conjunction such as если in если дополнительное знание... (Figure 70), the relative conjunction prediction is fulfilled. A success is registered in the normal manner, and, of course, the activated predictions for the new clause remain in the pool to be analyzed during the testing of the words following the relative conjunction.

The intersection of the relative pronoun prediction with an alternative argument can follow the identification of the syntactic role. In the analysis of the clause в основе которой лежит теория (Figure 71), the comma end-wipe activator sentinel is not wiped from the pool when the preposition в is accepted by infinity. After основе is analyzed, the prediction pool would have the following predictions of consequence at the top:

(1) noun complement;
(2) comma end-wipe activator;
(3) relative conjunction;
(4) relative pronoun.

Которой fulfills the noun complement prediction and its syntactic role is determined. The relative pronoun prediction also intersects with которой. The inactive predictions are activated after which the testing cycle proceeds. No further intersections are recorded. Although the new clause has been positively identified, the comma end-wipe activator is still in the pool and is wiped only upon the analysis of the subsequent word, the verb лежит.

One last example, свойства которых определяются... (Figure 72), illustrates a difficulty that cannot be resolved on a single left-to-right pass. In this clause the subject свойства precedes the relative pronoun которых that acts as the noun complement of свойства. When свойства is being analyzed, there is no indication that a new clause is forthcoming and no intersections in the pool can be found. The necessary clue exists only in the following word.

Although this difficulty can be handled by use of an error-detecting and error-correcting mechanism, it must be pointed out that the error will

not be corrected if the forward analysis stops after the arbitrary choice has been labeled. The analysis must be allowed to proceed by some means to identify the existence of the relative pronoun. Only then can the error-correcting mechanism be put into effect. Otherwise, the analysis will try a host of alternative analyses, none of which will be correct.

A possible solution to this problem and the problem of analyzing a sentence consisting of several independent clauses separated by commas has been suggested. If the analysis of a comma, making the usual set of predictions, fails to help resolve the rest of the sentence, a second analysis of the comma can be tried. Thus the comma must fulfill another prediction by infinity which is normally entered in hindsight. Such a prediction, the clauser, has been created, although no tests have been made of its effectiveness. A comma accepted as a clauser predicts the necessary subject, predicate head, and object predictions with active PSI. Also, if desired, a relative pronoun prediction which can be fulfilled after the subject or object predictions might also be predicted if a comma is accepted as a clauser.

D. The Gerund Phrase

The gerund phrase, like the subordinate clause, is usually isolated from the rest of a sentence by commas. The initial word of this phrase is always a gerund and can be analyzed by predicting a gerund at the same time as the relative conjunction and relative pronoun. A typical example of a gerund phrase is превращаясь в атомы другого элемента (Figure 73). The ordinary predictions made by verbs are sufficient to analyze the rest of the phrase.

The gerund phrase and the subordinate clauses are the only structures predicted, surrounded by commas, with no syntactic links to the rest of the sentence in the present version of the program. These are therefore the only structures to be predicted by the comma. The first few predictions made by the comma in the present program are:

(1) comma end-wipe activator;
(2) gerund;
(3) end wipe;
(4) relative conjunction;
(5) end wipe;
(6) relative pronoun.

Several end-wipe sentinels have been inserted between the predictions. Thus the gerund prediction is wiped if a new clause is identified and both the gerund and relative conjunction are wiped if the new clause contains a relative pronoun.

E. Initial Predictions

The combination of predictions for a clause with the predictions made by the comma provide the set of initial predictions that are inserted into the prediction pool before the analysis of the sentence is begun. A main clause must exist in every sentence. It is possible, however, that a sentence will start with a subordinate clause or a phrase structure. A prepositional phrase can be accepted by infinity but a gerund phrase must be predicted. The predictions made by a comma, when placed before the predictions for the main clause, allow this type of sentence to be analyzed. The initial prediction pool consists of eighteen predictions:

(1) comma end-wipe activator;
(2) gerund;
(3) end wipe;
(4) relative conjunction;
(5) end wipe;
(6) relative pronoun;
(7) subject (inactive);
(8) left object (instrumental)(inactive);
(9) left object (accusative)(inactive);
(10) predicate head (inactive);
(11) indirect object (inactive);
(12) comma end wipe;
(13) subject;
(14) left object (instrumental);
(15) left object (accusative);
(16) predicate head;
(17) indirect object;
(18) end of sentence.

(The number of predictions would be reduced by four if the left object predictions were combined as well as the relative conjunction and relative pronoun predictions.)

If a sentence starts with the main clause, none of the first eleven predictions is fulfilled. They are all subsequently wiped by the comma end-wipe sentinel which has been put into the end clause mode by the comma end-wipe activator. But if some structure other than the main clause starts the sentence, the last six predictions are held in abeyance until the initial structure has been fully analyzed.

F. The Participial Phrase and the Modifier

The participial phrase and the gerund phrase differ in the predictive syntactic analysis technique because the participial phrase is predicted by a preceding noun. Subordinate clauses and other types of phrases which are not now syntactically linked to the rest of the sentence will eventually be handled by a more sophisticated version of the program. The distinction, at the present time, is only temporary.

Every noun predicts a modifier that agrees with the noun in case and number. Due to the nature of the prediction pool, the later a noun occurs in the sentence, the closer to the top of the pool is the modifier prediction made by the noun. The modifier prediction is usually fulfilled by a participle following a comma. Thus the modifier prediction is initially given a 50 PSI which mades it inactive. The prediction is activated by the comma end-wipe activator at the same time that the mode of the comma end wipe is altered. In this manner the modifier has a 00 PSI when the word after the comma is tested.

Two participles, помещенные в... and возникающих в... (Figure 74), illustrate the modifier prediction. Помещенные fulfills the modifier prediction made by the noun статьи and activated by the comma between the two words. Similarly, возникающих fulfills the prediction made by the noun проблемах and activated by the comma following the noun. Multiple modifier intersections are common since every noun makes a modifier prediction. In the phrase возникающих при... (Figure 75), the participle intersects with the modifier predictions of the nouns задач and схем. The former intersection is preferred because задач follows схем in the sentence. A syntactic analysis cannot distinguish the relative validity of "problem arising..." or "circuit arising..." although the choice is obvious to the reader.

The present test for modifiers includes tests for case and number but not for gender. This is an oversight since a true modifier must agree with its antecedent in gender. This oversight resulted in three intersections between the alternative argument of называемой in называемой кодом числа (Figure 76) and the modifier predictions in the pool. Modifier predictions

with the preceding nouns напряжения, последовательности, and виде were noted. Of these, only the intersection with последовательности also agreed in gender.

The modifier prediction has accounted for the analysis of other nonparticipial modifiers as well. Simple adjectival appositives can also fulfill the modifier prediction if they occur after a comma. The phrase ненужных для регистрации сигнала (Figure 77) is analyzed as an appositive to the noun частот.

The modifier prediction is troublesome when a series is being analyzed. If this series consists of three or more items, so that commas are used to separate all but the last two items, these items are selected as modifiers. Sometimes the items in the series agree only in case and not in number, in which case this problem does not arise. Thus, the series фольги, ножниц и клея (Figure 78) cannot be analyzed as modifiers while the series фильтры, направленные ответьители, гибридные схемы и т.п. (Figure 79) can be so analyzed.

An idea for analyzing a series has been suggested but only partially tested. A comma can be accepted as an infinite conjunction (always listed in hindsight). In this way a set of items separated by commas and agreeing in case can be linked together, using the compound predictions (see Part 7). Until error-correcting routines are utilized, this approach cannot be checked.

The modifier prediction is particularly affected by words intervening between itself and the preceding comma because of its 00 PSI. The modification of the prediction pool by these intervening words results in the modifier prediction being wiped from the pool. The most common instance is when the participle is negated by the adverb не as in не встречающаяся в

случае ... (Figure 80). Встречающаяся is a participle that should fulfill the modifier prediction of its antecedent трудность. A solution to this problem would be to change the PSI to 03 and follow the modifier prediction with an end-wipe sentinel.

Adjectives and participles that fulfill modifier predictions make the usual set of predictions even though a participle that fulfills a modifier prediction cannot have a master. A distinct example of an erroneously fulfilled master prediction occurs in the clause соответствующих десяти различным дальностям (Figure 81). Десяти is actually the initial adjectival numeral in a numeral basic phrase and should fulfill the dative object prediction generated by соответствующих. In the present analysis, десяти is selected as the master of the participle and the dative object prediction is wiped from the pool in the process. The following word различным is then accepted as an arbitrary choice, indicating the error. For the analysis to proceed with no error indication, it would be necessary for the adjectival homograph of десяти to fulfill the object prediction.

7. Compound Structures

Any structure from individual words to entire clauses can be compounded, and every such possibility must be provided for in the prediction pool. Four coordinating conjunctions, и, или, а, and но, are presently recognized by the predictive analysis program. A compound structure might follow any of the four conjunctions. Such a conjunction can occur at any point in the analysis of a sentence and must be predicted by infinity. The name infinite conjunction has been assigned for this purpose.

Since a compound structure can occur only following an infinite conjunction, a mechanism whereby a compound prediction cannot be fulfilled at any other time is essential. The basic tool for the identification of such a structure is the inactive prediction (with a PSI greater than 49). Every compound prediction is marked 99 PSI, which is reserved for this purpose only. This prediction cannot be tested until the PSI has been changed and the prediction activated. When an infinite conjunction is analyzed, a new sentinel, the 99-activator is placed at the top of the pool. When the 99-activator is tested, it activates all the compound predictions by changing the PSI from 99 to 49. The 99-activator is then wiped from the pool subject to the same restraints as the comma end-wipe activator (see Part 6). The compound predictions remaining in the pool after the testing cycle has been completed are restored to their original 99 PSI until another infinite conjunction is analyzed.

In predictive syntactic analysis the compound structures are those segments following an infinite conjunction, and not the entire string including the conjunction and the segments on either side.

Virtually every analyzed word makes some type of compound prediction. (Mention of the compound predictions was omitted previously in this section as it was felt that consideration of them would have complicated the description of the analyses of other structures.) Compound predictions that can no longer be fulfilled are wiped from the pool in the normal manner. Thus the number of compound predictions in the pool at any time is usually significantly less than the number of analyzed words in a sentence.

A. Predicting with Compounding Conjunctions

A simple example of the compound analysis process is illustrated by the phrase на наблюдениях и свидетельствах (Figure 82). The noun наблюдениях is analyzed as the preposition complement. As a noun, наблюдениях predicts (1) a noun complement, (2) an inactive modifier, and (3) an agent as directed by the "R4" in word 8. Because the syntactic role of the noun is preposition complement, two additional predictions are made: (4) a compound preposition complement in the locative case with 99 PSI and (5) an end-wipe sentinel. The sentinel will wipe all these predictions that are not subsequently fulfilled.

The following word, the conjunction и, does not fulfill any of the first four predictions. However, и is accepted by infinity and the end-wipe sentinel does not wipe the predictions. When the prediction pool is updated, the noun complement is wiped and a 99-activator is placed at the top of the pool which now is ordered as follows:

(1) 99-activator;
(2) modifier (50 PSI);
(3) agent;
(4) compound preposition complement (locative)(99 PSI);
(5) end wipe;
(6···) (miscellaneous old predictions).

The alternative argument of the next word, the noun свидетельствах, cannot be accepted by infinity, so that the 99-activator changes all 99 PSI to 49 PSI. The 99-activator is then wiped from the pool. The testing process continues and the alternative argument intersects with the now active compound preposition complement prediction.

Compound predictions of government structures are simpler than those of agreement structures. As was shown in the last example, the compound preposition complement prediction is merely another prediction of a basic phrase in the same case as the preferred argument of the word making the prediction. The compound singular and plural nouns in уменьшить размеры и вес (Figure 83) are typical. The problem of predictions which must agree in number arises since two compounded singular words are equivalent to a single plural word.

A solution to this problem has been created for the case of compound subjects as in the clause отсутствие...и постоянство...обеспечиваются... (Figure 84). The analysis of отсутствие as the subject causes the predicate head prediction to be modified so that only a singular neuter predicate can fulfill the prediction. A compound subject prediction is also entered in the pool. After being activated by и, the compound subject prediction is fulfilled by постоянство. It is now necessary to modify the predicate head prediction a second time so that a plural rather than a singular predicate fulfills it. Обеспечиваются then fulfills the remodified predicate head prediction.

Although only compound subjects have been handled in this manner up to now, the change in number has to be considered in all agreement predictions. The agreement between an adjective and its master is another example. Two singular adjectives can have one plural noun master. Conversely, a plural adjective can be followed by two singular compounded noun masters. Although such cases are rare, several examples have been noted. The first instance is illustrated by the phrase симметричного и несимметричного типов (Figure 85) and the second by свои скорость и положение (Figure 86).

A sentence with several interesting compounding examples is illustrated in Figure 87. The word и appears four times in the sentence. The compound preposition complement and compound verb complement are representative of ordinary government compounding. A third compound structure is the pair of compound prepositions для. (The fourth use of и is considered in Part 7B.) When the prepositions are compounded, the two prepositional phrases offset each other. A compound preposition is presently limited to a second occurrence of the identical preposition after an infinite conjunction. The limitation does not, however, take into account the essential equivalence of the prepositions в and во and of о, об, and обо. Other prepositions may be compounded also. Prepositions should be divided into groups by meanings, e.g., prepositions of location such as на, под, за, etc. A preposition belonging to one such group could compound with any other preposition of the same group.

Other uninflected forms can also be compounded in the language. Compound adverbs do not exist in the program. A rarer compound structure that was discovered among the analyzed sentences was the compound relative conjunction что in the sentence испытания показали, что..., и что... (Figure 88).

B. Infinite Conjunction Homography

Several functional difficulties arise because the infinite conjunction и is homographic with the adverb и and also the relative conjunction и.

When и is used adverbially as it is in the fourth instance сборник и в настоящем... (Figure 87), the word following и should not intersect with

a compound prediction. As an adverb, и serves as a stress on the following word or phrase. Particularly, since the English translation of и used as an infinite conjunction is usually "and," and as an adverb it is usually "also" or "even," the analysis program must distinguish between the two homographs.

It would be interesting to test whether or not an infinite conjunction can be identified by the intersection with a compound prediction by the word following the infinite conjunction. The test would require that all other predictions be deactivated when the 99 PSI predictions are activated. If there are no intersections, the analysis of the infinite conjunction is in error and must be corrected.

Such an approach would also help solve a presently ambiguous situation. That is, when two nouns are compounded by an infinite conjunction they are always analyzed correctly; but when two adjectives are compounded in the same way they are analyzed in a different manner. The second adjective is analyzed as the master of the first. Узлов и элементов (Figure 89) and то или иное расстояние (Figure 90) represent the two possibilities. The different analyses result from the different predictions generated by nouns and adjectives. By the time that элементов is analyzed, the noun complement prediction made by узлов is no longer in the pool and the compound noun complement prediction is the first prediction fulfilled. In contrast, the master prediction generated by то is above the compound preposition complement prediction when иное is analyzed. The compound preposition complement prediction intersection is thus listed in hindsight. Although the ambiguity might be considered genuine in the latter case, the

compound syntactic role should be preferred since it provides more information about the syntax of the structure.

Such an approach to the problem would help to solve some of the residual object predictions. Predictions of objects of adjectives and nouns occur randomly in texts. These predictions are not of high priority but they often interfere in the analysis because of their relatively high position in the pool. A test whereby the word after an infinite conjunction could be fulfilled only by a compound prediction would counteract the effect of the order of the predictions in the pool. As an example in the phrase с лучшей добротностью и лучшей экранировкой (Figure 91), добротностью predicts a dative object. The и that follows sets up the mechanism for activating the compound predictions. The mechanism should be stronger; only a compound prediction is really being looked for since и was selected as an infinite conjunction. As it is now, the object prediction is above the compound preposition complement prediction and an error in analysis is subsequently indicated by the arbitrary choice designation of экранировкой.

A second prediction pool only for compound predictions has been considered recently in informal discussions. With two pools it would be necessary to update the second pool every time the first pool was updated. Also, compound predictions which could no longer occur would have to be eliminated promptly. Thus both pools would have to be treated in parallel, and their distinction would become completely obscured.

If an analysis technique whereby an infinite conjunction must be followed by a compound construction is adopted, it is necessary to remember that the first adjective of a compounded pair of adjectives will not have

a master. This desired result is obtained now when adjectival numerals are compounded since an adjectival numeral (see Part 3E) is not recognized as a potential numeral master. Thus, in the phrase от одного или нескольких... (Figure 92), нескольких is recognized as only the compound preposition complement and not the master of одного. In the process the master prediction generated by одного is wiped from the pool and recorded as an error in hindsight.

The third homograph of the infinite conjunction - adverb - relative conjunction set necessitates still another form of analysis. If a coordinating conjunction is used to compound two entire clauses, the coordinating conjunction acts as a relative conjunction. According to the hypothesis that commas separate individual clauses, such a situation can arise only if the infinite conjunction immediately follows a comma. A test is made to check whether or not the initial clause has been completely fulfilled. Since clauses connected by infinite conjunctions are independent, the initial clause cannot be continued after the second clause is completed. The test of a completely analyzed clause is that the subject and predicate of the clause have been identified and those predictions are no longer in the pool. If those predictions cannot be found, a relative conjunction intersection is possible. Such a situation exists in the sentence она хотела идти, а другие продолжали говорить (Figure 93).

Such an approach is not without inherent dangers. A counterexample of the last example was not difficult to find: the sentence в сборнике помещена также статья...и статья... (Figure 94). The и immediately follows a comma and the subject and predicate head predictions of the clause have

been fulfilled. И is taken to be the relative conjunction and the second clause is never successfully analyzed. Since no predicate head can be found, the analysis should be able to select и as the infinite conjunction and treat the second статья as the compound subject of the initial clause.

8. Miscellaneous Constructions Analyzed by the Predictive Analysis Program

Previously in this paper, various grammatical rules have been grouped into classes. Several of the rules in the program do not fit into these classes and will therefore be discussed separately here.

A. The Comparative Adverb and Чем

A comparative adverb, like a negative adverb (Part 5), can make predictions, since it is followed by a noun phrase or a clause. To analyze the construction that follows the comparative adverb, a comparative complement is predicted. This prediction can be fulfilled by a genitive basic phrase, the conjunction чем, or a comma.

The use of the genitive basic phrase as a comparative complement is illustrated in the sentence вы на три года старше моего друга (Figure 95). The comparative adverb is used as the predicate in this sentence, a construction that the predictive analysis program does not yet recognize (Part 6). The same type of sentence with a verbal predicate would be он был старше моега друга.

Whenever the comparative complement prediction is fulfilled by чем, the analysis of the comparative complement structure can be continued further. A distinction has been made when a comma does or does not intervene

between чем and the comparative adverb. If there is no comma, it is assumed that the phrase following чем is parallel to some phrase that preceded чем. Thus ее подруга is nominative and singular, parallel to она in the sentence она красивее чем ее подруга (Figure 96).* Here too, the comparative adverb is used as the predicate. The compound predictions are utilized to predict the parallel construction since the grammatical information contained in the compound predictions is exactly what is desired. No attempt has been made to change the name of the syntactic role in word 9 and so ее подруга appears as a compound subject. The operation to identify the parallel construction is carried out by placing a 99-activator (see Part 7) at the top of the pool after чем has been analyzed. This is done only if чем fulfills a comparative complement prediction.

The intersection of a comma with a comparative complement prediction is meaningless and is a residue of an earlier attempt to account for the comma that can intervene between the comparative adverb and чем such as слабее, чем... (Figure 97). A чем following a comma is presently not analyzed correctly. This could be overcome by allowing the comma to fulfill some other prediction that would then allow the comma to carry forward the comparative complement prediction to the word after the comma. The чем would then make the suitable predictions for either a parallel basic phrase or for an entire new clause.

The genitive basic phrase and the чем can both follow the comparative adverb in the same sentence as in the clause ...более трудностей, чем...

---

* The "INCOMPAT EE" in the 10-word item of красивее means that the stem красив-, stored in the dictionary, is listed as an adjective but that the affix -ее is an adverbial and not an adjectival ending.

(Figure 98). The present analysis program can identify only one comparative complement. By having two separate predictions made which could be fulfilled independently, a structure as illustrated in Figure 98 could be correctly analyzed.

B. Parenthetic Comments

A set of sentinels has been developed to separate predictions in the pool which refer to different phrase and clause structures. The most obvious use of such sentinels is to isolate predictions of structures that are explicitly isolated in the sentence itself. A pair of parentheses and a pair of quote signs are the most common symbols used to isolate structures. A pair of dashes is also commonly used in Russian.

Since a parenthetic comment can occur anywhere in a sentence, a left parenthesis can be predicted only by infinity. The analysis of a left parenthesis precludes the continuation of the analysis of the rest of a sentence until a right parenthesis has been identified. This is achieved by predicting a right paren end wipe. This, like the end-of-sentence prediction, is a combination prediction and sentinel. Only a right parenthesis can fulfill the right paren end wipe, and the testing of the prediction pool cannot go beyond the right paren end wipe. Thus the right paren end wipe deters the testing of the older predictions until after the analysis of the right parenthesis which causes the prediction sentinel to be wiped from the pool. In the clause расчет электрических параметров...в них (Figure 99), the parenthetic series (характеристического сопротивления, затухания, и т.п.) does not interfere with the analysis. After the comma outside the parentheses,

the predictive analysis program tests the old predictions and identifies "параметровнеоднородностей" as the compound noun complement of параметров or полосковых линий, a choice that can be resolved on semantic grounds only. The compound noun complement is not a real word, but is the result of a typographical mistake where two words параметров and неоднородностей have been run together. This example is still the best one in the analyzed texts. It indicates the effect of the right paren end-wipe sentinel since the compound predictions from the words within the parentheses are no longer in the pool to intersect with the alternative arguments of the pseudoword.

By the present program, the analysis of the structure within the parentheses is incomplete. The structure can exist as one of three types: (1) it is syntactically unrelated to the sentence (as in the example); (2) it can be predicted in the normal manner since it is a part of the sentence (as the parenthetic comments in this sentence); or (3) it is a complete sentence in itself. Under the present scheme if a word cannot be analyzed by the predictions located above the right paren end wipe, it is categorized as an arbitrary choice. This crude approach is adequate only for parenthetic structures of the first type. More commonly, the parenthetic structure is a participial or prepositional phrase and the parentheses are equivalent to a set of commas. The equivalence holds also if the parenthetic structure is an entire clause, either dependent or independent. This equivalence can be utilized to further the analysis of parenthetic constructions.

The identification of parenthetic structures has been experimentally limited to actual parentheses. Other symbols that serve identical purposes

can be recognized with the same predictions. The quote signs which are spelled out "$QUOTE" and "$UNQUOTE" in texts analyzed by the predictive analysis program (Figure 100) are one such set of symbols and the two dashes "--" (Figure 101) are another. The quotes are ignored in the analysis since they are dollar-sign items. This is a class of items which consists of remarks by the typists who prepare texts. A "QUOTE" and an "UNQUOTE" are dollar-sign items because the typist must write out the words instead of using the quotation-marks symbol ("). The dashes appear as missing words since they are considered an unknown type of punctuation mark. The dash is not as accurate an indicator of parenthetic remarks as the parentheses or quotes since it can be used for other purposes, quite often singly and not necessarily in pairs.

9. The Analysis of Complete Sentences

In the preceding discussions, the predictive syntactic analysis program has been dissected into minute segments which have been treated individually. With such an approach the analysis of entire sentences has been largely neglected. A number of complete sentences have been illustrated among the examples. Sentences with errors in their analyses appear in Figures 5, 7, 21, 42, 46, 49, 61, 62, 67, 87, 88, 94, 96, and 97. The types of error are discussed in the text. Other sentences analyzed correctly appear in Figures 13, 19, 38, 43, 44, 45, and 90. Both successfully and unsuccessfully analyzed sentences have been included to give some feeling of the present power and potential value of the predictive analysis program. The reader should be able to reproduce tha analysis of complete sentences,

as well as the analysis of any sentence segments from other figures, with the complete set of rules given in Appendix A.

Another set of complete sentences analyzed by the program have been included (Figures 102-112). These sentences, taken from texts OOH and OOK, are interesting examples analyzed by the existing program. Of the eleven sentences, only the three in Figures 102, 104, and 108 have been analyzed correctly. Various errors, both automatically detected and undetected, exist in the analyses of the eight other sentences.

Several of the detected errors can be corrected easily. The wiped numeral master prediction originating from the subject одним in the sentence beginning with одним из средств... (Figure 103) indicates that одним should have been chosen as a nominal and not as an adjectival. Поэтому in the sentence поэтому освоение полосковых линий будет означать... (Figure 109) should have been selected as an adverb instead of as a relative conjunction. The wiped initial subject and predicate head predictions serve to indicate this error. The error in the verb phrase нанесен проводящей краской... (Figure 112) has been made quite clear by the wiped object master prediction originating from the adjective проводящей. The adjective should have been selected as the instrumental agent of нанесен instead of the genitive object of the same verb complement.

Although two subject predictions are wiped during the analysis of the sentence очевидно, что подобная же задача возникает... (Figure 106), there is no error in the analysis. The predicate head of the main clause, the short-form adjective очевидно, need not have an explicit subject; and the second subordinate clause когда изучают процесс химической реакции also

has no subject. To detect that the latter clause is correct presents a problem.

The sentence containing the noun phrase вопросам точного и приближенного определения... (Figure 105) contains a "borderline" error. This sentence raises a question as to whether и should be translated by "and," since no compound prediction was fulfilled.

The sentence in Figure 110 contains several errors of the type already described here. Многие is analyzed in the same manner as приближенного in Figure 105; and которой is selected as an adjectival rather than as a nominal, as was одним in Figure 103. A third error in this sentence is the result of selecting или as a relative conjunction instead of as an infinite conjunction. Теория (word 280) is then incorrectly selected as the subject of the new clause instead of the compound subject of the first subordinate clause. However, no predicate is ever found and this should be sufficient information to reject the analysis.

The last two examples in Figures 107 and 111 contain errors which cannot be syntactically detected. In the clause какие богатые возможности могут представить колосковые линии... (Figure 107), the subject has been selected as the object and the left object has been selected as the subject. In the verb phrase позволяет во многих случаях значительно уменьшить размеры... (Figure 111), уменьшить is selected as the verb master of случаях instead of the verb master of позволяет. Some form of semantic analysis is required to resolve both these problems.

A reader who wishes to study the analyzed texts abstracted in this section may obtain upon request prints of the entire texts OOH and OOK as well as the four others mentioned.

REFERENCES*

1. Oettinger, A. G., Automatic Language Translation: Lexical and Technical Problems, Harvard University Press, Cambridge, Mass. (1960).

2. Sherry, M. E., "Syntactic Analysis in Automatic Translation," Doctoral Thesis, Harvard University (1960).

3. Sherry, M. E., "Predictive Syntactic Analysis," Proceedings of the National Symposium on Machine Translation, Prentice-Hall, Inc., New York (1961).

4. Bossert, W. H., "The Implementation of Predictive Analysis," NSF-4, Sec. VIII (1960).

5. Bossert, W. H., Giuliano, V. E., and Grant, S. B., "Automatic Syntactic Analysis of English," NSF-4, Sec. VII (1960).

6. Grant, S. B., "A Modified System of English Predictive Analysis," NSF-6, Sec. VIII (1961).

7. Isenberg, D., "The Program for Predictive Syntactic Analysis of Russian," NSF-7, Sec. III (1961).

8. Rhodes, I., "A New Approach to the Mechanical Syntactic Analysis of Russian," unpublished report, National Bureau of Standards (1959).

9. Burks, A. W., Warren, D. W., and Wright J. B., "An Analysis of a Logical Machine Using Parenthesis-free Notation," Mathematical Tables and Other Aids to Computation, Vol. 8 (1954), pp. 53-7.

10. Chomsky, N., Syntactic Structures, Mouton and Co., The Hague (1957).

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* Throughout these references the following abbreviations are used:

NSF-3, 4, etc. - Mathematical Linguistics and Automatic Translation, Reports to the National Science Foundation by the Computation Laboratory of Harvard University, Cambridge, Mass.

REFERENCES (continued)

11. Oettinger, A. G., "Automatic Syntactic Analysis and the Pushdown Store," Structure of Language and its Mathematical Aspects, Proceedings of Symposia in Applied Mathematics, American Mathematical Society, Providence, R. I., Vol. XII (1961), pp. 104-29.

12. Sherry, M. E. and Oettinger, A. G., "A New Model of Natural Language for Predictive Syntactic Analysis," 4th London Symposium on Information Theory, London (August 1960) (to appear in forthcoming Proceedings volume).

13. Alt, F. L., "Recognition of Clauses and Phrases in Machine Translation of Languages," Report No. 6895, National Bureau of Standards (1960).

14. Yngve, V. H., "A Model and an Hypothesis for Language Structure," Proceedings of the American Philosophical Society, Vol. 104, No. 5 (1960), pp. 444-66.

15. Sager, N., "Procedure for Left-to-right Recognition of Sentence Structure," Transformations and Discourse Analysis Projects, Report No. 27, University of Pennsylvania (1960).

16. Plath, W., "Automatic Sentence Diagramming," NSF-6, Sec. I (1961).

17. Foust, W., "Grammatical Coding in the Harvard Automatic Dictionary," NSF-7, Sec. II (1961).

18. Magass, K., "Russian Numerals in the Harvard Dictionary File," NSF-4, Sec. IV (1960).

19. Baum, E. and Schenk, W., Die Russischen Verben, Leipzig: VEB Bibliographisches Institut (1954).

20. Plath, W., "Proposals for Additional Grammatical Coding in the Harvard Automatic Dictionary File," NSF-3, Sec. XV (1959).

21. Jones, P. L., Jr., "Modifications to the Continuous Dictionary Run (III)," NSF-6, Sec. VII (1961).

APPENDIX A

RULES FOR PREDICTIVE SYNTACTIC ANALYSIS

The set of grammatical rules which are represented by the subroutines in the experimental predictive syntactic analysis program are presented in this appendix. For the reader to simulate the actions of the analysis program, he needs only these rules, the coding manual,[17] and a sample of text material that has been looked up in the Harvard Automatic Dictionary with the continuous dictionary run program.[21]

The rules (and subroutines) have been divided into three categories: predictors, testers, and sentinels. A different format is used to describe each of the three categories.

An illustration of the use of this appendix will help familiarize the reader with the technique. Consider the process when a subject prediction is being tested against the alternative argument /noun, nominative, singular, masculine/ of a noun such as студент, the first word in a hypothetical sentence.

The reference information for the subject tester (prediction) indicates that the subject prediction can be made by one of three predictor subroutines: initial, comma, or clauser. The initial predictor makes two subject predictions, one active and one inactive, the comma predictor makes an inactive subject prediction, and the clauser predictor makes an active subject prediction. The subject prediction can be modified either by the verb predicate head predictor or by the adjective predicate head predictor.

The testing criteria indicates that the subject prediction can be fulfilled either by a noun, adjective, participle, numeral, pronoun, or by

a verb infinitive. The formal definitions of these six classes can be found under the appropriate predictor headings (i.e., noun predictor, adjective predictor, etc.). If the subject prediction has been modified by either of the predicate head predictors there are further limitations. Then the subject prediction can be fulfilled by a verb only if the subject tester is modified to be third person, singular, and neuter; it can be fulfilled by a pronoun only if it is modified to be in the same person as the pronoun; and it can be fulfilled by any of the other four types of words only if it is modified to be in the third person.

There are additional tests that must be made before the prediction can be fulfilled. The number must be tested where applicable, and, of course, the case must be nominative. Wherever appropriate the gender is also compared. If the predicate head has already been fulfilled (and the subject prediction modified) character position 3 of the second grammar word has been modified; likewise, if the subject must be a verb (this can only occur with a compound subject) character position 2 has been modified.

No particular action outside of the normal testing cycle is required with this prediction. The mark to be placed in word 9 of the analyzed 10-word item is listed as the "syntactic role mark."

With the suggested example, the subject prediction is fulfilled. Студент has a nominative alternative argument. Since студент is the first word of the hypothetical sentence the subject prediction is unmodified and the test for case is the only significant test.

The testing cycle now proceeds to test the alternative arguments of студент against the other predictions in the pool. The syntactic role of

subject is given to студент in this example since the intersection just described is the first one.

After the testing cycle has been completed, new predictions are put into the pool. The correct predictor, with which to start making new predictions, is indicated by the class that "fulfilled" the syntactic role, i.e., the noun студент.

The reference information for the noun predictor indicates that every word with an "N" in character position 1 or a "PN" in character positions 1 and 2 of word 5 of the 10-word item makes the listed predictions. Among the tester subroutines that can be fulfilled by nouns listed next, the subject tester can be found. The noun predictor subroutine may also be called in by a previous predictor subroutine, either a pronoun or a numeral predictor.

The predictions made by the noun predictor are listed under "action taken." The dictionary entry of студент does not have any object, agent, or verb master government marks, so that only two new predictions are made, a noun complement and a modifier. Any grammatical information needed to be stored with the noun complement and modifier testers is listed under the headings of the two testers, respectively.

Since студент was chosen as the subject, after the two new predictions are made, a second predictor subroutine, the adjective-noun subject predictor must be called in.

This second predictor subroutine makes two more new predictions, a compound subject prediction and an end-wipe sentinel, and the new pool is headed by these new predictions in the order predicted: noun complement, modifier, compound subject, and end wipe.

The adjective-noun subroutine also modifies the predicate head, and in this particular instance marks the predicate head so that only a third person, singular, and masculine predicate can fulfill the prediction. Since студент was not selected as the compound subject, no other action is taken.

There are no other predictor subroutines to be called in so that the old prediction pool can be modified and re-inserted below the four new predictions. The subject prediction, having been fulfilled, is wiped and all the remaining old predictions are appended to the four new ones.

With the creation of a new prediction pool, the predicting cycle is complete and the alternative arguments of the next word in the sentence can be tested against the new set of predictions.

The analysis of the noun студент is typical of the predictive syntactic analysis program. Exceptions to the procedure just outlined are always explicitly marked at the appropriate places. After these special actions are performed control returns to the ordinary testing or predicting cycle, again unless specifically indicated to the contrary.

LIST OF SUBROUTINES

Predictors	page
Initial	I-103
Clauser	I-104
Comma	I-105
Noun	I-106
Pronoun	I-107
Adjective	I-108
Participle	I-109
Verb	I-110
Adverb	I-111
Negative	I-112
Negative adverb	I-112
Numeral	I-113
Numeral master	I-114
Preposition	I-114
Gerund	I-115
Infinite conjunction	I-115
Relative conjunction	I-116
CHEM (чем)	I-117
Modifier	I-117
Object	I-118
Left object	I-119
Indirect object	I-120
Agent	I-120

LIST OF SUBROUTINES (continued)

page

Noun complement I-121

Preposition complement. I-121

Adjective-noun subject. I-122

Pronoun subject I-123

Verb subject I-124

Verb predicate head. I-124

Adjective predicate head I-125

BYT' (быть) I-126

Infinitive predicate head. I-127

Verb complement I-127

Verb master I-128

Preposition object I-128

$---$ I-129

Left paren. I-129

End of sentence I-130

Testers

Subject. I-131

Predicate head I-132

Infinitive predicate head. I-133

Master I-134

Numeral master I-135

Verb master I-136

Verb complement I-137

Modifier I-138

Object I-139

LIST OF SUBROUTINES (continued)

page

Left object I-140

Indirect object I-141

Agent I-142

Noun complement I-143

Preposition complement. I-144

Chain numeral. I-145

Negative I-146

Comparative complement. I-147

Preposition object I-148

Compound preposition I-149

Gerund I-150

Relative conjunction I-151

Relative pronoun. I-152

Infinity I-153

Arbitrary choice. I-154

End of sentence I-155

Sentinels

End wipe I-156

Comma end wipe I-157

End-of-sentence end wipe I-158

(Right paren tester subroutine). I-159

Right paren end wipe I-160

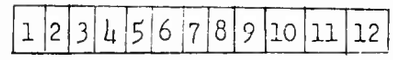
Comma end-wipe activator I-160

99-activator I-161

Summary of Prediction Span Indicators (PSI) used in Experimental Predictive Syntactic Analysis Program

00	The prediction must be fulfilled by the next word or not at all.
01	The prediction must be fulfilled during the analysis of the sentence.
02	The prediction can be fulfilled more than once and is not to be wiped when fulfilled.
03	The prediction may be fulfilled at any time but need not necessarily be fulfilled.
20-23	Mutually exclusive predictions (otherwise identical to 00-03 PSI).
49	Active compound prediction.
50-53, 70-73, 99	Inactive predictions (activated by activator sentinels).

Summary of Abbreviations

PSI	Prediction Span Indicator.
Cpd	compound.
M.F.	mutually exclusive.
CPx	Character position ($1 \leq x \leq 12$)
	
FWx	Machine word of analyzed 10-word item ($0 \leq x \leq 9$).
TWx	Machine word of unanalyzed 10-word item ($0 \leq x \leq 9$).
GWx	Grammar word (as kept in experimental program) ($1 \leq x \leq 3$).

INITIAL PREDICTOR SUBROUTINE

Assembly Address: INITLΔ

Reference Information

Called in by the following predictor subroutines:

1. Program initializer.
2. End of sentence.

Action Taken

Predicts:

1. Comma end-wipe activator.
2. Gerund.
3. End wipe.
4. Relative conjunction.
5. End wipe.
6. Relative pronoun.
7. Subject (inactive).
8. M.E. Left object (instrumental) (inactive).
9. M.E. Left object (accusative) (inactive).
10. Predicate head (inactive).
11. Indirect object (inactive).
12. Comma end wipe (end clause mode).
13. Subject.
14. M.E. Left object (instrumental).
15. M.E. Left object (accusative).
16. Predicate head.
17. Indirect object.
18. End of sentence.

Other Action:

1. Store "IIC" in comma serial number.

Notes

Predictions 1-12 are made with serial number "IIC", others with "III".

CLAUSER PREDICTOR SUBROUTINE

Assembly Address: CLASER

Reference Information

Characterized by (syntactic role mark):

1. "," in CP1 of FW5 and "INF CLAUSER" in FW9.

Accepted by the following tester subroutines:

1. Infinity.

Action Taken

Predicts:
1. Subject.
2. M.E. Left object (instrumental).
3. M.E. Left object (accusative).
4. Predicate head.
5. Indirect object.
6. Comma end wipe (continue clause mode).

Other Action:

1. Before making predictions, wipe all predictions in pool with serial same as comma serial number.
2. Store serial number of preferred argument in comma serial number.

COMMA PREDICTOR SUBROUTINE

Assembly Address: COMMAΔ

Reference Information

Characterized by (syntactic role mark):

1. "," in CP1 of FW5 and "INF COMMA" in FW9.

Accepted by the following tester subroutines:

1. Comparative Complement.
2. Infinity.

Action Taken

Predicts:

1. Comma end-wipe activator.
2. Gerund.
3. End wipe.
4. Relative conjunction.
5. End wipe.
6. Relative pronoun.
7. Subject (inactive).
8. M.E. Left object (instrumental) (inactive).
9. M.E. Left object (accusative) (inactive).
10. Predicate head (inactive).
11. Indirect object (inactive).
12. Comma end wipe (end clause mode).

Other Action:

1. Before making predictions, wipe all predictions in pool with serial same as Comma Serial Number.
2. Store serial number of preferred argument in Comma Serial Number.

NOUN PREDICTOR SUBROUTINE

Assembly Address: NOUNΔΔ

Reference Information

Characterized by (syntactic role mark):

1. "N" in CP1 of FW5.
2. "PN" in CP1-2 of FW5.

Accepted by the following tester subroutines:

(Cpd)	1. Subject.	(Cpd)	7. Indirect object.
	2. Master.	(Cpd)	8. Agent.
	3. Numeral master.	(Cpd)	9. Noun complement.
(Cpd)	4. Modifier.	(Cpd)	10. Preposition complement.
(Cpd)	5. Object.		11. Comparative complement.
(Cpd)	6. Left object.		12. Arbitrary choice.

Called in by the following predictor subroutines:

1. Pronoun (nominal).
2. Numeral (nominal).

Action Taken

Predicts:
1. Noun complement.
2. Modifier (inactive).
3. Objects, agent, and verb master with 03 PSI as directed by FW8.

Call to (if not master):

1. Adjective-noun subject (identical with pronoun subject).
2. Modifier.
3. Object.
4. Left object.
5. Indirect object.
6. Agent.
7. Noun complement.
8. Preposition complement.

PRONOUN PREDICTOR SUBROUTINE

Assembly Address: PPRONΔ

Reference Information

Characterized by (syntactic role mark):

1. "P" in CP1 of FW5.

Accepted by the following tester subroutines:

(Cpd)	1.	Subject.	(Cpd)	7.	Indirect object.
	2.	Master.	(Cpd)	8.	Agent.
	3.	Numeral master.	(Cpd)	9.	Noun complement.
(Cpd)	4.	Modifier.	(Cpd)	10.	Preposition complement.
(Cpd)	5.	Object.		11.	Comparative complement.
(Cpd)	6.	Left object.		12.	Arbitrary choice.

Action Taken

Call to:

1. Noun if "N" in CP2 of FW5.
2. Adjective if "A" in CP2 of FW5.

ADJECTIVE PREDICTOR SUBROUTINE

Assembly Address: ADJΔΔΔ

Reference Information

Characterized by (syntactic role mark):

1. "A" in CP1 of FW5, also CP8, CP9, and CP10 of FW5 < 1.
2. "PA" in CP1-2 of FW5.

Accepted by the following tester subroutines:

(Cpd)	1.	Subject.	(Cpd)	7.	Agent.
	2.	Master.	(Cpd)	8.	Noun complement.
(Cpd)	3.	Modifier.	(Cpd)	9.	Preposition complement.
(Cpd)	4.	Object.		10.	Comparative complement.
(Cpd)	5.	Left object.		11.	Arbitrary choice.
(Cpd)	6.	Indirect object.			

Called in by the following predictor subroutines:

1. Pronoun (adjectival).

Action Taken

Predicts:
1. Objects, agent and verb master with 03 PSI as directed by FW8.
2. End wipe.
3. Master.
4. End wipe.

Call to (if not master):

1. Adjective-noun subject (identical with pronoun subject).
2. Modifier.
3. Object.
4. Left object.
5. Indirect object.
6. Agent.
7. Noun complement.
8. Preposition complement.

PARTICIPLE PREDICTOR SUBROUTINE

Assembly Address: PART$\Delta\Delta$

Reference Information

Characterized by (syntactic role mark):

1. "A" in CP1 of FW5 and > 0 in CP10, but not > 0 in CP8 and CP9 of FW5.

Accepted by the following tester subroutines:

(Cpd)	1.	Subject.	(Cpd)	7.	Agent.
	2.	Master.	(Cpd)	8.	Noun complement.
(Cpd)	3.	Modifier.	(Cpd)	9.	Preposition complement.
(Cpd)	4.	Object.		10.	Negative.
(Cpd)	5.	Left object.		11.	Arbitrary choice.
(Cpd)	6.	Indirect object.			

Action Taken

Predicts:

1. Objects (unless instrumental) as directed by FW8. If "N" in CP10 of FW8 and accusative object predicted, predict instead combined genitive-accusative object.
2. End wipe.
3. Verb master. If "N" in CP10 of FW8, put "N" in CP1 of GW1.
4. Object (instrumental) and agent as directed by FW8.
5. End wipe.
6. Master (PSI = 03) unless fulfilled verb complement.
7. End wipe.

Call to:

1. Adjective-noun subject (identical with Pronoun subject).
2. Modifier.
3. Object.
4. Left object.
5. Indirect object.
6. Agent.
7. Noun complement.
8. Preposition complement.
9. Verb complement.

Notes

Participle not accepted by verb complement (Cpd) at this time although it can "call to" verb complement.

Should be accepted by comparative complement.

VERB PREDICTOR SUBROUTINE

Assembly Address: VERBΔΔ

Reference Information

Characterized by (syntactic role mark):

1. "V" in CP1 of FW5.

Accepted by the following tester subroutines:

(Cpd) 1. Subject.
(Cpd) 2. Predicate head.
(Cpd) 3. Infinitive predicate head.
(Cpd) 4. Verb master.
5. Negative.
6. Gerund.
7. Arbitrary choice.

Action Taken

Predicts:

1. Preposition object (with government coding).
2. Object as directed by CP5-8 of FW5 (unless instrumental). If preferred argument is predicate head and left object has been found, do not predict object of case of left object. If "N" in CP10 of FW8 and accusative object predicted, predict instead combined genitive-accusative object.
3. End wipe.
4. Verb master (if "N" in CP10 of FW8, put "N" in CP1 of GW1).
5. Object (instrumental) and agent as directed by CP5-8 of FW5, unless preferred argument is predicate head and instrumental left object has been found.

Other Action:

1. If "3" in CP12 of FW5, go to BYT' (быть) without making any predictions.

Call to:

1. Verb subject.
2. Verb predicate head.
3. Infinitive predicate head.
4. Verb master.
5. Gerund.

ADVERB PREDICTOR SUBROUTINE

Assembly Address: ADV△△△

Reference Information

Characterized by (syntactic role mark):

1. "H" in CP1 of FW5 and not NE (HE).
2. "A" in CP1 of FW5 and 2 or 3 in CP9 of FW5 and not > 0 in CP10 of FW5.
3. "A" in CP1 of FW5 and 1 in CP8 of FW5.

Accepted by the following tester subroutines:

1. Infinity.

Action Taken

Predicts:
1. Comparative complement, if CP8 of FW5 > 0.
2. Objects, agent and verb master as directed by FW8.
3. End wipe.

Other Action:

1. If neither predictions are made under 1 and 2, go to <u>continue</u> to avoid wiping the prediction pool.

NEGATIVE PREDICTOR SUBROUTINE

Assembly Address: NEG△△△

Reference Information

Characterized by (syntactic role mark):

1. NE (не) as text word.

Accepted by the following tester subroutines:

1. Infinity.

Action Taken

Predicts: 1. Negative.

NEGATED ADVERB PREDICTOR SUBROUTINE

Assembly Address: NEGADV

Reference Information

Characterized by (syntactic role mark):

1. "H" in CP1 of FW5.
2. "A" in CP1 of FW5 and 2 or 3 in CP9 of FW5 and not > 0 in CP10 of FW5.
3. "A" in CP1 of FW5 and 1 in CP8 of FW5.

Accepted by the following tester subroutines:

1. Negative.

Action Taken

Predicts: 1. Comparative complement if CP8 of FW5 > 0.

NUMERAL PREDICTOR SUBROUTINE

Assembly Address: NUM△△△

Reference Information

Characterized by (syntactic role mark):

1. "D" in CP1 of FW5.

Accepted by the following tester subroutines:

(Cpd)	1.	Subject.	(Cpd)	8.	Noun complement.
	2.	Master.	(Cpd)	9.	Preposition complement.
(Cpd)	3.	Modifier.		10.	Chain numeral.
(Cpd)	4.	Object.		11.	Comparative complement.
(Cpd)	5.	Left object.		12.	Infinity (if nominative).
(Cpd)	6.	Indirect object.		13.	Arbitrary choice.
(Cpd)	7.	Agent.			

Action Taken

Predicts:

1. M.E. Chain numeral.
2. M.E. Numeral master according to following conditions (if "A" in CP2 of FW5):
   (a) if "RZV"or if no intersection between FW6 and FW8, put FW8 in GW1.
   (b) if intersection, put intersection in GW1; if genitive, predict both singular and plural.
3. End wipe.

Call to:

1. If "A" in CP2 of FW5 and not numeral master.
   (a) Adjective-noun subject (identical to pronoun subject).
   (b) Modifier.
   (c) Object.
   (d) Left object.
   (e) Indirect object.
   (f) Agent.
   (g) Noun complement.
   (h) Preposition complement.
2. If "N" in CP2 of FW5, go to noun.

NUMERAL MASTER PREDICTOR SUBROUTINE

Assembly Address: NUMAST

Reference Information

Characterized by (syntactic role mark):

1. "A" in CP1 of FW5 and CP9 of FW5 < 1.
2. "PA" in CP1-2 of FW5.

Accepted by the following tester subroutines:

1. Numeral master.

Action Taken

Predicts: 1. Numeral master.
(a) If "R" in CP2 of GW1, predict "R" in CP2 of GW1 and "Z" in positions corresponding to intersections.
(b) If not "R" in CP2 of GW1, predict normal intersections.

PREPOSITION PREDICTOR SUBROUTINE

Assembly Address: PREP$\Delta\Delta$

Reference Information

Characterized by (syntactic role mark):

1. "R" in CP1 of FW5.

Accepted by the following tester subroutines:

1. Compound preposition.
2. Infinity.

Called in by the following predictor subroutines:

1. Preposition object.

Action Taken

Predicts: 1. Preposition complement.
2. Compound preposition.
3. End wipe.

GERUND PREDICTOR SUBROUTINE

Assembly Address: GERNΔΔ

Reference Information

Characterized by (syntactic role mark):

1. "V" in CP1 of FW5 and "G" in CP9 of FW6.

Called in by the following predictor subroutines:

1. Verb.
2. BYT' (быть)

Action Taken

Predicts: 1. Compound gerund.
2. End wipe.

INFINITE CONJUNCTION PREDICTOR SUBROUTINE

Assembly Address: CONJXΔ

Reference Information

Characterized by (syntactic role mark):

1. I (и), ILI (или), A (а), or NO (но).
2. "," in CP1 of FW5 and "INF CONJ" in FW9.

Accepted by the following tester subroutines:

1. Infinity.

Called in by the following predictor subroutines:

1. CHEM (чем).

Action Taken

Predicts: 1. 99-Activator.

Notes

Comma should not fulfill INF CONJ.
Put mark in FW5 for all INF CONJ.

RELATIVE CONJUNCTION PREDICTOR SUBROUTINE

Assembly Address: RCNJTΔ

Reference Information

Characterized by (syntactic role mark):

1. "C" in CP1 of FW5.

   If I (и), ILI (или), A (а), or NO (но), check prediction pool for unfulfilled subject, left object, and predicate head predictions. Accept only if none found.

Accepted by the following tester subroutines:

1. Relative conjunction.

Action Taken

Predicts: 1. If ESLI (если) or CHTOBY (чтобы) as text word, infinitive predicate head.

Other Action:

1. Activate all inactive predictions ($50 \leq PSI \leq 98$). Update serial number upon activating. Also update serial number of top comma end wipe in pool.

Notes

Should also check for objects of predicate head that must be fulfilled. Cannot do this now.

CHEM (чем) PREDICTOR SUBROUTINE

Assembly Address: CHEM△△

Reference Information

Characterized by (syntactic role mark):

1. CHEM (чем) as text word and "C" in CP1 of FW5

Accepted by the following tester subroutines:

1. Comparative complement.

Action Taken

Predicts: 1. Object, if comparative complement predicted by adjective predicate head.

Call to:

1. Infinite conjunction, if comparative complement predicted by adverb.

MODIFIER PREDICTOR SUBROUTINE

Assembly Address: MOD△△△

Reference Information

Characterized by (syntactic role mark):

1. iiiiMODIFERi in FW9.

Called in by the following predictor subroutines:

1. Noun.
2. Adjective.
3. Participle.
4. Numeral.

Action Taken

Predicts:
1. Compound modifier (in same case and number).
2. End wipe.
3. Comma end wipe in continue clause mode.

OBJECT PREDICTOR SUBROUTINE

Assembly Address: OBJΔΔΔ

Reference Information

Characterized by (syntactic role mark):

1. iiiiiOBJECTi in FW9.

Called in by the following predictor subroutines:

1. Noun.
2. Adjective.
3. Participle.
4. Numeral.

Action Taken

Predicts:
1. Compound object with same case(s) as object.
2. End wipe.

Notes

This predictor routine also takes care of the following other predictor routines:

(a) Left object.
(b) Indirect object.
(c) Agent.
(d) Noun complement.
(e) Preposition complement.

LEFT OBJECT PREDICTOR SUBROUTINE

Assembly Address: LOBJTΔ

Reference Information

Characterized by (syntactic role mark):

1. iiiiiLΔOBJΔi in FW9.

Called in by the following predictor subroutines:

1. Noun.
2. Adjective.
3. Participle.
4. Numeral.

Action Taken

Predicts:
1. Compound left object with same case(s) as left object.
2. End wipe.

Other Action:

1. Put case in CP2 of GW2 of predicate head prediction.

Notes

Same as object predictor.

INDIRECT OBJECT PREDICTOR SUBROUTINE

Assembly Address: INDOBJ

Reference Information

Characterized by (syntactic role mark):

1. iiiiiIND△OBJi in FW9.

Called in by the following predictor subroutines:

1. Noun.
2. Adjective.
3. Participle.
4. Numeral.

Action Taken

Predicts: 1. Compound indirect object. 2. End wipe.

Notes

Same as object predictor.

AGENT PREDICTOR SUBROUTINE

Assembly Address: AGT△△△

Reference Information

Characterized by (syntactic role mark):

1. iiiiiAGENT△i in FW9.

Called in by the following predictor subroutines:

1. Noun.
2. Adjective.
3. Participle.
4. Numeral.

Action Taken

Predicts: 1. Compound agent. 2. End wipe.

Notes

Same as object predictor.

NOUN COMPLEMENT PREDICTOR SUBROUTINE

Assembly Address: NCOMPT

Reference Information

Characterized by (syntactic role mark):

1. iiiiiN△COMPi in FW9.

Called in by the following predictor subroutines:

1. Noun.
2. Adjective.
3. Participle.
4. Numeral.

Action Taken

Predicts: 1. Compound noun complement.
2. End wipe.

Notes

Same as object predictor.

PREPOSITION COMPLEMENT PREDICTOR SUBROUTINE

Assembly Address: RCOMPT

Reference Information

Characterized by (syntactic role mark):

1. iiiiiR△COMPi in FW9.

Called in by the following predictor subroutines:

1. Noun.
2. Adjective.
3. Participle.
4. Numeral.

Action Taken

Predicts: 1. Compound preposition complement in same case as preposition complement.
2. End wipe.

Notes

Same as object predictor.

ADJECTIVE-NOUN SUBJECT PREDICTOR SUBROUTINE

Assembly Address: ANSUBΔ

Reference Information

Characterized by (syntactic role mark):

1. iiiiiSUBJCTi in FW9 and neither "V" in CP1 of FW5 nor "PN" in CP1-2 of FW5.

Called in by the following predictor subroutines:

1. Noun.
2. Adjective.
3. Numeral.
4. Participle.

Action Taken

Predicts:

1. Compound subject with any person, number and gender.
2. End wipe.

Other Action:

1. Modify predicate head prediction (if it has not been fulfilled) to 3rd person, and to number and gender of preferred argument. Put > 0 in CP3 of GW2.
2. If compound subject, modify predicate head prediction to 3rd person plural any gender.

PRONOUN SUBJECT PREDICTOR SUBROUTINE

Assembly Address: PSUBΔΔ

Reference Information

Characterized by (syntactic role mark):

1. iiiiiSUBJCTi in FW9 and "PN" in CP1-2 of FW5.

Called in by the following predictor subroutines:

1. Noun.

Action Taken

Predicts:
1. Compound subject with any person, number and gender.
2. End wipe.

Other Action:

1. Modify predicate head (if it has not been fulfilled) as to person, number and gender of pronoun and put > 0 in CP3 of GW2.
2. If compound subject, modify to 3rd person plural, any gender.

Notes

This has been merged with adjective-noun subject.

VERB SUBJECT PREDICTOR SUBROUTINE

Assembly Address: VSUBΔΔ

Reference Information

Characterized by (syntactic role mark):

1. iiiiiSUBJCTi in FW9 and "V" in CP1 of FW5.

Called in by the following predictor subroutines:

1. Verb
2. BYT' (буть)

Action Taken

Predicts: 1. Compound subject (verb infinitive only: CP2 of GW2 = 1).
2. End wipe.

Other Action:

1. Modifies predicate head (if it has not been fulfilled) to 3rd person, neuter, singular, and puts > 0 in CP3 of GW2.

VERB PREDICATE HEAD PREDICTOR SUBROUTINE

Assembly Address: VPREDH

Reference Information

Characterized by (syntactic role mark):

1. iiiiiVΔPREDΔ in FW9.

Called in by the following predictor subroutines:

1. Verb
2. BYT' (буть)

Action Taken

Predicts: 1. Compound predicate head with same person, number and gender.

Other Action:

1. If predicate head is 1st person, modify PSI of subject to 03.
2. Modifies subject (if it has not been fulfilled) as to person, number and gender, and puts > 0 into CP3 of GW2.
3. Erases left object predictions if they have not been fulfilled.

ADJECTIVE PREDICATE HEAD PREDICTOR SUBROUTINE

Assembly Address: APREDH

Reference Information

Characterized by (syntactic role mark):

1. "A" in CP1 of FW5 and 1 or 2 in CP9 of FW5.
2. "X" in CP1 of FW5.

Accepted by the following tester subroutines:

1. Predicate head.
(Cpd) 2. Verb complement.

Action Taken

Predicts:
1. Comparative complement, if CP8 of FW5 > 0.
2. Objects, agent and verb master with 03 PSI as directed by FW8, if CP8 of FW5 $\leq$ 0 and left object not fulfilled.
3. Verb master.*
4. Compound predicate head with same person, number, and gender.

Other Action:

1. Wipe left object predictions if not yet fulfilled.
2. If CP1 of FW5 is "X", wipe subject prediction with same serial number as in CP1-3 of FW9.
3. If CP1 of FW5 is "A", modify subject prediction to any person and to number and gender of preferred argument and put > 0 into CP3 of GW2.

Notes

*If predict verb master due to "P9" code in number 2 above, must inhibit prediction of 3 above.

BYT' (буть) PREDICTOR SUBROUTINE

Assembly Address: BYTΔΔΔ

Reference Information

Characterized by (syntactic role mark):

1. "V" in CP1 of FW5 and "3" in CP12 of FW5.

Called in by the following predictor subroutines:

1. Verb

Action Taken

Predicts:
1. M.E. Verb master (if "N" in CP10 of FW8, put "N" in CP1 of GW1).
2. M.E. Object (nominative-instrumental combined) (if left object found, don't predict object).
3. M.E. Verb complement (predict any number and gender if have gerund or infinitive).

Call to:

1. Verb subject.
2. Verb predicate head.
3. Infinitive predicate head.
4. Verb master.
5. Gerund.

INFINITIVE PREDICATE HEAD PREDICTOR SUBROUTINE

Assembly Address: IPREDT

Reference Information

Characterized by (syntactic role mark):

1. iiiiL△PRED△△ in FW9.

Called in by the following predictor subroutines:

1. Verb
2. BYT' (быть)

Action Taken

Predicts: 1. Compound infinitive predicate head.
2. End wipe.

VERB COMPLEMENT PREDICTOR SUBROUTINE

Assembly Address: VCOMPT

Reference Information

Characterized by (syntactic role mark):

1. iiiiiV△COMP△ in FW9.

Called in by the following predictor subroutines:

1. Participle

Action Taken

Predicts: 1. Compound verb complement (with same number and gender).
2. End wipe.

VERB MASTER PREDICTOR SUBROUTINE

Assembly Address: VMASTT

Reference Information

Characterized by (syntactic role mark):

1. iiiiiV△MAST△ in FW9.

Called in by the following predictor subroutines:

1. Verb
2. BYT' (бутъ)

Action Taken

Predicts: 1. Compound verb master.

PREPOSITION OBJECT PREDICTOR SUBROUTINE

Assembly Address: ROBJT△

Reference Information

Characterized by (syntactic role mark):

1. "R" in CP1 of FW5, the identical preposition, and agreement with government code.

Accepted by the following tester subroutines:

1. Preposition object.

Action Taken

Call to:

1. Preposition.

Notes

Same as preposition routine.

$---$ PREDICTOR SUBROUTINE

Assembly Address: DOLLAR

Reference Information

Characterized by (syntactic role mark):

1. "$" in CP1 of FW2.

Accepted by the following tester subroutines:

1. Infinity.

Action Taken

Other Action:

1. Go to continue to avoid wiping the prediction pool.

LEFT PAREN PREDICTOR SUBROUTINE

Assembly Address: LPAREN

Reference Information

Characterized by (syntactic role mark):

1. "*(" as input text word.

Accepted by the following tester subroutines:

1. Infinity.

Action Taken

Predicts: 1. Right paren end wipe.

END-OF-SENTENCE PREDICTOR SUBROUTINE

Assembly Address: EOSTΔΔ

Reference Information

Characterized by (syntactic role mark):

1. "." in CP1 of FW5.
2. ";" in CP1 of FW5.
3. ":" in CP1 of FW5.

Accepted by the following tester subroutines:

1. End of sentence.

Action Taken

Other Action:

1. Wipe prediction pool completely.
2. Set chain number to 00.
3. Put 3 space blockettes in hindsight and final choice tapes.

Call to:

1. Initial.

SUBJECT TESTER SUBROUTINE

PSI = 01

ABS, 000012, 00, SUBJΔΔ

Compound PSI = 99

ABS, 000992, 00, CSUBJΔ

Reference Information

Predicted by:

1. Initial (active and inactive).
2. Comma (inactive).
3. Clauser.

Modified by:

1. Verb predicate head.
2. Adjective predicate head.

Reference Information

Predicted by:

1. Adjective-noun subject.
2. Pronoun subject.
3. Verb subject.

Testing Criteria

Fulfilled by:

1. Noun.
2. Adjective.
3. Participle.
4. Numeral.

} if prediction is in 3rd person.

5. Pronoun, if prediction matches in person.
6. Verb (infinitive), if prediction is 3rd person, singular, neuter.

Grammatical Information required:

1. GW1: Nominative and number.
2. GW2: CP1: Gender. CP2: Subject must be verb if > 0.
   CP3: Predicate head fulfilled if > 0. CP4: Person.

Syntactic Role Mark

ΔΔSUBJCTΔ

Syntactic Role Mark

ΔCSUBJCTΔ

PREDICATE HEAD TESTER SUBROUTINE

PSI = 01

ABS, 000012, 00, PREDΔΔ

Compound PSI = 99

ABS, 000992, 00, CPREDΔ

Reference Information

Predicted by:

1. Initial (both active and inactive).
2. Comma (inactive).
3. Clauser.

Modified by:

1. Adjective-noun subject.
2. Pronoun subject.
3. Verb subject.
4. Left object.

Reference Information

Predicted by:

1. Verb predicate head.
2. Adjective predicate head.

Testing Criteria

Fulfilled by:

1. Verb (indicative).
2. Adjective predicate head (if CP2 of GW2 < 1).

Grammatical information required:

1. GW1: Nominative and number.
2. GW2: CP1: Gender. CP2: Left object found if > 0 and case given by CP2. CP3: Subject fulfilled if > 0. CP4: Person.

Syntactic Role Mark

ΔΔVΔPREDΔ

ΔΔAΔPREDΔ

Syntactic Role Mark

ΔCVΔPREDΔ

ΔCAΔPREDΔ

INFINITIVE PREDICATE HEAD TESTER SUBROUTINE

PSI = 00

ABS, 000000, 00, IPRED△

Reference Information

Predicted by:

1. Relative conjunction. (ESLI (если) and CHTOBY (чтобы) only).

Compound PSI = 99

ABS, 000990, 00, CIPRED

Reference Information

Predicted by:

1. Infinitive predicate head.

Testing Criteria

Fulfilled by:

1. Verb (infinitive).

Immediate Action

Wipe all predictions down to, but not including, top comma end wipe.

Syntactic Role Mark

△I△PRED△△

Syntactic Role Mark

CI△PRED△△

MASTER TESTER SUBROUTINE

PSI = 01

ABS, 000012, 00, MAST△△

Reference Information

Predicted by:

1. Adjective.
2. Participle.

Testing Criteria

Fulfilled by:

1. Adjective.
2. Noun.
3. Pronoun.
4. Numeral.
5. Participle.

Grammatical information required:

1. GW1: Case and number.
2. GW2: Gender.
3. GW3: Mark of word making prediction.

Syntactic Role Mark

xxxxxxxxM

(x-x = mark of word predicting master)

Notes

Master preferred argument should override object or agent preferred argument from word with same text serial number. (This test made in override.)

NUMERAL MASTER TESTER SUBROUTINE

PSI = 01

ABS, 000012, 00, NMASTΔ

Reference Information

Predicted by:

1. Numeral.
2. Numeral master.

Testing Criteria

Fulfilled by:

1. Noun.
2. Pronoun (nominal).
3. Numeral master.

Grammatical information required:

1. GW1: "RZV" or case and number.
2. GW2: Mark of word making prediction.

Syntactic Role Mark

xxxxxxxxN

(x-x = mark of word predicting numeral master)

Notes

If "R" in CP2 of GW1, both 1 and 2 must be genitive singular and 3 fulfills non-R case and number. Otherwise, look for normal intersection.

VERB MASTER TESTER SUBROUTINE

PSI = 03

ABS, 000031, 00, VMASTΔ

Reference Information

Predicted by:

1. Noun.
2. Adjective.
3. Participle.
4. Verb
5. Adverb
6. Adjective predicate head.
7. BYT' (быть).

Testing Criteria

Fulfilled by:

1. Verb (infinitive).

Grammatical information required:

1. GW1: CP1: "N" if negated.

Immediate Action

If "N" in CP1 of GW1, put "N" in CP10 of FW8.

Syntactic Role Mark

ΔΔVΔMASTΔ

Compound PSI = 99

ABS, 000991, 00, CVMAST

Reference Information

Predicted by:

1. Verb master.

Syntactic Role Mark

ΔCVΔMASTΔ

VERB COMPLEMENT TESTER SUBROUTINE

PSI = 03

ABS, 000031, 00, VCOMPΔ

Compound PSI = 99

ABS, 000991, 00, CVCOMP

Reference Information

Predicted by:

1. BYT' (быть).

Reference Information

Predicted by:

1. Verb complement.

Testing Criteria

Fulfilled by:

1. Adjective with 1 or 2 in CP9 of FW5.

Grammatical information required:

1. GW1: CP1: Gender, CP2: Number.

Syntactic Role Mark

ΔΔVΔCOMPΔ

Syntactic Role Mark

ΔCVΔCOMPΔ

Notes

Presently go to participle predictor. Should go directly to verb complement predictor.

MODIFIER TESTER SUBROUTINE

PSI = 50

ABS, 000501, 00, MODIFΔ

Reference Information

Predicted by:

1. Noun.

Modified by:

1. Activated by comma end-wipe activator.

Testing Criteria

Fulfilled by:

1. Noun.
2. Pronoun.
3. Adjective.
4. Participle.
5. Numeral.

Grammatical information required:

1. GW1: Case and number.

Syntactic Role Mark

ΔMODIFERΔ

Compound PSI = 99

ABS, 000992, 00, CMODIF

Reference Information

Predicted by:

1. Modifier.

Syntactic Role Mark

CMODIFERΔ

OBJECT TESTER SUBROUTINE

PSI = 01

ABS, 000012, 00, OBJECT

Compound PSI = 99

ABS, 000992, 00, COBJCT

Reference Information

Predicted by:

1. Noun.
2. Adjective.
3. Participle.
4. Verb.
5. Adverb.
6. CHEM (чем).
7. Adjective predicate head.
8. BYT' (быть).

Reference Information

Predicted by:

1. Object.

Testing Criteria

Fulfilled by:

1. Noun.
2. Pronoun.
3. Adjective.
4. Participle.
5. Numeral.

Grammatical information required:

1. GW1: Case and Number.
2. GW2: "ΔΔΔΔOBJECTΔ"

Syntactic Role Mark

ΔΔOBJECTΔ

Syntactic Role Mark

ΔCOBJECTΔ

Notes

This tester routine also takes care of the following testers:

(a) Left object.
(b) Indirect object.
(c) Agent.
(d) Noun complement.
(e) Preposition complement.

LEFT OBJECT TESTER SUBROUTINE

PSI = 03

ABS, 000032, 00, LOBJE△

Compound PSI = 99

ABS, 000992, 00, CLOBJE

Reference Information

Predicted by:

1. Initial (active and inactive).
2. Comma (inactive).
3. Clauser

Modified by:

1. Wiped by verb predicate head.
2. Wiped by adjective predicate head.

Reference Information

Predicted by:

1. Left object.

Testing Criteria

Fulfilled by:

1. Noun.
2. Pronoun.
3. Adjective.
4. Participle.
5. Numeral.

Grammatical Information required:

1. GW1: "00A000 00A000" or "0000I0 0000I0"
2. GW2: "△△△△△L △OBJ△△"

Syntactic Role Mark

△△L△OBJ△

Syntactic Role Mark

△CL△OBJ△

Notes

Same as object tester.

INDIRECT OBJECT TESTER SUBROUTINE

PSI = 03

ABS, 000032, 00, INDOBΔ

Compound PSI = 99

ABS, 000992, 00, CINDOB

Reference Information

Predicted by:

1. Initial (active and inactive).
2. Comma (inactive).
3. Clauser.

Reference Information

Predicted by:

1. Indirect object.

Testing Criteria

Fulfilled by:

1. Noun.
2. Pronoun.
3. Adjective.
4. Participle.
5. Numeral.

Grammatical information required:

1. GW1: "000C00 000C00"
2. GW2: "ΔΔΔΔIN DΔOBJΔ"

Syntactic Role Mark

ΔINDΔOBJΔ

Syntactic Role Mark

CINDΔOBJΔ

Notes

Same as object tester.

AGENT TESTER SUBROUTINE

PSI = 03

ABS, 000032, 00, AGENTΔ

Reference Information

Predicted by:

1. Noun.
2. Adjective.
3. Participle.
4. Verb.
5. Adverb.

Testing Criteria

Fulfilled by:

1. Noun.
2. Pronoun.
3. Adjective.
4. Participle.
5. Numeral.

Grammatical information required:

1. GW1: Case and number.
2. GW2: "ΔΔΔΔΔAGENTΔΔ"

Syntactic Role Mark

ΔΔAGENTΔΔ

Compound PSI = 99

ABS, 000992, 00, CAGENT

Reference Information

Predicted by:

1. Agent.

Syntactic Role Mark

ΔCAGENTΔΔ

Notes

Same as object tester.

NOUN COMPLEMENT TESTER SUBROUTINE

PSI = 00

ABS, 000002, 00, NCOMPΔ

Compound PSI = 99

ABS, 000992, 00, CNCOMP

Reference Information

Predicted by:

1. Noun.

Reference Information

Predicted by:

1. Noun complement.

Testing Criteria

Fulfilled by:

1. Noun.
2. Pronoun.
3. Adjective.
4. Participle.
5. Numeral.

Grammatical information required:

1. GW1: "0G0000 0G0000"
2. GW2: "ΔΔΔΔΔN ΔCOMPΔ"

Syntactic Role Mark

ΔΔNΔCOMPΔ

Syntactic Role Mark

ΔCNΔCOMPΔ

Notes

Same as object tester.

PREPOSITION COMPLEMENT TESTER SUBROUTINE

PSI = 01

ABS, 000012, 00, RCOMPΔ

Reference Information

Predicted by:

1. Preposition.

Compound PSI = 99

ABS, 000992, 00, CRCOMP

Reference Information

Predicted by:

1. Preposition complement.

Testing Criteria

Fulfilled by:

1. Noun.
2. Pronoun.
3. Adjective.
4. Participle.
5. Numeral.

Grammatical information required:

1. GW1: Case and number.
2. GW2: "ΔΔΔΔΔRΔCOMPΔ".

Syntactic Role Mark

ΔΔRΔCOMPΔ

Syntactic Role Mark

ΔCRΔCOMPΔ

Notes

Same as object tester.

CHAIN NUMERAL TESTER SUBROUTINE

PSI = 00

ABS, 000003, 00, CHNNUM

Reference Information

Predicted by:

1. Numeral.

Testing Criteria

Fulfilled by:

1. Numeral.

Grammatical information required:

1. GW1: Case and number.
2. GW2: Gender.
3. GW3: Mark of work making prediction.

Syntactic Role Mark

xxx:xxxxN

(x-x = mark of word predicting chain numeral)

NEGATIVE TESTER SUBROUTINE

PSI = 00

ABS, 000000, 00, NEGTIV

Reference Information

Predicted by:

1. Negative.

Testing Criteria

Fulfilled by:

1. Verb.
2. Participle.
3. Negated adverb.

Immediate Action

1. If fulfilled by 1 or 2:

   (a) Put "N" in CP10 of FW8.

   (b) Do not call to success.

   (c) Don't make mark.

Syntactic Role Mark

INF△ADVB△△△△

COMPARATIVE COMPLEMENT TESTER SUBROUTINE

PSI = 01

ABS, 000011, 00, CMPCMP

Reference Information

Predicted by:

1. Adverb.
2. Negated adverb.
3. Adjective predicate head.

Testing Criteria

Fulfilled by:

1. Noun.
2. Pronoun (adjectival).
3. Adjective.
4. Numeral.

} must be genitive.

5. CHEM (чем).
6. Comma.

Grammatical information required:

1. GW1: "A00000 000000" if predicted by adverb or negated adverb.

   "P00000 000000" if predicted by adjective predicate head.

Syntactic Role Mark

ΔCMPΔCMPΔ

Notes

Must eliminate comma fulfillment.

PREPOSITION OBJECT TESTER SUBROUTINE

PSI = 00

ABS, 00000I, CC, ROBJEΔ

Reference Information

Predicted by:

1. Verb.

Testing Criteria

Fulfilled by:

1. Preposition object.

Grammatical information required:

1. GW1: Preposition government code in CP1-2 (e.g., E1, H6, etc.).

Syntactic Role Mark

ΔRΔOBJΔΔΔ

Notes

1. Compounding not taken into account.
2. A table of prepositions and codes is stored in the program, one machine word per preposition and code: CCPPPPPPPPPN.
   CC-Government code. N-case of governed preposition.
   PPPPPPPPP-X-lit of preposition with delta fill.

COMPOUND PREPOSITION TESTER SUBROUTINE

Compound PSI = 99

ABS, 000991, 00, CPREP△

Reference Information

Predicted by:

1. Preposition.

Testing Criteria

Fulfilled by:

1. Preposition (that is identical).

Grammatical information required:

1. GW1: Preposition (x-lit).

Syntactic Role Mark

C△PREP^△△

GERUND TESTER SUBROUTINE

PSI = 03

ABS, 000030, 00, GERUND

Reference Information

Predicted by:

1. Initial.
2. Comma.

Testing Criteria

Fulfilled by:

1. Verb (gerund).

Syntactic Role Mark

ΔGERUNDΔΔ

Compound PSI = 99

ABS, 000990, 00, CGERNΔ

Reference Information

Predicted by:

1. Gerund.

Syntactic Role Mark

CGERUNDΔΔ

RELATIVE CONJUNCTION TESTER SUBROUTINE

PSI = 03

ABS, 000030, 00, RCONJΔ

Reference Information

Predicted by:

1. Initial.
2. Comma

Testing Criteria

Fulfilled by:

1. Relative conjunction.

Syntactic Role Mark

KΔRΔCONJΔ

RELATIVE PRONOUN TESTER SUBROUTINE

PSI = 03

ABS, 000030, 00, RPRONΔ

Reference Information

Predicted by:

1. Initial.
2. Comma.

Testing Criteria

Fulfilled by:

1. Relative pronoun.*

Immediate Action

Whether or not there has been a previous success, upon fulfillment, the routine activates all predictions in the pool with $50 \leq PSI \leq 98$, changing serial number. This tester never calls to the success control routine, and continues as if there had been no success. Change serial of top comma end wipe in pool to serial in T4. Set "K" extractor subroutine.

Notes

*A relative pronoun is characterized by:

(a) "P" in CP1 of OW and

(b) "R" in CP8 of OW.

INFINITY TESTER SUBROUTINE

Assembly Address: INFINT

Reference Information

Called in by:

1. End of sentence.
2. End wipe.
3. Comma end wipe.
4. Right paren end wipe.
5. Comma end-wipe activator.
6. 99-activator.

Testing Criteria

Fulfilled by:

1. Comma.
2. Clauser.
3. Adverb.
4. Negative.
5. Numeral (nominative with "C" in CP12 of FW5).
6. Preposition.
7. Infinite conjunction.
8. Dollar sign.
9. Left paren.

Syntactic Role Mark (respectively)

1. INF△COMMA△△△
2. INF△CLAUSER△
3. INF△ADVB△△△△
4. INF△NEGATIVE
5. INF△NUMERAL△
6. INF△PREP△△△△
7. INF△CONJNCT△
8. INF△[illegible]△△△△
9. INF△L△PAREN△

ARBITRARY CHOICE TESTER SUBROUTINE

Assembly Address: ARBTRΔ

Reference Information

Called in by:

1. End-of-sentence end wipe.

Testing Criteria

Fulfilled by:

1. Noun.
2. Pronoun.
3. Adjective.
4. Participle
5. Verb.
6. Numeral.
7. and others not accepted by infinity or other predictions.

Syntactic Role Mark

ΔΔARBTRΔΔ

Notes

1. This tester can be fulfilled only if there are no previous "success".
2. If fulfilled, increase chain number by 1.
3. Go to prediction generating control whether or not fulfilled.

END-OF-SENTENCE TESTER SUBROUTINE

PSI = 01

ABS, 000010, 00, EOSE△△

Reference Information

Predicted by:

1. Initial.

Called in by:

1. Right paren end wipe.
2. Comma end wipe (continue clause mode).

Testing Criteria

Fulfilled by:

1. End of sentence.

Immediate Action

When testing is finished, go to infinity and then transfer to end of sentence end wipe.

Syntactic Role Mark

END△OF△SENT.

END-WIPE SENTINEL SUBROUTINE

ABS, 000020 00, ENDWPE

Reference Information

Predicted by:

1. Initial (2).
2. Comma (2).
3. Adjective (2).
4. Participle (3).
5. Verb.
6. Adverb.
7. Numeral.
8. Preposition.
9. Gerund.
10. Modifier.
11. Object.
12. Left object.
13. Indirect object.
14. Agent.
15. Noun complement.
16. Preposition complement.
17. Adjective-noun subject.
18. Verb subject.
19. Infinitive predicate head.
20. Verb complement.

Called in by:

1. Comma end wipe (either if in end clause mode or if have "*)").

Immediate Action

1. Perform infinity tester.
2. If no success, wipe everything preceding in the pool including itself, and then continue with testing. Write all wiped 01 PSI predictions on hindsight tape with grammatical information.

COMMA END-WIPE SENTINEL SUBROUTINE

ABS, 000021 00, CEW△△△

Reference Information

Predicted by:

1. Initial (in end clause mode).
2. Clauser (in continue clause mode).
3. Comma (in end clause mode).
4. Modifier (in continue clause mode).

Modified by:

1. End-of-sentence end wipe.
2. Comma end-wipe activator.
3. Program executive routine.

Testing Criteria

Grammatical information required:

1. GW1: "END△CLAUSE△△" or "CONT.CLAUSE"

Immediate Action

1. Perform infinity tester.
2. If in end clause mode or this item is a "*)", transfer to end wipe.
3. If in continue clause mode, transfer to end of sentence.

END-OF-SENTENCE END-WIPE SENTINEL SUBROUTINE

ABS, 000020,00, ESEW△△

Reference Information

Called in by:

1. End of sentence (via infinity).

Immediate Action

1. Set all comma end-wipe sentinels to continue clause mode.
2. (a) If came from comma end wipe and there was no success, wipe all predictions before and including comma end wipe. Go to arbitrary choice.

   (b) If came from end of sentence, wipe entire pool except end of sentence. Go to arbitrary choice.

   (c) If came from comma end wipe and there was a success, return to executive routine control.

RIGHT PAREN TESTER SUBROUTINE

PSI = 01

ABS, 000020, 00, RPEW$\Delta\Delta$

Reference Information

Predicted by:

1. Left paren.

Testing Criteria

Fulfilled by:

1. "*)" as text word.

Immediate Action

1. If not fulfilled, go to right paren end wipe.
2. If fulfilled, wipe this and all previous predictions.

Syntactic Role Mark

ΔRΔPARENΔ

Notes

This tester together with right paren end wipe are one program routine. Present PSI of combined routine is 02.

RIGHT PAREN END-WIPE SENTINEL SUBROUTINE

ABS, 000020,00, RPEWΔΔ

Reference Information

Called in by:

1. Right paren.

Immediate Action

1. Perform infinity tester.
2. Go to end of sentence tester.

Notes

This sentinel together with right paren tester are one program routine.

COMMA END-WIPE ACTIVATOR SENTINEL SUBROUTINE

ABS, 000020,00, CEWAΔΔ

Reference Information

Predicted by:

1. Initial.
2. Comma.

Immediate Action

1. Perform infinity tester.
2. If no success, wipe this and all previous predictions in pool.
3. Modify comma end-wipe sentinels to end clause mode.
4. Activate all modifier predictions in pool.

99-ACTIVATOR SENTINEL SUBROUTINE

ABS, 000020,00, A99EWΔ

Reference Information

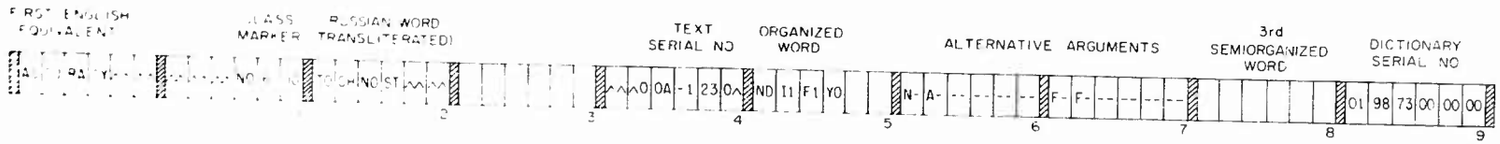
Predicted by:

1. Infinite conjunction.

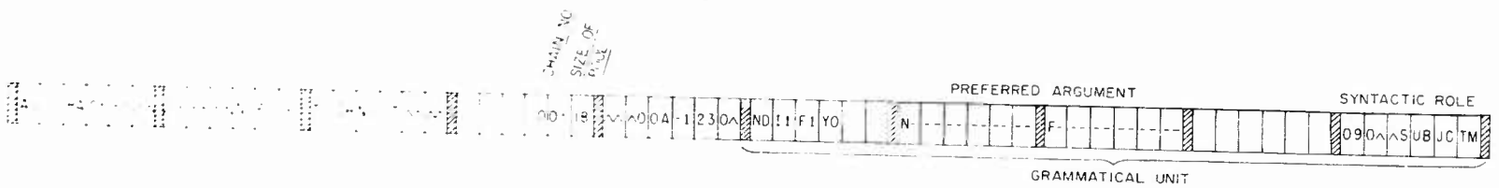
Immediate Action

1. Perform infinity tester.
2. If no success, wipe this and all previous predictions in pool.
3. Activate all 99 PSI predictions in pool.

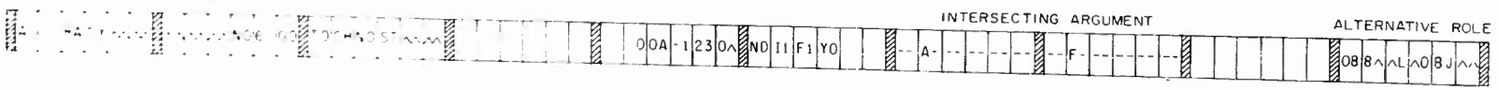
Unanalyzed Item



Analyzed Item



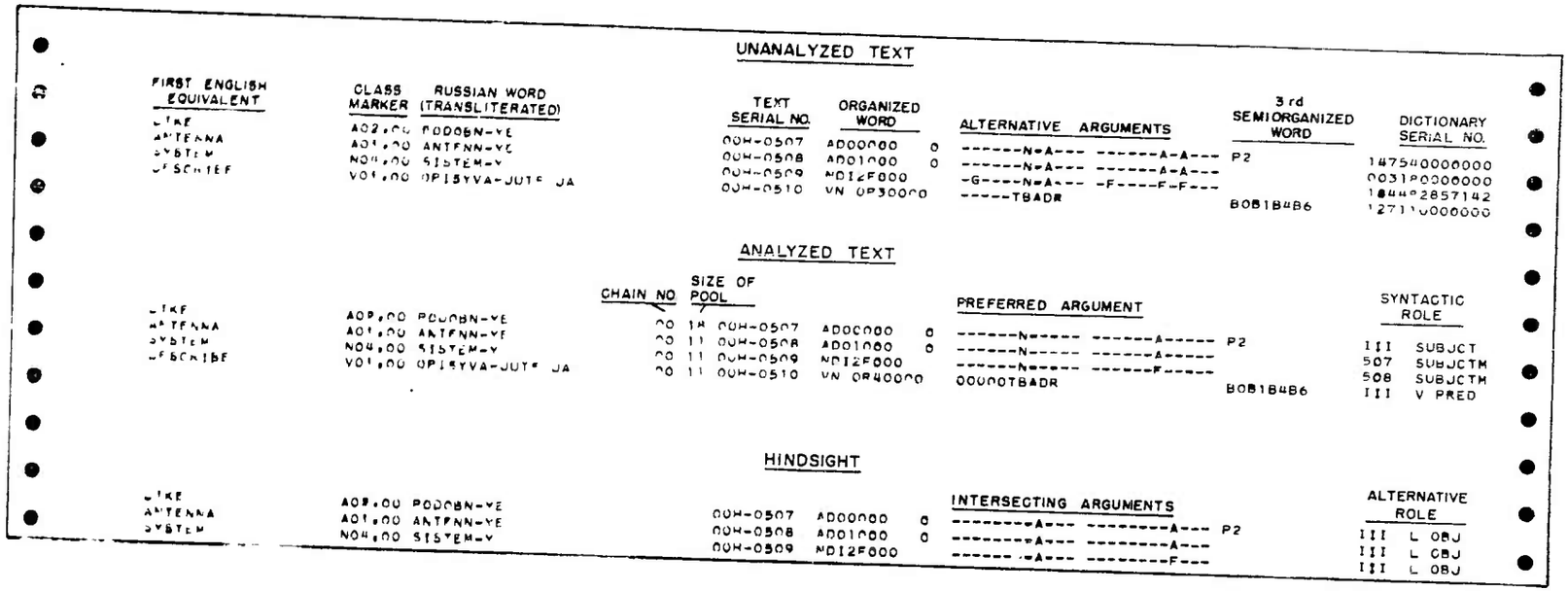
Hindsight Item



Wiped Prediction

Output Format of the Experimental Predictive Syntactic Analysis Program

Figure 1



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
LIKE	A02,00	PODOBN-YE	00H-0507	AD00000	0	------N=A--- -------A-A---	P2	147540000000
ANTENNA	A01,00	ANTENN-YE	00H-0508	AD01000	0	------N=A--- -------A-A---		003100000000
SYSTEM	N04,00	SISTEM-Y	00H-0509	ND12F000		-G----N=A--- -F-----F-F---		184402857142
DESCRIBE	V01,00	OPISYVA-JUT= JA	00H-0510	VN 0P30000		-----TBADR	B0B1B4B6	127110000000

ANALYZED TEXT

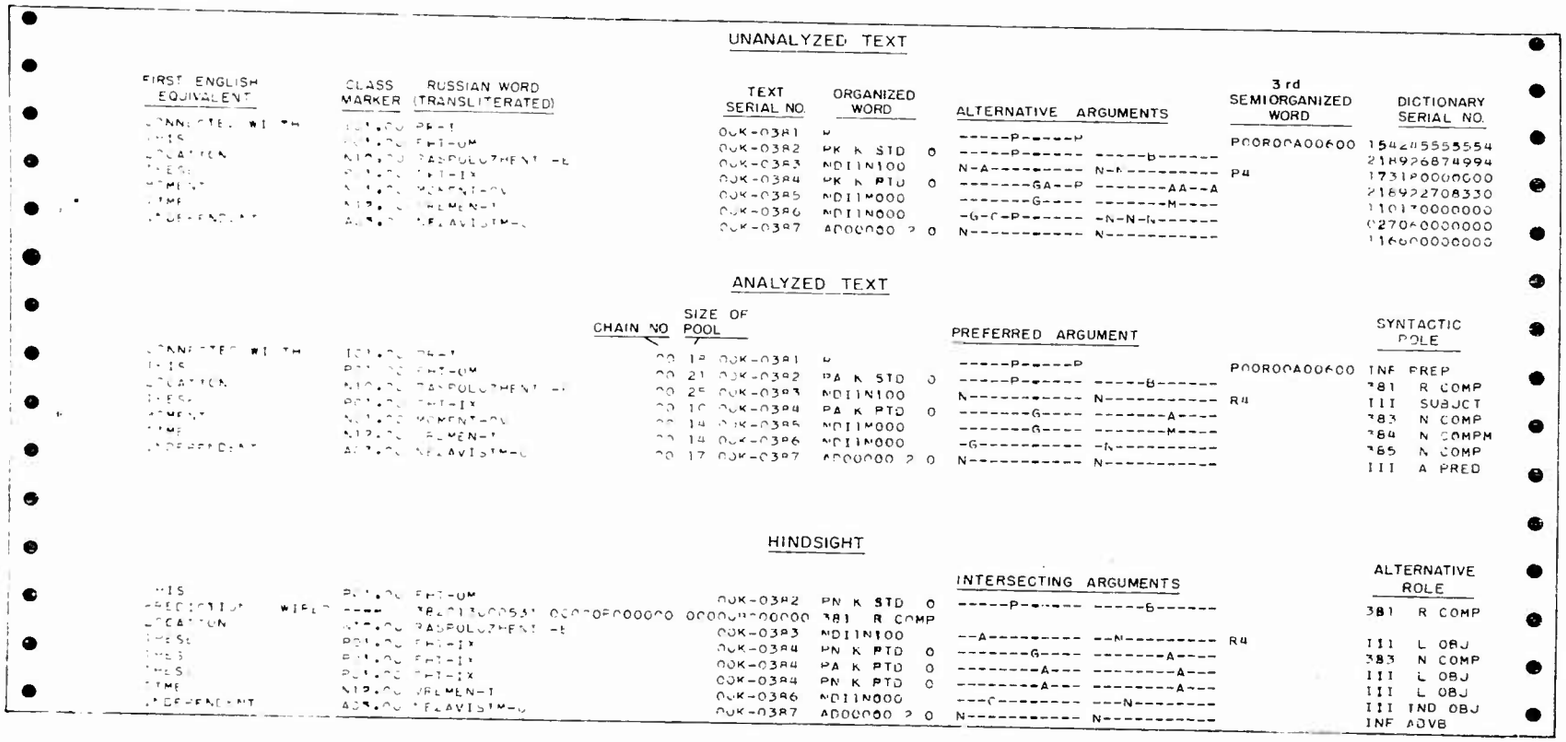
		CHAIN NO	SIZE OF POOL				PREFERRED ARGUMENT		SYNTACTIC ROLE
LIKE	A02,00 PODOBN-YE	00	1M	00H-0507	AD00000	0	------N------ ------A------	P2	III SUBJCT
ANTENNA	A01,00 ANTENN-YE	00	11	00H-0508	AD01000	0	------N------ ------A------		507 SUBJCTM
SYSTEM	N04,00 SISTEM-Y	00	11	00H-0509	ND12F000		------N------ ------F------		508 SUBJCTM
DESCRIBE	V01,00 OPISYVA-JUT= JA	00	11	00H-0510	VN 0P40000		00000TBADR	B0B1B4B6	III V PRED

HINDSIGHT

					INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
LIKE	A02,00 PODOBN-YE						
ANTENNA	A01,00 ANTENN-YE	00H-0507	AD00000	0	--------A--- ---------A---	P2	III L OBJ
SYSTEM	N04,00 SISTEM-Y	00H-0508	AD01000	0	--------A--- ---------A---		III L OBJ
		00H-0509	ND12F000		-------=A--- ---------F---		III L OBJ

A Basic Phrase

Figure 2



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
CONNECTED WITH	[illegible]	[illegible]	00K-0381	D		-----P-----P			
THIS	PRON	ETOT-OM	00K-0382	PK K STD	0	-----P-----	-----B------	P00R00A00600	1542055555554
LOCATION	NOUN	RASPOLOZHENIE -E	00K-0383	NDIIN100		N-A----------	N-N----------		21H926874994
THESE	PRON	ETOT-IX	00K-0384	PK K PTD	0	--------GA--P	--------AA--A	P4	1731P0000000
MOMENT	NOUN	MOMENT-OM	00K-0385	NDIIM000		--------G----	--------M-----		2189227083330
TIME	NOUN	VREMEN-I	00K-0386	NDIIN000		-G-C-P------	-N-N-N------		1101170000000
INDEPENDENT	ADJ	NEZAVISIM-O	00K-0387	ADOOOOO ? 0		N----------	N----------		0270A0000000
									1166000000000

ANALYZED TEXT

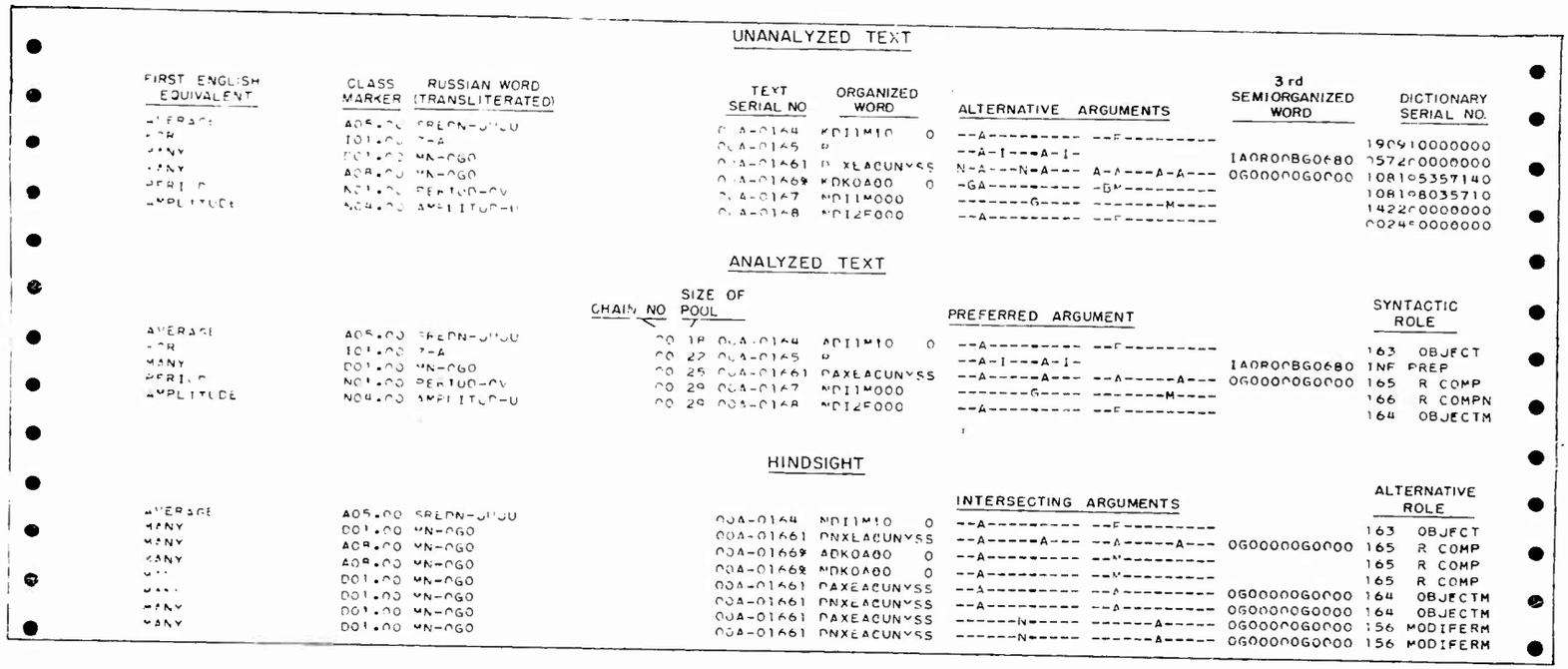
		CHAIN NO	SIZE OF POOL				PREFERRED ARGUMENT			SYNTACTIC ROLE
CONNECTED WITH	[illegible]	00	12	00K-0381	D		-----P-----P		P00R00A00600	INF PREP
THIS	PRON	00	21	00K-0382	PA K STD	0	-----P-----	-----B------		381 R COMP
LOCATION	NOUN	00	25	00K-0383	NDIIN100		N----------	N----------	R4	III SUBJCT
THESE	PRON	00	10	00K-0384	PA K PTD	0	--------G----	--------A----		383 N COMP
MOMENT	NOUN	00	14	00K-0385	NDIIM000		--------G----	--------M-----		384 N COMPM
TIME	NOUN	00	14	00K-0386	NDIIN000		-G----------	-N----------		385 N COMP
INDEPENDENT	ADJ	00	17	00K-0387	ADOOOOO ? 0		N----------	N----------		III A PRED

HINDSIGHT

						INTERSECTING ARGUMENTS			ALTERNATIVE ROLE
THIS	PRON	ETOT-OM							381 R COMP
PREDICTION	WIELD	[illegible]	00K-0382	PN K STD	0	-----P-----	-----B------		
LOCATION	NOUN	RASPOLOZHENIE -E	00K-0383	NDIIN100		--A----------	--N----------	R4	III L OBJ
THESE	PRON	ETOT-IX	00K-0384	PN K PTD	0	--------G----	--------A----		383 N COMP
THESE	PRON	ETOT-IX	00K-0384	PA K PTD	0	--------A----	--------A----		III L OBJ
TIME	NOUN	VREMEN-I	00K-0384	PN K PTD	0	--------A----	--------A----		III L OBJ
INDEPENDENT	ADJ	NEZAVISIM-O	00K-0386	NDIIN000		---C---------	---N---------		III IND OBJ
			00K-0387	ADOOOOO ? 0		N----------	N----------		INF ADVB

A Basic Phrase with an Unfulfilled Master Prediction

Figure 3



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO	ORGANIZED WORD		ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
AVERAGE	A05.00	SREDN-OYOU	00A-01644	ADIIM10	0	--A----------	--F----------		190910000000
FOR	I01.00	?-A	00A-01645	P		--A-I---A-I-			057200000000
MANY	D01.00	MN-OGO	00A-01661	DAXEACUNYSS		N-A---N-A---	A-A---A-A---	IAORONBGO680	108105357140
MANY	A08.00	MN-OGO	00A-01669	ADKOA00	0	-GA----------	-GM----------	OGOOOOOGOOOO	108108035710
PERIOD	N01.00	PERIOD-OY	00A-01662	MDKOA00	0	--------G-----	--------M-----		142200000000
AMPLITUDE	N04.00	AMPLITUD-U	00A-0167	MDIIM000		--A----------	--F----------		002450000000
			00A-0168	MDI2F000					

ANALYZED TEXT

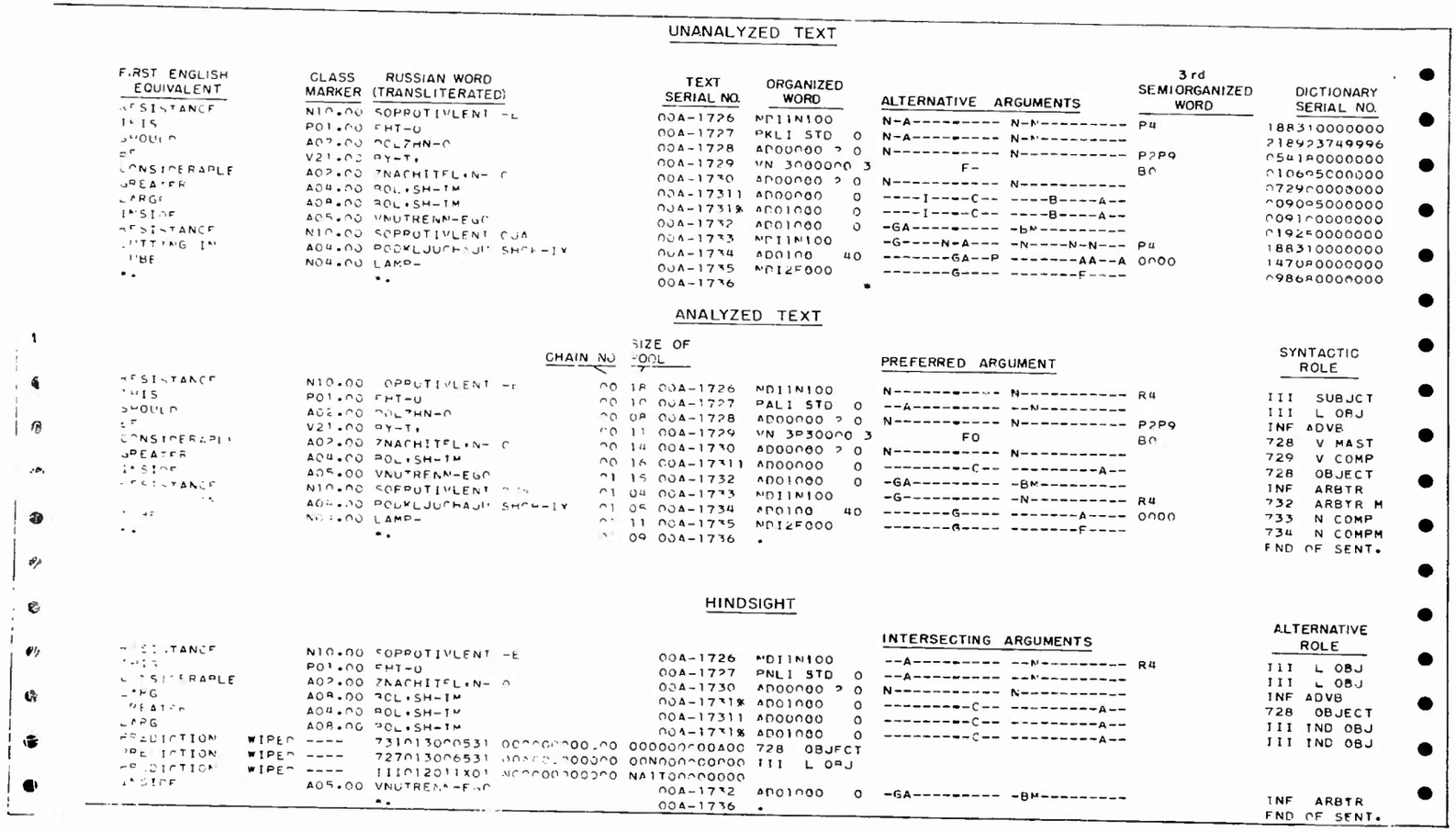
		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE
AVERAGE	A05.00	00	18	00A-01644	ADIIM10	--A----------	--F----------		163 OBJECT
FOR	I01.00	00	22	00A-01645	P	--A-I---A-I-		IAORONBGO680	INF PREP
MANY	D01.00	00	25	00A-01661	DAXEACUNYSS	--A------A---	--A------A---	OGOOOOOGOOOO	165 R COMP
PERIOD	N01.00	00	29	00A-0167	MDIIM000	--------G-----	--------M-----		166 R COMPN
AMPLITUDE	N04.00	00	29	00A-0168	MDI2F000	--A----------	--F----------		164 OBJECTM

HINDSIGHT

				INTERSECTING ARGUMENTS			ALTERNATIVE ROLE
AVERAGE	A05.00	SREDN-OYOU	00A-01644	ADIIM10	0	--A----------	--F----------		163 OBJECT
MANY	D01.00	MN-OGO	00A-01661	DNXEACUNYSS		--A------A---	--A------A---	OGOOOOOGOOOO	165 R COMP
MANY	A08.00	MN-OGO	00A-01669	ADKOA00	0	--A----------	--M----------		165 R COMP
MANY	A08.00	MN-OGO	00A-01662	MDKOA00	0	--A----------	--M----------		165 R COMP
MANY	D01.00	MN-OGO	00A-01661	DAXEACUNYSS		--A----------	--A----------	OGOOOOOGOOOO	164 OBJECTM
MANY	D01.00	MN-OGO	00A-01661	DNXEACUNYSS		--A----------	--A----------	OGOOOOOGOOOO	164 OBJECTM
MANY	D01.00	MN-OGO	00A-01661	DAXEACUNYSS		------N-----	------A-----	OGOOOOOGOOOO	156 MODIFERM
MANY	D01.00	MN-OGO	00A-01661	DNXEACUNYSS		------N-----	------A-----	OGOOOOOGOOOO	156 MODIFERM

A Basic Phrase with a Nested Prepositional Phrase

Figure 4



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
RESISTANCE	N10.00	SOPROTIVLENI -E	00A-1726	ND11N100	N-A----------	N-N----------	P4	188310000000
THIS	P01.00	ETO-U	00A-1727	PKLI STD 0	N-A----------	N-N----------		218923749996
SHOULD	A02.00	DOLZHN-O	00A-1728	AD00000 2 0	N----------	N----------	P2P9	0541A0000000
BE	V21.00	BY-T,	00A-1729	VN 3000000 3	F-		B0	0106B5C00000
CONSIDERABLE	A02.00	ZNACHITEL•N- O	00A-1730	AD00000 2 0	N----------	N----------		0729C0000000
GREATER	A04.00	BOL•SH-IM	00A-17311	AD00000 0	----I----C--	----B----A--		0090B5000000
LARGE	A08.00	BOL•SH-IM	00A-1731%	AD01000 0	----I----C--	----B----A--		0091C0000000
INSIDE	A05.00	VNUTRENN-EGO	00A-1732	AD01000 0	-GA----------	-BM----------		0192E0000000
RESISTANCE	N10.00	SOPROTIVLENI OOA	00A-1733	ND11N100	-G----N-A---	-N----N-N---	P4	188310000000
HITTING IN	A04.00	PODKLJUCHAJU SHCH-IY	00A-1734	AD0100 40	-------GA--P	-------AA--A	0000	1470B0000000
THE	N04.00	LAMP-	00A-1735	ND12F000	-------G----	-------F----		0986B0000000
..		*.	00A-1736	*				

ANALYZED TEXT

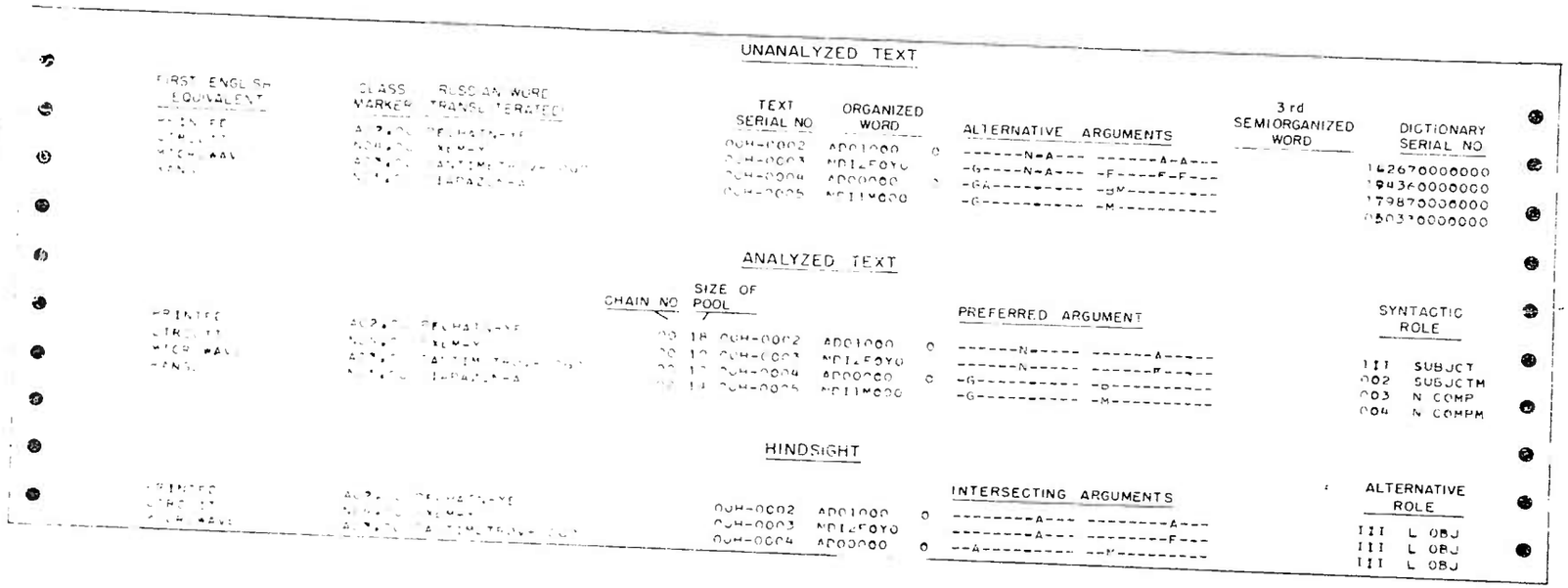
		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE
RESISTANCE	N10.00	OPPROTIVLENI -E	00	18 00A-1726	ND11N100	N----------	N----------	R4	III SUBJCT
THIS	P01.00	ETO-U	00	10 00A-1727	PALI STD 0	--A----------	--N----------		III L OBJ
SHOULD	A02.00	DOLZHN-O	00	08 00A-1728	AD00000 2 0	N----------	N----------	P2P9	INF ADVB
BE	V21.00	BY-T,	00	11 00A-1729	VN 3P30000 3	F0		B0	728 V MAST
CONSIDERABLE	A02.00	ZNACHITEL•N- O	00	14 00A-1730	AD00000 2 0	N----------	N----------		729 V COMP
GREATER	A04.00	BOL•SH-IM	00	16 00A-17311	AD00000 0	---------C--	----------A--		728 OBJECT
INSIDE	A05.00	VNUTRENN-EGO	01	15 00A-1732	AD01000 0	-GA----------	-BM----------		INF ARBTR
RESISTANCE	N10.00	SOPROTIVLENI OOA	01	04 00A-1733	ND11N100	-G----------	-N----------	R4	732 ARBTR M
HITTING IN	A04.00	PODKLJUCHAJU SHCH-IY	01	05 00A-1734	AD0100 40	-------G----	-------A----	0000	733 N COMP
THE	N04.00	LAMP-	01	11 00A-1735	ND12F000	-------G----	-------F----		734 N COMPM
..		*.	01	09 00A-1736	*				END OF SENT.

HINDSIGHT

						INTERSECTING ARGUMENTS			ALTERNATIVE ROLE
RESISTANCE	N10.00	SOPROTIVLENI -E		00A-1726	ND11N100				
THIS	P01.00	ETO-U		00A-1727	PNLI STD 0	--A----------	--N----------	R4	III L OBJ
CONSIDERABLE	A02.00	ZNACHITEL•N- O		00A-1730	AD00000 2 0	--A----------	--N----------		III L OBJ
LARG	A08.00	BOL•SH-IM		00A-1731%	AD01000 0	N----------	N----------		INF ADVB
GREATER	A04.00	BOL•SH-IM		00A-17311	AD00000 0	---------C--	----------A--		728 OBJECT
LARG	A08.00	BOL•SH-IM		00A-1731%	AD01000 0	---------C--	----------A--		III IND OBJ
PREDICTION	WIPED	----	731013000531	000000000000	000000000A00	---------C--	----------A--		III IND OBJ
PREDICTION	WIPED	----	727013006531	000000000000	00N000000000	728 OBJECT			
PREDICTION	WIPED	----	111012011X01	N0000000000	NA1T00000000	III L OBJ			
INSIDE	A05.00	VNUTRENN-EGO			00A-1732	AD01000 0	-GA----------	-BM----------	
		*.			00A-1736	*			INF ARBTR
									END OF SENT.

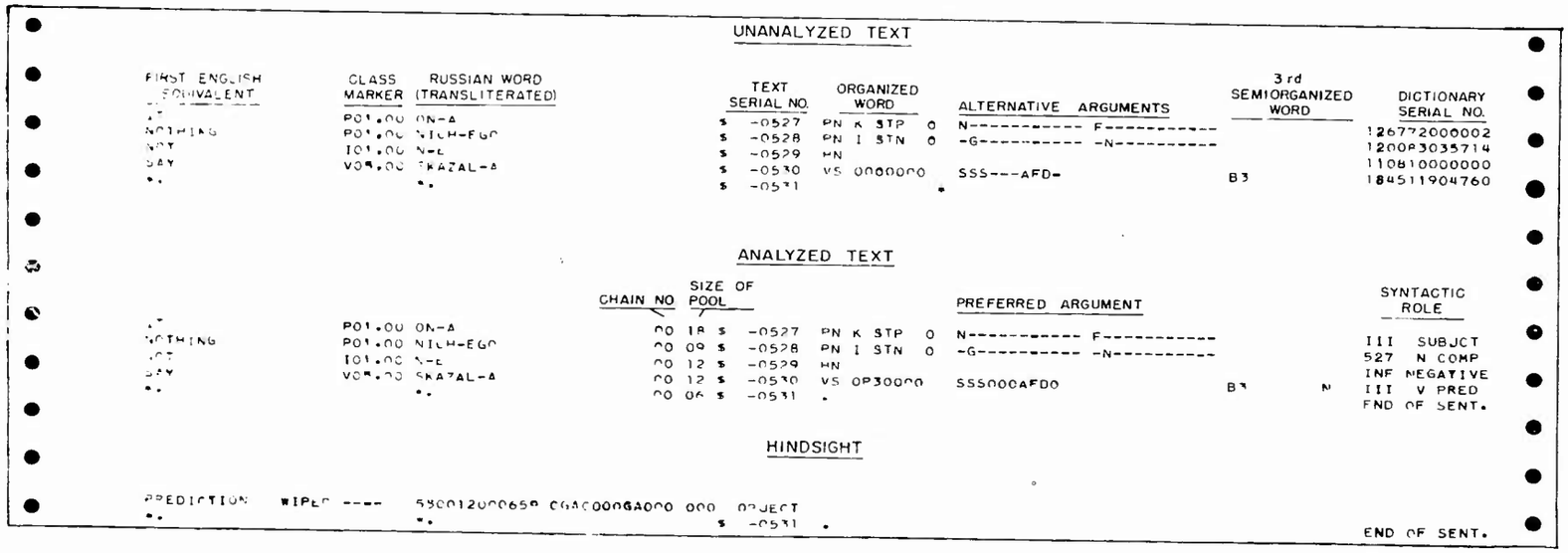
A Basic Phrase with a Noun Preceding an Adjective

Figure 5



A Noun Phrase

Figure 6



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
A	P01.00	ON-A	$ -0527	PN K STP 0	N---------- F----------		126772000002
NOTHING	P01.00	NICH-EGO	$ -0528	PN I STN 0	-G---------- -N----------		120083035714
NOT	I01.00	N-E	$ -0529	HN			110810000000
SAY	V04.00	SKAZAL-A	$ -0530	VS 0000000	SSS---AFD-	B3	184511904760
.		.	$ -0531	.			

ANALYZED TEXT

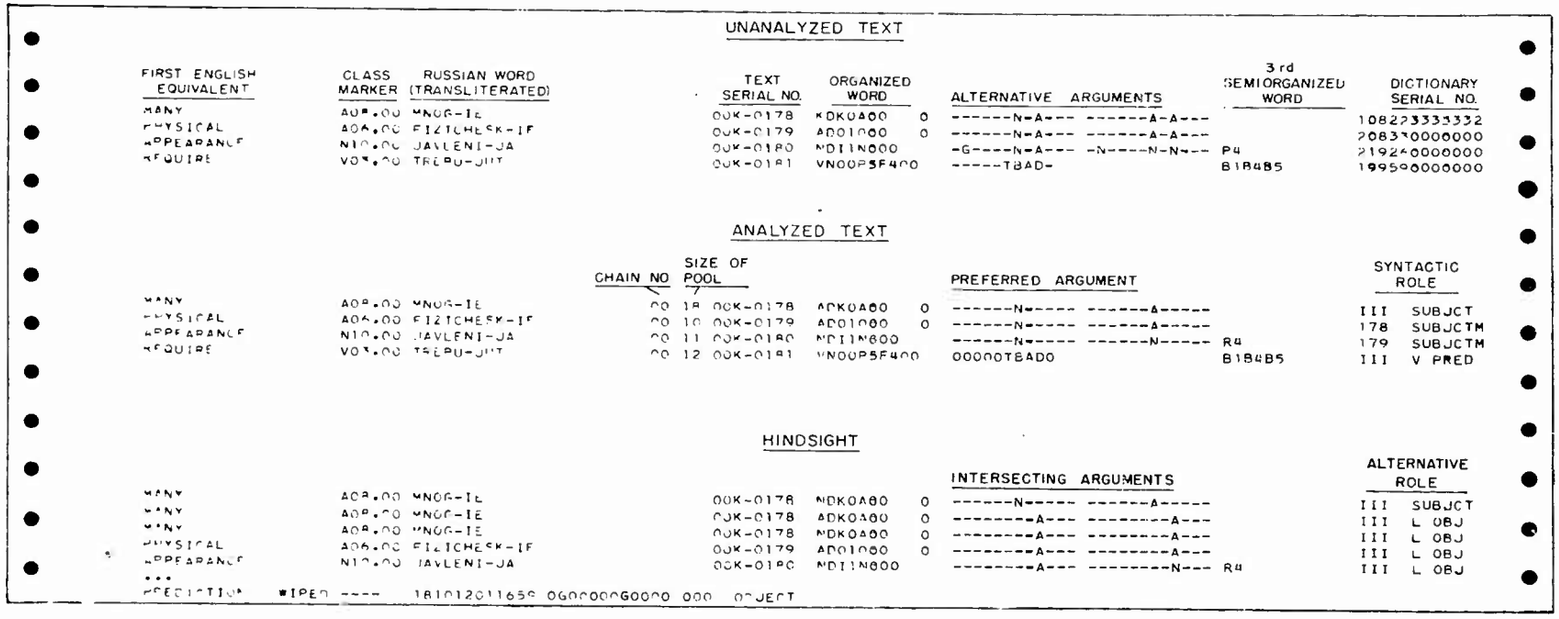
		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE
A	P01.00 ON-A	00	18	$ -0527	PN K STP 0	N---------- F----------			III SUBJCT
NOTHING	P01.00 NICH-EGO	00	09	$ -0528	PN I STN 0	-G---------- -N----------			527 N COMP
NOT	I01.00 N-E	00	12	$ -0529	HN				INF NEGATIVE
SAY	V04.00 SKAZAL-A	00	12	$ -0530	VS 0P30000	SSS000AFD0	B3	N	III V PRED
.	.	00	06	$ -0531	.				END OF SENT.

HINDSIGHT

PREDICTION	WIPE? ----	5800120006590 CGAC000GA000 000	OBJECT		
.	.		$ -0531	.	END OF SENT.

A Pronoun Incorrectly Analyzed as a Noun

Figure 7



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
MANY	A08.00	MNOG-IE	00K-0178	KDK0A00	0	------N=A--- ------A-A---		108223333332
PHYSICAL	A06.00	FIZICHESK-IE	00K-0179	AD01000	0	------N=A--- ------A-A---		208330000000
APPEARANCE	N10.00	JAVLENI-JA	00K-0180	MD11N000		-G----N=A--- -N----N-N---	P4	219240000000
REQUIRE	V03.00	TREBU-JIT	00K-0181	VN00P5F400		-----TBAD-	B1B4B5	199990000000

ANALYZED TEXT

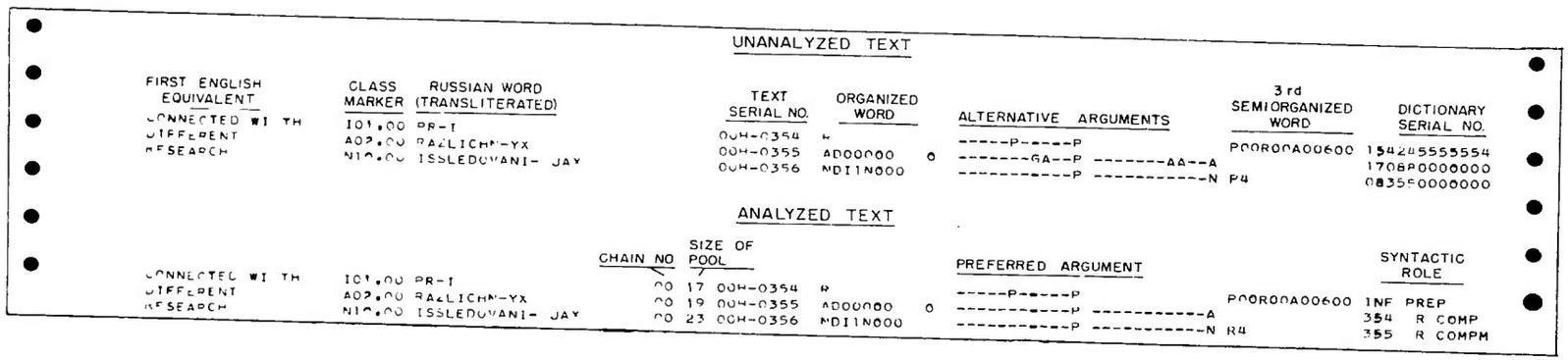
		CHAIN NO	SIZE OF POOL				PREFERRED ARGUMENT		SYNTACTIC ROLE
MANY	A08.00 MNOG-IE	00	10	00K-0178	ADK0A00	0	------N=----- ------A-----		III SUBJCT
PHYSICAL	A06.00 FIZICHESK-IE	00	10	00K-0179	AD01000	0	------N=----- ------A-----		178 SUBJCTM
APPEARANCE	N10.00 JAVLENI-JA	00	11	00K-0180	MD11N000		------N=----- ------N-----	R4	179 SUBJCTM
REQUIRE	V03.00 TREBU-JIT	00	12	00K-0181	VN00P5F400		00000TBAD0	B1B4B5	III V PRED

HINDSIGHT

					INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
MANY	A08.00 MNOG-IE	00K-0178	MDK0A00	0	------N=----- ------A-----		III SUBJCT
MANY	A08.00 MNOG-IE	00K-0178	ADK0A00	0	--------A--- --------A---		III L OBJ
MANY	A08.00 MNOG-IE	00K-0178	MDK0A00	0	--------A--- --------A---		III L OBJ
PHYSICAL	A06.00 FIZICHESK-IE	00K-0179	AD01000	0	--------A--- --------A---		III L OBJ
APPEARANCE	N10.00 JAVLENI-JA	00K-0180	MD11N000		--------A--- --------N---	R4	III L OBJ
*** PREDICTION	*IPED ----	1B1012011650	0600000G0000	000	OBJECT		

The Analysis of an Adjective-noun Homograph

Figure 8



UNANALYZED TEXT

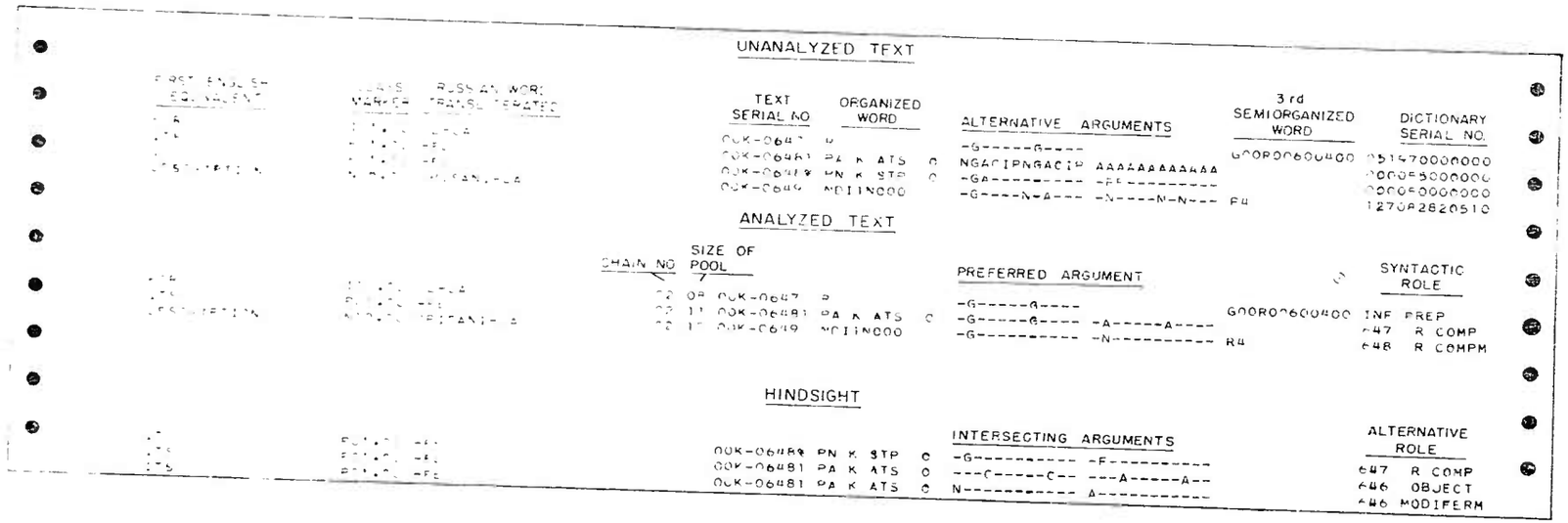
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
CONNECTED WITH	I01.00	PR-I	00H-0354	R		-----P-----P		
DIFFERENT	A02.00	RAZLICHN-YX	00H-0355	AD00000	0	-------GA--P --------AA--A	P00R00A00600	154245555554
RESEARCH	N10.00	ISSLEDOVANI- JAY	00H-0356	NDI1N000		----------P ----------N	P4	1708P0000000
								083550000000

ANALYZED TEXT

		CHAIN NO	SIZE OF POOL				PREFERRED ARGUMENT			SYNTACTIC ROLE
CONNECTED WITH	I01.00 PR-I	00	17	00H-0354	R		-----P-----P			
DIFFERENT	A02.00 RAZLICHN-YX	00	19	00H-0355	AD00000	0	----------P ----------A	P00R00A00600	INF PREP	
RESEARCH	N10.00 ISSLEDOVANI- JAY	00	23	00H-0356	NDI1N000		----------P ----------N	R4	354 R COMP	
									355 R COMPM	

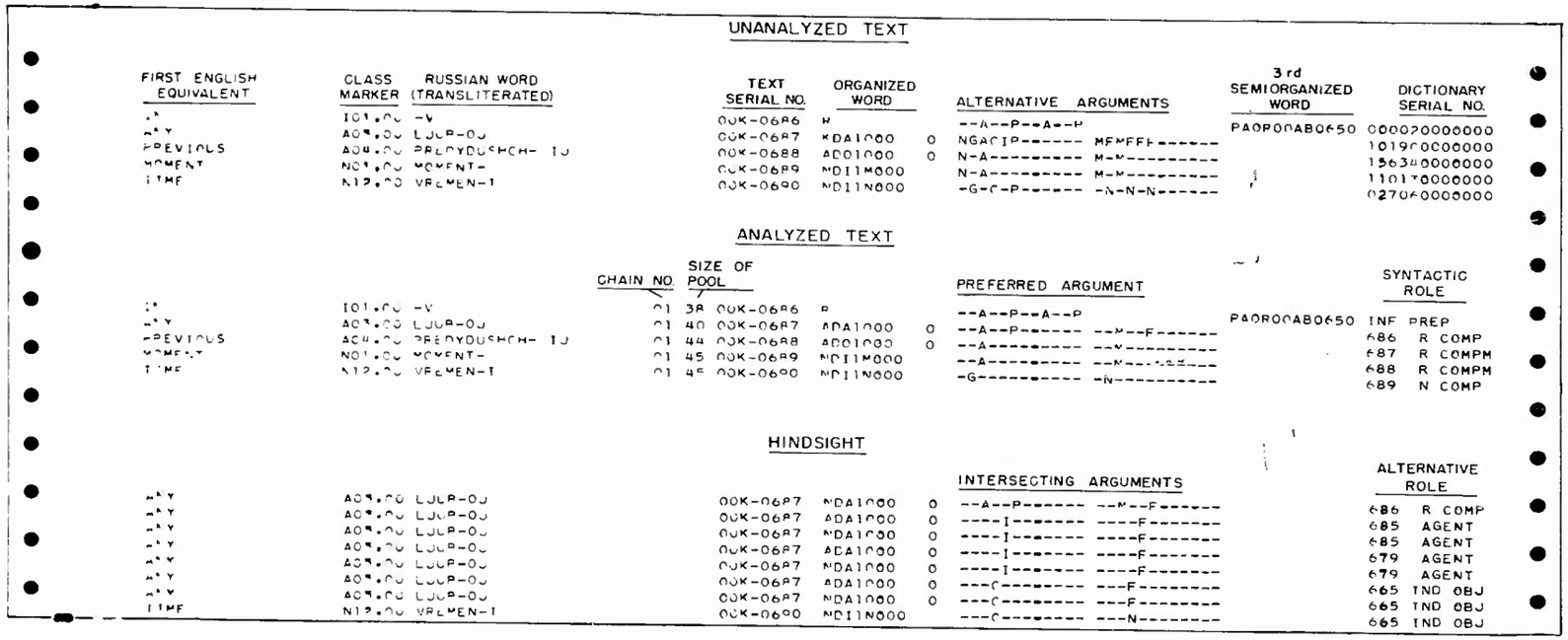
A Prepositional Phrase

Figure 9



A Prepositional Phrase with Number Ambiguity

Figure 10



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
[illegible]	101.00	-V	00K-0686	P		--A--P--A--P	PA0R00AB0650	0000?0000000
[illegible]	A07.00	LJUB-OJ	00K-0687	MDA1000	0	NGACIP------ MFMFFF------		1019?0000000
PREVIOUS	A04.00	PREDYDUSHCH- IJ	00K-0688	ADD1000	0	N-A--------- M-M---------		1563#0000000
MOMENT	N01.00	MOMENT-	00K-0689	MDI1M000		N-A--------- M-M---------		1101?0000000
TIME	N12.00	VREMEN-I	00K-0690	MDI1N000		-G-C-P------ -N-N-N------		0270?0000000

ANALYZED TEXT

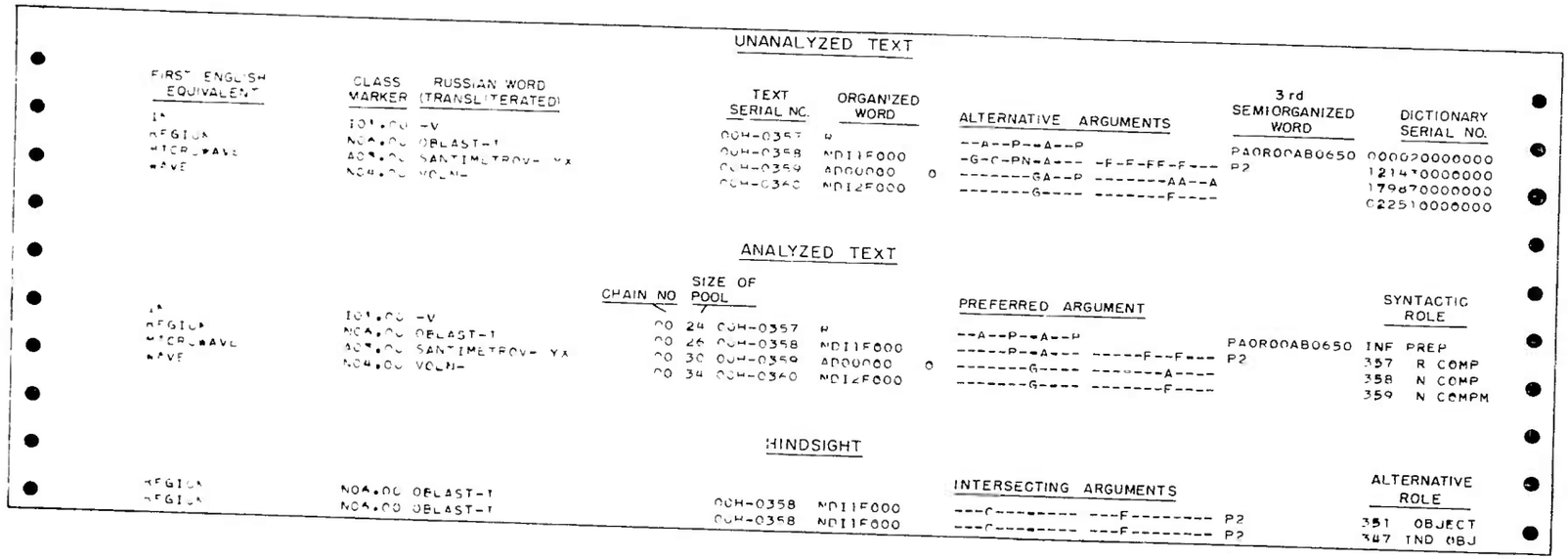
		CHAIN NO.	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
[illegible]	101.00 -V	01	38	00K-0686	P	--A--P--A--P	PA0R00AB0650	INF PREP
[illegible]	A07.00 LJUB-OJ	01	40	00K-0687	MDA1000 0	--A--P------ --M--F------		686 R COMP
PREVIOUS	A04.00 PREDYDUSHCH- IJ	01	44	00K-0688	ADD1000 0	--A--------- --M---------		687 R COMPM
MOMENT	N01.00 MOMENT-	01	45	00K-0689	MDI1M000	--A--------- --M---------		688 R COMPM
TIME	N12.00 VREMEN-I	01	45	00K-0690	MDI1N000	-G--------- -N---------		689 N COMP

HINDSIGHT

					INTERSECTING ARGUMENTS	ALTERNATIVE ROLE
[illegible]	A07.00 LJUB-OJ	00K-0687	MDA1000	0	--A--P------ --M--F------	686 R COMP
[illegible]	A07.00 LJUB-OJ	00K-0687	ADA1000	0	----I------- ----F-------	685 AGENT
[illegible]	A07.00 LJUB-OJ	00K-0687	MDA1000	0	----I------- ----F-------	685 AGENT
[illegible]	A07.00 LJUB-OJ	00K-0687	ADA1000	0	----I------- ----F-------	679 AGENT
[illegible]	A07.00 LJUB-OJ	00K-0687	MDA1000	0	----I------- ----F-------	679 AGENT
[illegible]	A07.00 LJUB-OJ	00K-0687	ADA1000	0	---C-------- ---F--------	665 IND OBJ
[illegible]	A07.00 LJUB-OJ	00K-0687	MDA1000	0	---C-------- ---F--------	665 IND OBJ
TIME	N12.00 VREMEN-I	00K-0690	MDI1N000		---C-------- ---N--------	665 IND OBJ

A Prepositional Phrase with Case Ambiguity

Figure 11



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
I*			00H-0357	P		--A--P--A--P			
REGION	NOA.00	OBLAST-I	00H-0358	NDIIF000		-G-C-PN-A---	-F-F-FF-F---	P2	000020000000
MICROWAVE	NOA.00	SANTIMETROV- YX	00H-0359	AD00000	0	-------GA--P	-------AA--A		121470000000
WAVE	NOA.00	VOLN-	00H-0360	NDIZF000		-------G----	-------F----		179670000000
									022510000000

ANALYZED TEXT

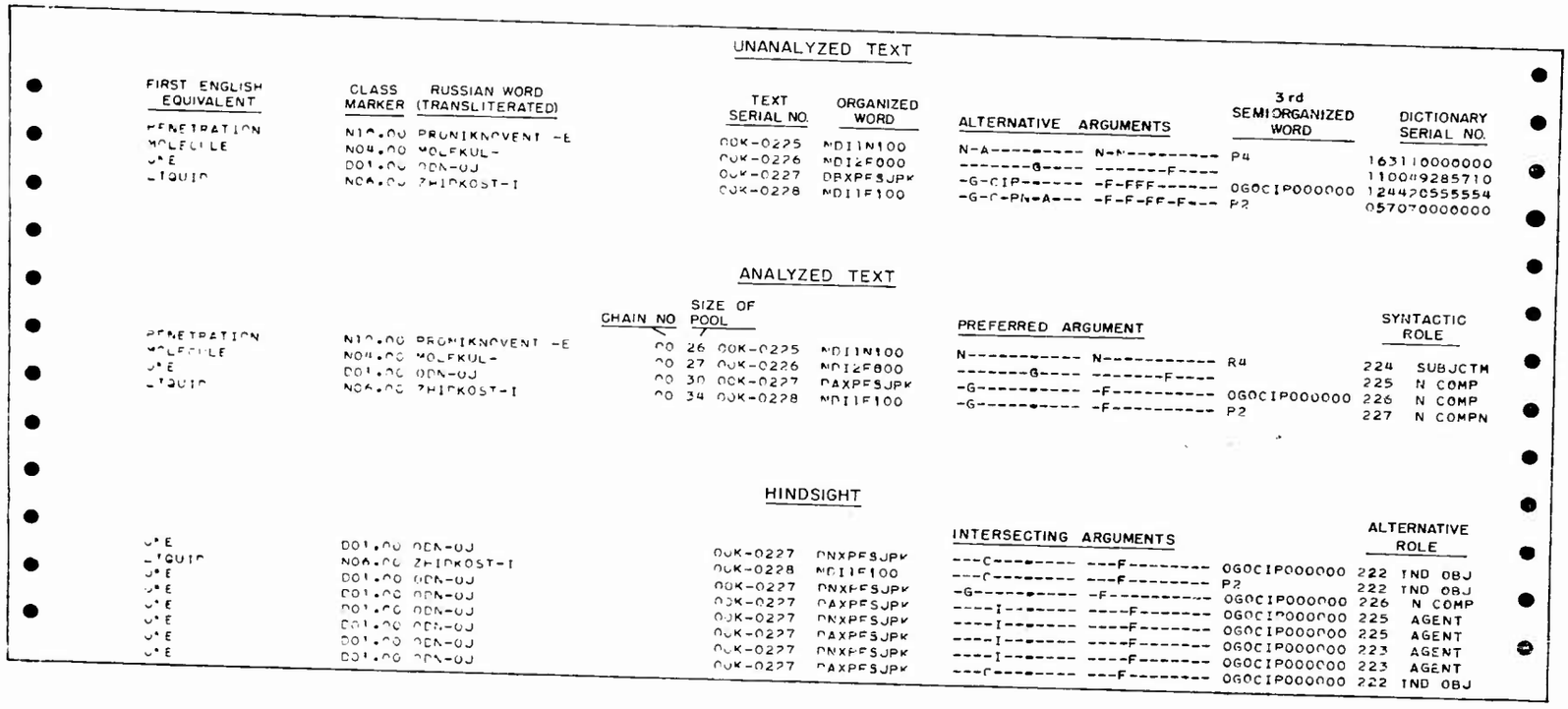
		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE
I*		00	24	00H-0357	P	--A--P--A--P			INF PREP
REGION	NOA.00 OBLAST-I	00	26	00H-0358	NDIIF000	-----P--A---	-----F--F---	P2	357 R COMP
MICROWAVE	NOA.00 SANTIMETROV- YX	00	30	00H-0359	AD00000 0	-------G----	-------A----		358 N COMP
WAVE	NOA.00 VOLN-	00	34	00H-0360	NDIZF000	-------G----	-------F----		359 N COMPM

HINDSIGHT

				INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
REGION	NOA.00 OBLAST-I	00H-0358	NDIIF000	---C---------	---F--------- P2	351 OBJECT
REGION	NOA.00 OBLAST-I	00H-0358	NDIIF000	---C---------	---F--------- P2	347 IND OBJ

A Prepositional Phrase with Case and Number Ambiguity

Figure 12



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI ORGANIZED WORD	DICTIONARY SERIAL NO.
PENETRATION	N10.00	PRONIKNOVENI -E	00K-0225	MDI1N100	N-A---------- N-N----------	P4	1631 10000000
MOLECULE	N04.00	MOLEKUL-	00K-0226	MDI2E000	-------G----- -------F-----		1100 #9285710
USE	D01.00	ODN-OJ	00K-0227	DBXPESJPK	-G-CIP------ -F-FFF------	0G0CIP000000	124420555554
LIQUID	N04.00	ZHIDKOST-I	00K-0228	MDI1E100	-G-C-PN-A---- -F-F-FF-F----	P2	057070000000

ANALYZED TEXT

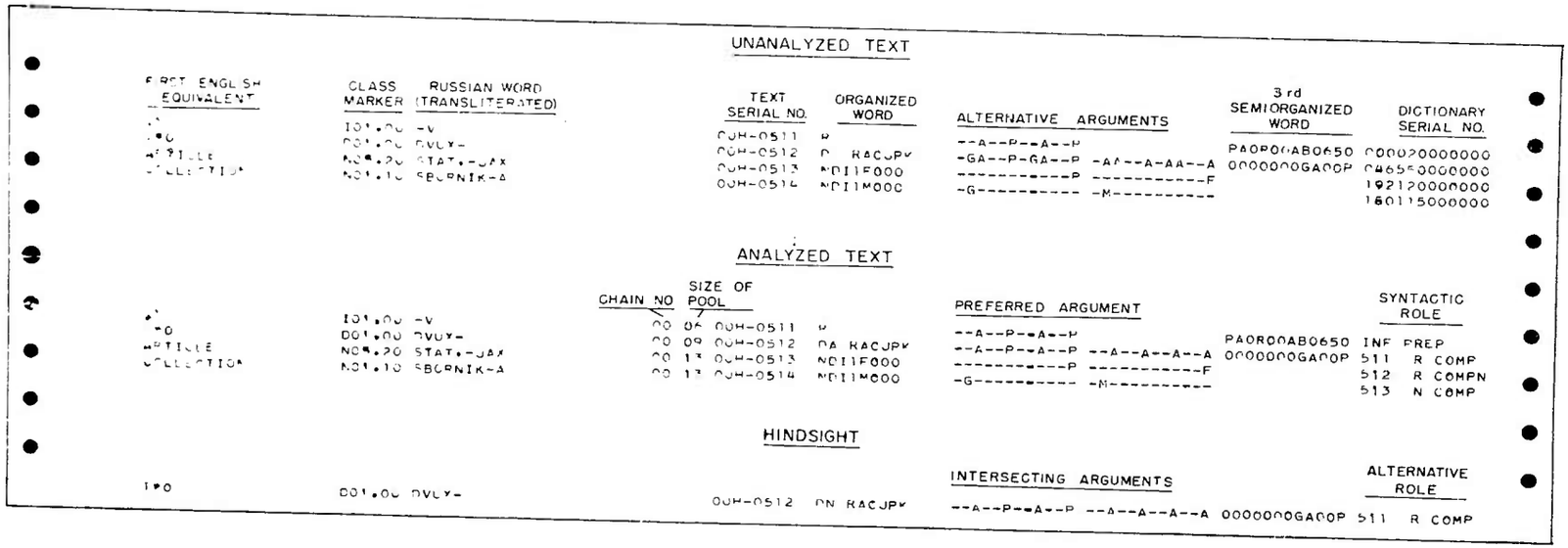
		CHAIN NO	SIZE OF POOL		PREFERRED ARGUMENT		SYNTACTIC ROLE	
PENETRATION	N10.00 PRONIKNOVENI -E	00	26	00K-0225	MDI1N100	N---------- N----------	R4	224 SUBJCTM
MOLECULE	N04.00 MOLEKUL-	00	27	00K-0226	MDI2E800	-------G----- -------F-----		225 N COMP
USE	D01.00 ODN-OJ	00	30	00K-0227	DAXPESJPK	-G---------- -F----------	0G0CIP000000	226 N COMP
LIQUID	N04.00 ZHIDKOST-I	00	34	00K-0228	MDI1E100	-G---------- -F----------	P2	227 N COMPN

HINDSIGHT

				INTERSECTING ARGUMENTS		ALTERNATIVE ROLE	
USE	D01.00 ODN-OJ	00K-0227	DNXPESJPK	---C---------- ---F----------	0G0CIP000000	222	IND OBJ
LIQUID	N04.00 ZHIDKOST-I	00K-0228	MDI1E100	---C---------- ---F----------	P2	222	IND OBJ
USE	D01.00 ODN-OJ	00K-0227	DNXPESJPK	-G---------- -F----------	0G0CIP000000	226	N COMP
USE	D01.00 ODN-OJ	00K-0227	DAXPESJPK	----I--------- ----F---------	0G0CIP000000	225	AGENT
USE	D01.00 ODN-OJ	00K-0227	DNXPESJPK	----I--------- ----F---------	0G0CIP000000	225	AGENT
USE	D01.00 ODN-OJ	00K-0227	DAXPESJPK	----I--------- ----F---------	0G0CIP000000	223	AGENT
USE	D01.00 ODN-OJ	00K-0227	DNXPESJPK	----I--------- ----F---------	0G0CIP000000	223	AGENT
USE	D01.00 ODN-OJ	00K-0227	DAXPESJPK	---C---------- ---F----------	0G0CIP000000	222	IND OBJ

A Numeral Phrase with a Numeral of the First Type

Figure 13



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
[illegible]	[illegible]	[illegible]	00H-0511	P	--A--P--A--P		
[illegible]	[illegible]	[illegible]	00H-0512	P RACUPK	-GA--P-GA--P -AA--A-AA--A	PA0R00AB0650	000020000000
[illegible]	[illegible]	[illegible]	00H-0513	NDIIF000	----------P ----------F	0000000GA00P	046550000000
[illegible]	[illegible]	[illegible]	00H-0514	NDIIM000	-G---------- -M----------		192120000000
							180115000000

ANALYZED TEXT

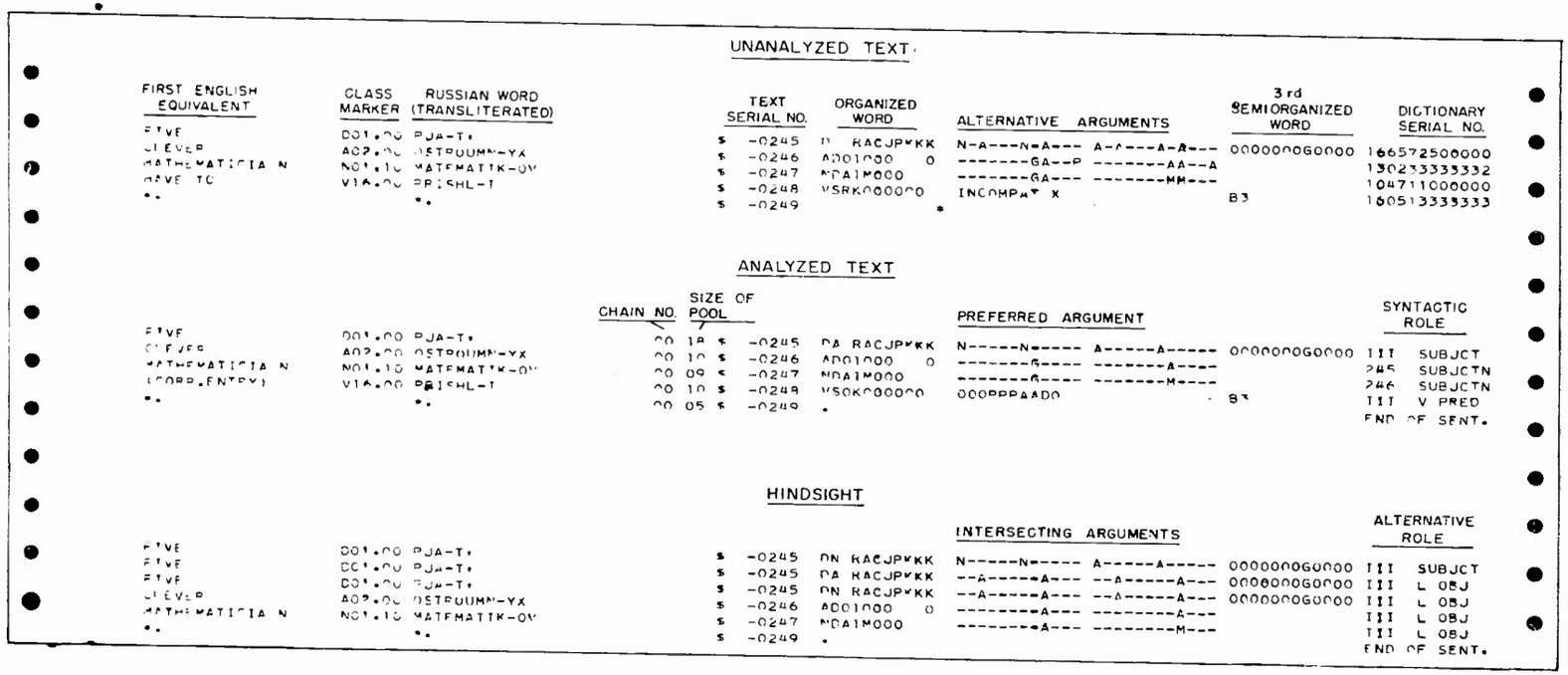
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	CHAIN NO	SIZE OF POOL	TEXT SERIAL NO.	ORGANIZED WORD	PREFERRED ARGUMENT		SYNTACTIC ROLE
[illegible]	[illegible]	[illegible]	00	08	00H-0511	P	--A--P--A--P		
[illegible]	[illegible]	[illegible]	00	09	00H-0512	PA RACUPK	--A--P--A--P	--A--A--A--A	INF PREP
[illegible]	[illegible]	[illegible]	00	13	00H-0513	NDIIF000	----------P	----------F	511 R COMP
[illegible]	[illegible]	[illegible]	00	13	00H-0514	NDIIM000	-G----------	-M----------	512 R COMPN
									513 N COMP

HINDSIGHT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	INTERSECTING ARGUMENTS		3rd SEMIORGANIZED WORD	ALTERNATIVE ROLE
[illegible]	[illegible]	[illegible]	00H-0512	PA RACUPK	--A--P--A--P	--A--A--A--A	0000000GA00P	511 R COMP

A Numeral Phrase with a Numeral of the First Type

Figure 14



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
FIVE	D01.00	PJA-T.	$ -0245	D RACJPKKK	N-A---N-A--- A-A---A-A---	000000G0000	166572500000
CLEVER	A02.00	OSTROUMN-YX	$ -0246	ADO1000 0	-------GA--P -------AA--A		130233333332
MATHEMATICIA N	N01.10	MATEMATIK-OV	$ -0247	MDA1M000	-------GA--- -------MM---		104711000000
HAVE TO	V16.00	PRISHL-T	$ -0248	WSRK000000	INCOMPAT X	B3	160513333333
*.		*.	$ -0249	*			

ANALYZED TEXT

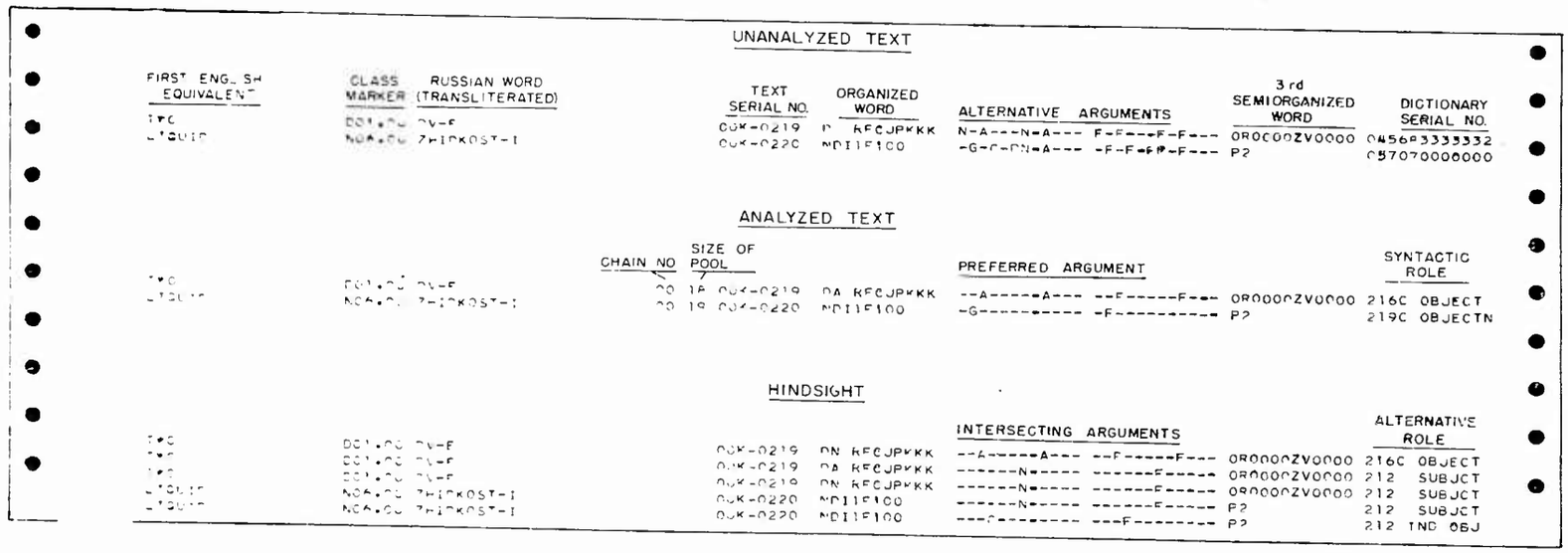
		CHAIN NO.	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
FIVE	D01.00 PJA-T.	00	18	$ -0245	DA RACJPKKK	N-----N----- A-----A-----	000000G0000	III SUBJCT
CLEVER	A02.00 OSTROUMN-YX	00	10	$ -0246	ADO1000 0	-------G---- -------A----		245 SUBJCTN
MATHEMATICIA N	N01.10 MATEMATIK-OV	00	09	$ -0247	MDA1M000	-------G---- -------M----		246 SUBJCTN
(CORR.ENTRY)	V16.00 PRISHL-T	00	10	$ -0248	WSRK000000	OOOPPPAADO	B3	III V PRED
*.	*.	00	05	$ -0249	*			END OF SENT.

HINDSIGHT

				INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
FIVE	D01.00 PJA-T.	$ -0245	DN RACJPKKK	N-----N----- A-----A-----	000000G0000	III SUBJCT
FIVE	D01.00 PJA-T.	$ -0245	DA RACJPKKK	--A-----A--- --A-----A---	000000G0000	III L OBJ
FIVE	D01.00 PJA-T.	$ -0245	DN RACJPKKK	--A-----A--- --A-----A---	000000G0000	III L OBJ
CLEVER	A02.00 OSTROUMN-YX	$ -0246	ADO1000 0	--------A--- --------A---		III L OBJ
MATHEMATICIA N	N01.10 MATEMATIK-OV	$ -0247	MDA1M000	--------A--- --------M---		III L OBJ
*.	*.	$ -0249	*			END OF SENT.

A Numeral Phrase with a Numeral of the Second Type

Figure 15



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
THE	DET.00 ?V=F		00K-0219	P REGJPKKK	N-A---N=A--- F-F---F-F---	OR0C00ZV0000	0456P3333332
EQUIP	NOA.00 ?HIPKOST-I		00K-0220	MDIIF100	-G-C-DN=A--- -F-F=FP-F---	P2	057070000000

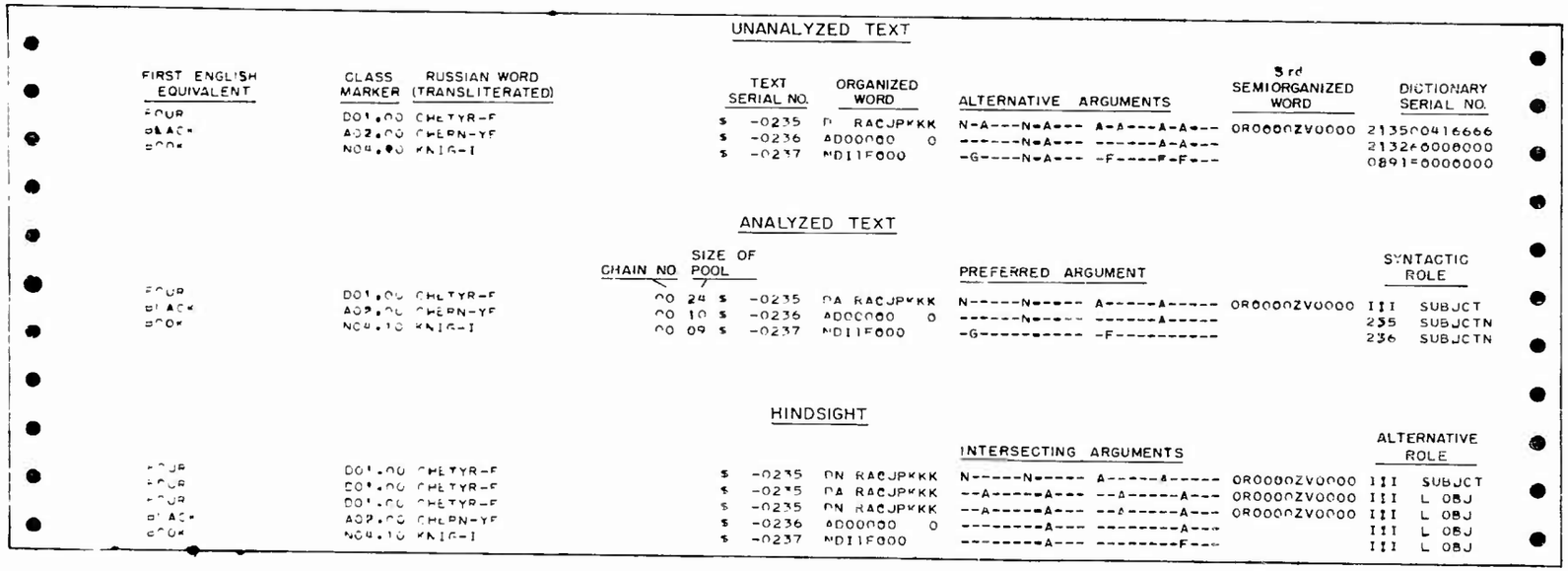
ANALYZED TEXT

		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
THE	DET.00 ?V=F	00	1P	00K-0219	DA REGJPKKK	--A-----A--- --F-----F---	OR0000ZV0000	216C OBJECT
EQUIP	NOA.00 ?HIPKOST-I	00	19	00K-0220	MDIIF100	-G----------- -F----------	P2	219C OBJECTN

HINDSIGHT

				INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
THE	DET.00 ?V=F	00K-0219	DN REGJPKKK	--A-----A--- --F-----F---	OR0000ZV0000	216C OBJECT
THE	DET.00 ?V=F	00K-0219	DA REGJPKKK	------N----- ------F-----	OR0000ZV0000	212 SUBJCT
THE	DET.00 ?V=F	00K-0219	DN REGJPKKK	------N----- ------F-----	OR0000ZV0000	212 SUBJCT
EQUIP	NOA.00 ?HIPKOST-I	00K-0220	MDIIF100	------N----- ------F-----	P2	212 SUBJCT
EQUIP	NOA.00 ?HIPKOST-I	00K-0220	MDIIF100	---C--------- ---F---------	P2	212 IND OBJ

A Numeral Phrase with a Numeral of the Third Type
Figure 16



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
FOUR	D01.00	CHETYR-F	$ -0235	D RACJPKKK	N-A---N=A--- A-A---A-A---	OR0000ZV0000	213500416666
BLACK	A02.00	CHERN-YE	$ -0236	AD00000 0	------N=A--- -------A-A---		21326000000
BOOK	N04.00	KNIG-I	$ -0237	NDIIE000	-G----N=A--- -F----F-F---		0891=0000000

ANALYZED TEXT

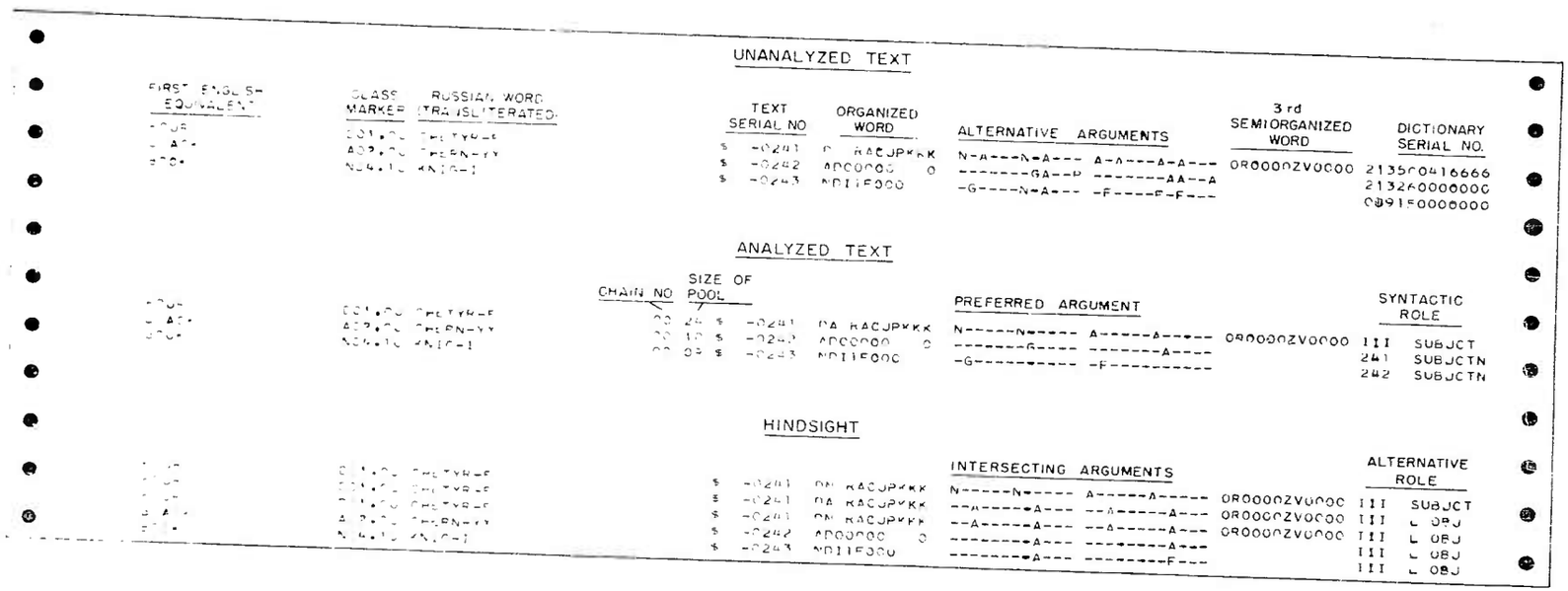
		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE	
FOUR	D01.00	CHETYR-F	00 24	$ -0235	DA RACJPKKK	N------N=---- A------A------	OR0000ZV0000	III	SUBJCT
BLACK	A02.00	CHERN-YE	00 10	$ -0236	AD00000 0	-------N=---- -------A------		255	SUBJCTN
BOOK	N04.00	KNIG-I	00 09	$ -0237	NDIIE000	-G---------- -F----------		236	SUBJCTN

HINDSIGHT

					INTERSECTING ARGUMENTS		ALTERNATIVE ROLE	
FOUR	D01.00	CHETYR-F	$ -0235	DN RACJPKKK	N------N=---- A------A------	OR0000ZV0000	III	SUBJCT
FOUR	D01.00	CHETYR-F	$ -0235	DA RACJPKKK	--A------A--- --A------A---	OR0000ZV0000	III	L OBJ
FOUR	D01.00	CHETYR-F	$ -0235	DN RACJPKKK	--A------A--- --A------A---	OR0000ZV0000	III	L OBJ
BLACK	A02.00	CHERN-YE	$ -0236	AD00000 0	--------A--- --------A---		III	L OBJ
BOOK	N04.00	KNIG-I	$ -0237	NDIIE000	--------A--- --------F---		III	L OBJ

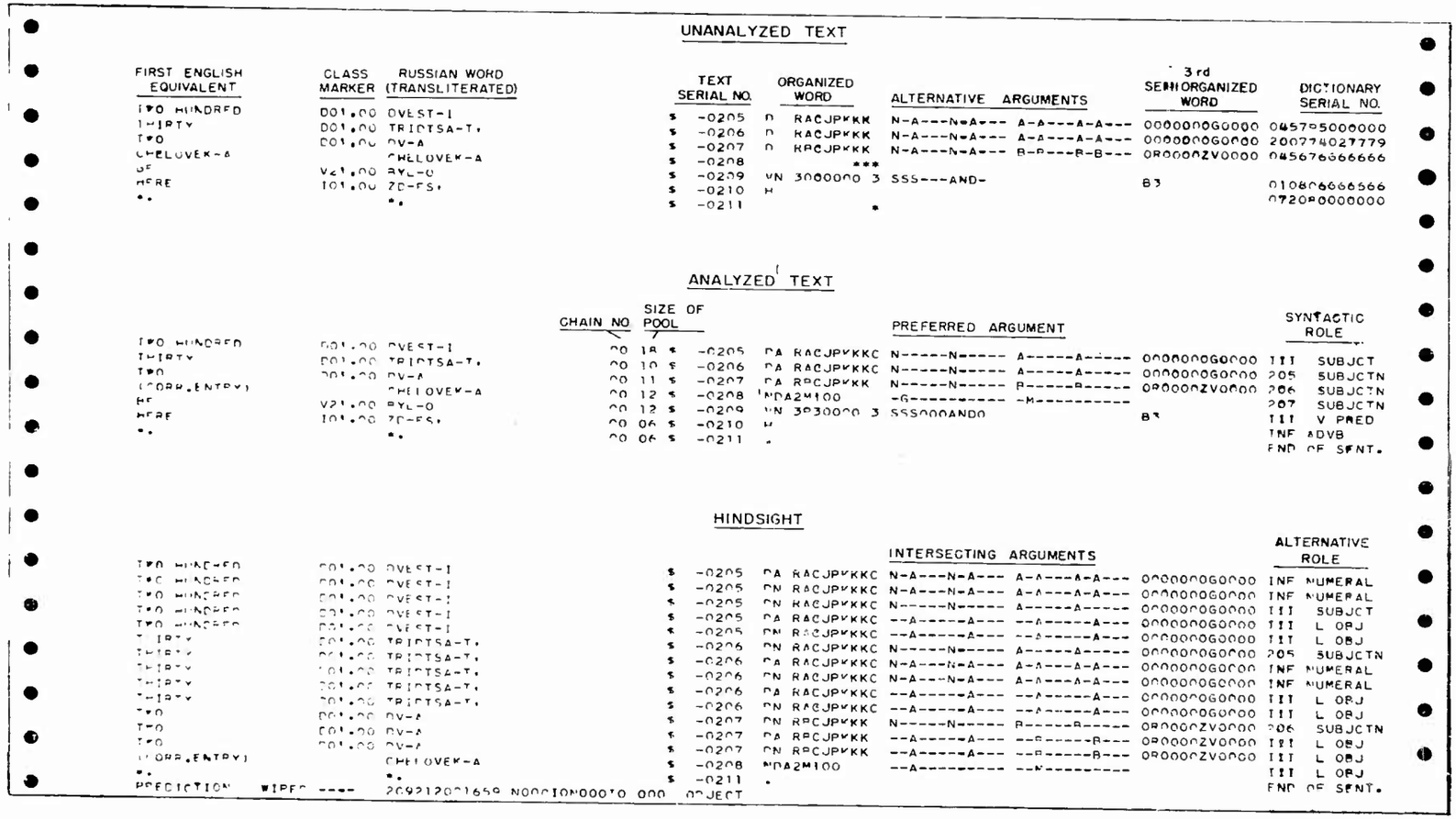
A Numeral Phrase with a Numeral of the Third Type

Figure 17



A Numeral Phrase with a Numeral of the Third Type

Figure 18



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.		ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEM ORGANIZED WORD	DICTIONARY SERIAL NO.
TWO HUNDRED	001.00	DVEST-I	$ -0205	D	RACJPYKKK	N-A---N-A--- A-A---A-A---	0000000G0000	045705000000
THIRTY	001.00	TRIDTSA-T.	$ -0206	D	RACJPYKKK	N-A---N-A--- A-A---A-A---	0000000G0000	200774027779
TWO	001.00	DV-A	$ -0207	D	RPCJPYKK	N-A---N-A--- B-B---B-B---	0R0000ZV0000	045676666666
CHELOVEK-A		CHELOVEK-A	$ -0208		***			
OF	V21.00	PYL-O	$ -0209	VN	3000000 3	SSS---AND-	B3	010806666566
HERE	101.00	ZD-FS.	$ -0210	M				0720P0000000
*.		*.	$ -0211		*			

ANALYZED TEXT

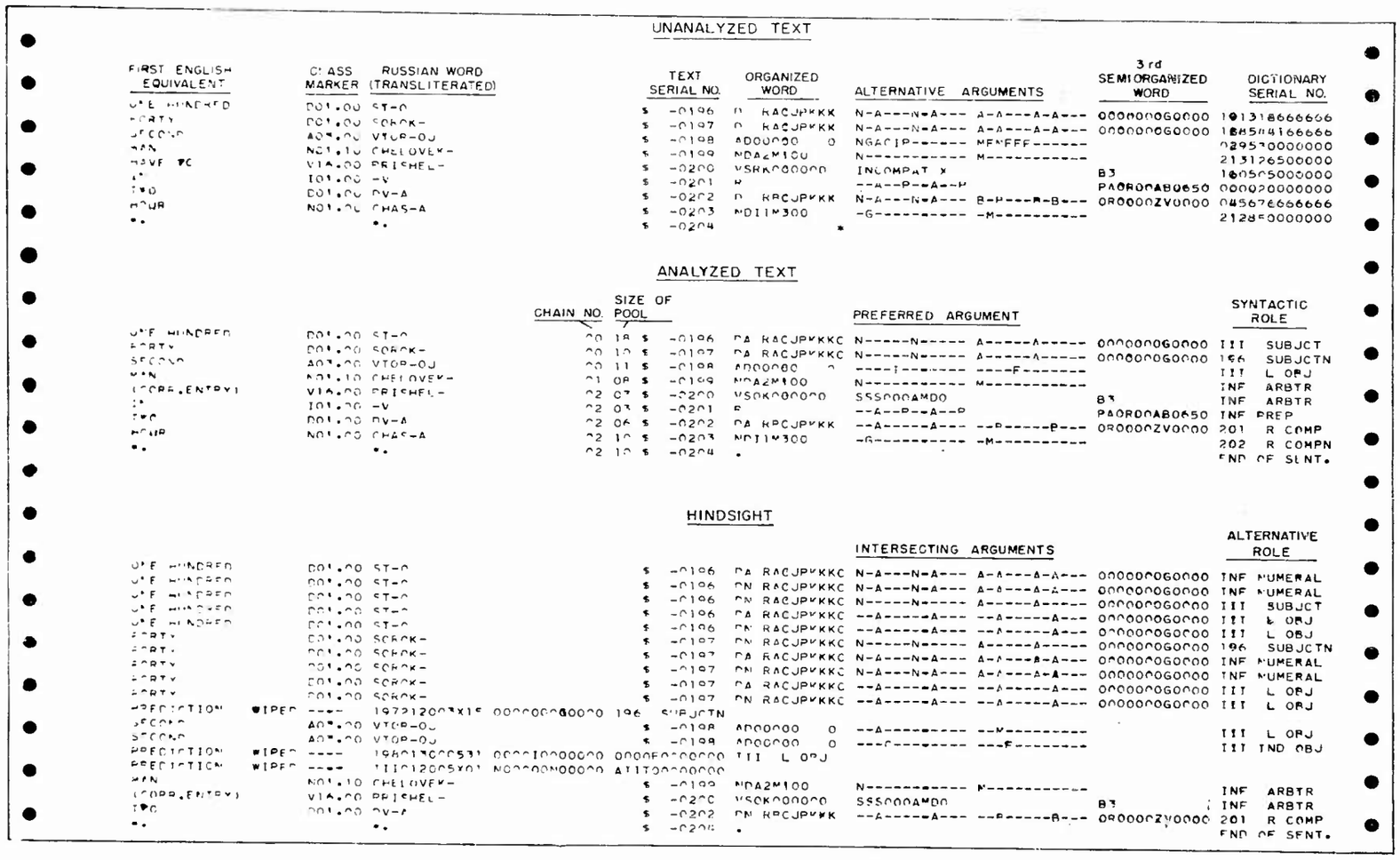
			CHAIN NO	SIZE OF POOL				PREFERRED ARGUMENT		SYNTACTIC ROLE	
TWO HUNDRED	001.00	DVEST-I	00	18	$	-0205	DA	RACJPYKKC	N-----N----- A-----A-----	0000000G0000	III SUBJCT
THIRTY	001.00	TRIDTSA-T.	00	10	$	-0206	DA	RACJPYKKC	N-----N----- A-----A-----	0000000G0000	205 SUBJCTN
TWO	001.00	DV-A	00	11	$	-0207	DA	RPCJPYKK	N-----N----- B-----B-----	0R0000ZV0000	206 SUBJCTN
(CORR.ENTRY)		CHELOVEK-A	00	12	$	-0208	MDA2M100		-G---------- -M----------		207 SUBJCTN
OF	V21.00	PYL-O	00	12	$	-0209	VN	3P30000 3	SSS000AND0	B3	III V PRED
HERE	101.00	ZD-FS.	00	06	$	-0210	M				INF ADVB
*.		*.	00	06	$	-0211	.				END OF SENT.

HINDSIGHT

								INTERSECTING ARGUMENTS		ALTERNATIVE ROLE	
TWO HUNDRED	001.00	DVEST-I	$	-0205	DA	RACJPYKKC	N-A---N-A---	A-A---A-A---	0000000G0000	INF NUMERAL	
TWO HUNDRED	001.00	DVEST-I	$	-0205	DN	RACJPYKKC	N-A---N-A---	A-A---A-A---	0000000G0000	INF NUMERAL	
TWO HUNDRED	001.00	DVEST-I	$	-0205	DA	RACJPYKKC	N-----N-----	A-----A-----	0000000G0000	III SUBJCT	
TWO HUNDRED	001.00	DVEST-I	$	-0205	DA	RACJPYKKC	--A-----A---	--A-----A---	0000000G0000	III L OBJ	
TWO HUNDRED	001.00	DVEST-I	$	-0205	DN	RACJPYKKC	--A-----A---	--A-----A---	0000000G0000	III L OBJ	
THIRTY	001.00	TRIDTSA-T.	$	-0206	DN	RACJPYKKC	N-----N-----	A-----A-----	0000000G0000	205 SUBJCTN	
THIRTY	001.00	TRIDTSA-T.	$	-0206	DA	RACJPYKKC	N-A---N-A---	A-A---A-A---	0000000G0000	INF NUMERAL	
THIRTY	001.00	TRIDTSA-T.	$	-0206	DN	RACJPYKKC	N-A---N-A---	A-A---A-A---	0000000G0000	INF NUMERAL	
THIRTY	001.00	TRIDTSA-T.	$	-0206	DA	RACJPYKKC	--A-----A---	--A-----A---	0000000G0000	III L OBJ	
THIRTY	001.00	TRIDTSA-T.	$	-0206	DN	RACJPYKKC	--A-----A---	--A-----A---	0000000G0000	III L OBJ	
TWO	001.00	DV-A	$	-0207	DN	RPCJPYKK	N-----N-----	B-----B-----	0R0000ZV0000	206 SUBJCTN	
TWO	001.00	DV-A	$	-0207	DA	RPCJPYKK	--A-----A---	--B-----B---	0R0000ZV0000	III L OBJ	
TWO	001.00	DV-A	$	-0207	DN	RPCJPYKK	--A-----A---	--B-----B---	0R0000ZV0000	III L OBJ	
(CORR.ENTRY)		CHELOVEK-A	$	-0208	MDA2M100		--A----------	--M----------		III L OBJ	
*.		*.	$	-0211	.					END OF SENT.	
PREDICTION WIPES ----		209212021659 N000ION000T0 000 OBJECT									

A Chain Numeral

Figure 19



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
ONE HUNDRED	D01.00	ST-O	$ -0196	D RACJPPKKK	N-A---N-A---	A-A---A-A---	000000060000	191318666666
FORTY	D01.00	SOROK-	$ -0197	D RACJPPKKK	N-A---N-A---	A-A---A-A---	000000060000	1885#4166666
SECOND	A03.00	VTOR-OJ	$ -0198	AD00000 0	NGACIP------	MFNFFF------		029530000000
MAN	N01.10	CHELOVEK-	$ -0199	NDA2M100	N----------	M----------		213126500000
HAVE PC	V1A.00	PRISHEL-	$ -0200	VSRK000000	INCOMPAT X		B3	160505000000
A	I01.00	-V	$ -0201	P	--A--P--A--P		PA0R00AB0650	000020000000
TWO	D01.00	DV-A	$ -0202	D RPCJPPKK	N-A---N-A---	B-P---P-B---	0R0000ZV0000	045676666666
HOUR	N01.00	CHAS-A	$ -0203	ND11M300	-G----------	-M----------		212850000000
..		..	$ -0204	*				

ANALYZED TEXT

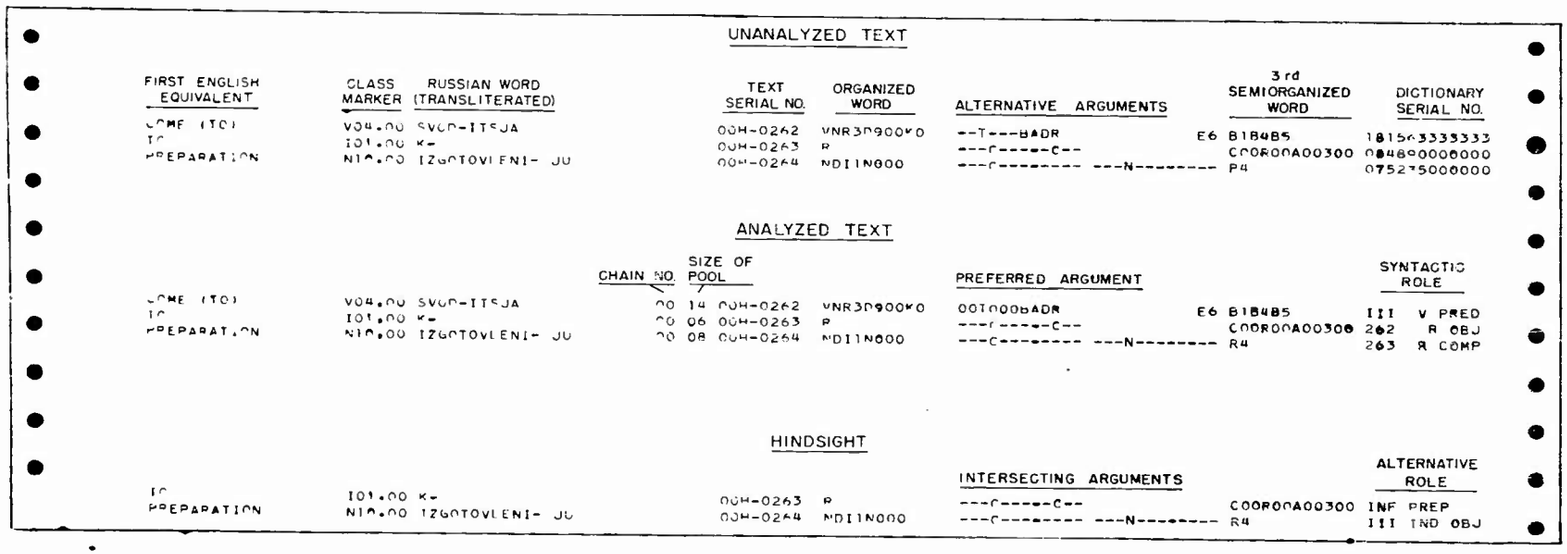
		CHAIN NO.	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE
ONE HUNDRED	D01.00 ST-O	20	18	$ -0196	DA RACJPPKKC	N-----N-----	A-----A-----	000000060000	III SUBJCT
FORTY	D01.00 SOROK-	20	10	$ -0197	DA RACJPPKKC	N-----N-----	A-----A-----	000000060000	196 SUBJCTN
SECOND	A03.00 VTOR-OJ	20	11	$ -0198	AD00000 0	----I-------	----F-------		III L OBJ
MAN	N01.10 CHELOVEK-	21	08	$ -0199	NDA2M100	N----------	M----------		INF ARBTR
(CORR.ENTRY)	V1A.00 PRISHEL-	22	07	$ -0200	VSRK000000	SSS000AMD0		B3	INF ARBTR
A	I01.00 -V	22	03	$ -0201	P	--A--P--A--P		PA0R00AB0650	INF PREP
TWO	D01.00 DV-A	22	06	$ -0202	DA RPCJPPKK	--A-----A---	--P-----P---	0R0000ZV0000	201 R COMP
HOUR	N01.00 CHAS-A	22	10	$ -0203	ND11M300	-G----------	-M----------		202 R COMPN
..	..	22	10	$ -0204	.				END OF SENT.

HINDSIGHT

				INTERSECTING ARGUMENTS			ALTERNATIVE ROLE
ONE HUNDRED	D01.00 ST-O	$ -0196	DA RACJPPKKC	N-A---N-A---	A-A---A-A---	000000060000	INF NUMERAL
ONE HUNDRED	D01.00 ST-O	$ -0196	DN RACJPPKKC	N-A---N-A---	A-A---A-A---	000000060000	INF NUMERAL
ONE HUNDRED	D01.00 ST-O	$ -0196	DN RACJPPKKC	N-----N-----	A-----A-----	000000060000	III SUBJCT
ONE HUNDRED	D01.00 ST-O	$ -0196	DA RACJPPKKC	--A-----A---	--A-----A---	000000060000	III L OBJ
ONE HUNDRED	D01.00 ST-O	$ -0196	DN RACJPPKKC	--A-----A---	--A-----A---	000000060000	III L OBJ
FORTY	D01.00 SOROK-	$ -0197	DN RACJPPKKC	N-----N-----	A-----A-----	000000060000	196 SUBJCTN
FORTY	D01.00 SOROK-	$ -0197	DA RACJPPKKC	N-A---N-A---	A-A---A-A---	000000060000	INF NUMERAL
FORTY	D01.00 SOROK-	$ -0197	DN RACJPPKKC	N-A---N-A---	A-A---A-A---	000000060000	INF NUMERAL
FORTY	D01.00 SOROK-	$ -0197	DA RACJPPKKC	--A-----A---	--A-----A---	000000060000	III L OBJ
FORTY	D01.00 SOROK-	$ -0197	DN RACJPPKKC	--A-----A---	--A-----A---	000000060000	III L OBJ
PREDICTION WIPER	---- 19721200?X15 000000060000 196 SUBJCTN						
SECOND	A03.00 VTOR-OJ	$ -0198	AD00000 0	--A---------	--M---------		III L OBJ
SECOND	A03.00 VTOR-OJ	$ -0198	AD00000 0	----F-------	---F--------		III IND OBJ
PREDICTION WIPER	---- 19801?000531 0000010000000 0000F0?00000 III L OBJ						
PREDICTION WIPER	---- ?III?200?X01 N0?000N00000 AIII?0?00000						
MAN	N01.10 CHELOVEK-	$ -0199	NDA2M100	N----------	M----------		INF ARBTR
(CORR.ENTRY)	V1A.00 PRISHEL-	$ -0200	VSRK000000	SSS000AMD0		B3	INF ARBTR
TWO	D01.00 DV-A	$ -0202	DN RPCJPPKK	--A-----A---	--P-----B---	0R0000ZV0000	201 R COMP
..	..	$ -0204	.				END OF SENT.

A Chain Numeral

Figure 20



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
COME (TO)	V04.00	SYOD-ITSJA	00H-0262	VNR3D900K0	--T---BADR	E6	B1B4B5	1815<3333333
IC	I01.00	K-	00H-0263	P	---C-----C--		C00R00A00300	0848900000000
PREPARATION	N10.00	IZGOTOVLENI- JU	00H-0264	NDI1N000	---C--------- ---N---------		P4	0752?5000000

ANALYZED TEXT

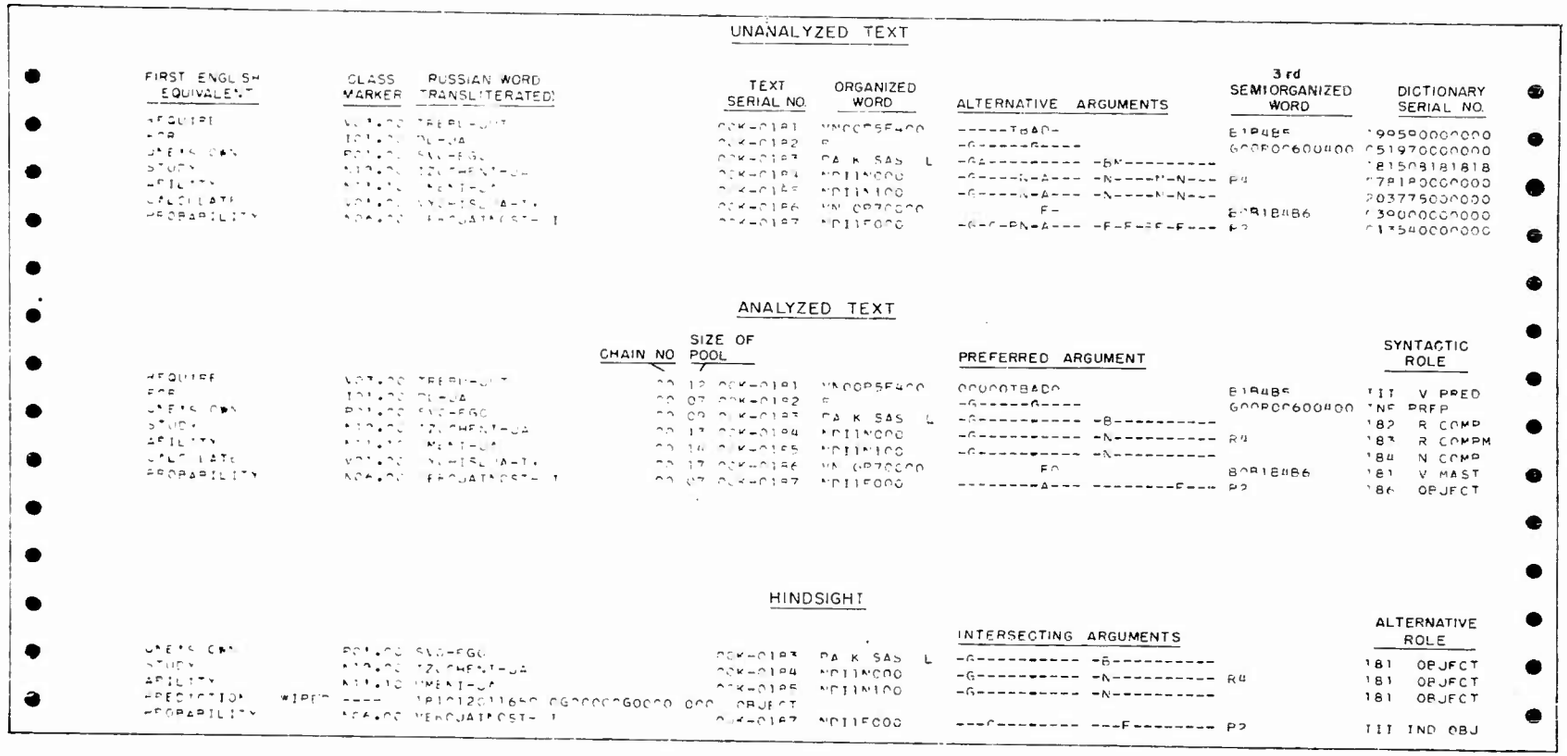
		CHAIN NO.	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE
COME (TO)	V04.00	00	14	00H-0262	VNR3D900K0	001000bADR	E6	B1B4B5	III V PRED
IC	I01.00	00	06	00H-0263	P	---C-----C--		C00R00A00300	262 P OBJ
PREPARATION	N10.00	IZGOTOVLENI- JU	00	08	00H-0264	NDI1N000	---C--------- ---N---------	R4	263 R COMP

HINDSIGHT

				INTERSECTING ARGUMENTS			ALTERNATIVE ROLE
IC	I01.00	K-	00H-0263	P	---C-----C--	C00R00A00300	INF PREP
PREPARATION	N10.00	IZGOTOVLENI- JU	00H-0264	NDI1N000	---C--------- ---N---------	R4	III IND OBJ

A Verb Phrase with a Preposition Object

Figure 21



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD TRANSLITERATED	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
REQUIRE	V[illegible]	TREBI[illegible]	00K-0181	VNOOP5E400	-----TBAD-	E1R4B5	199500000000
FOR	IOI.00	DLYA	00K-0182	F	-G-----G-----	600R0C600#00	051970000000
[illegible]	P01.00	SVYAZ	00K-0183	PA K SAS L	-GA---------- -BK----------		181508181818
STUDY	N19.00	ISSLEDOVANIE	00K-0184	NDIINCOO	-G-----N-A---- -N-----N-N---	R4	078100000000
ABILITY	N11.00	SPOSOBNOST	00K-0185	NDIIN100	-G-----N-A---- -N-----N-N---		203775000000
CALCULATE	V01.00	VYCHISLYAT	00K-0186	VN 0870000	F-	80R18#B6	139000000000
PROBABILITY	N04.00	VEROYATNOST	00K-0187	NDIIF000	-G-C-PA-A---- -F-F-FF-F---	P3	013540000000

ANALYZED TEXT

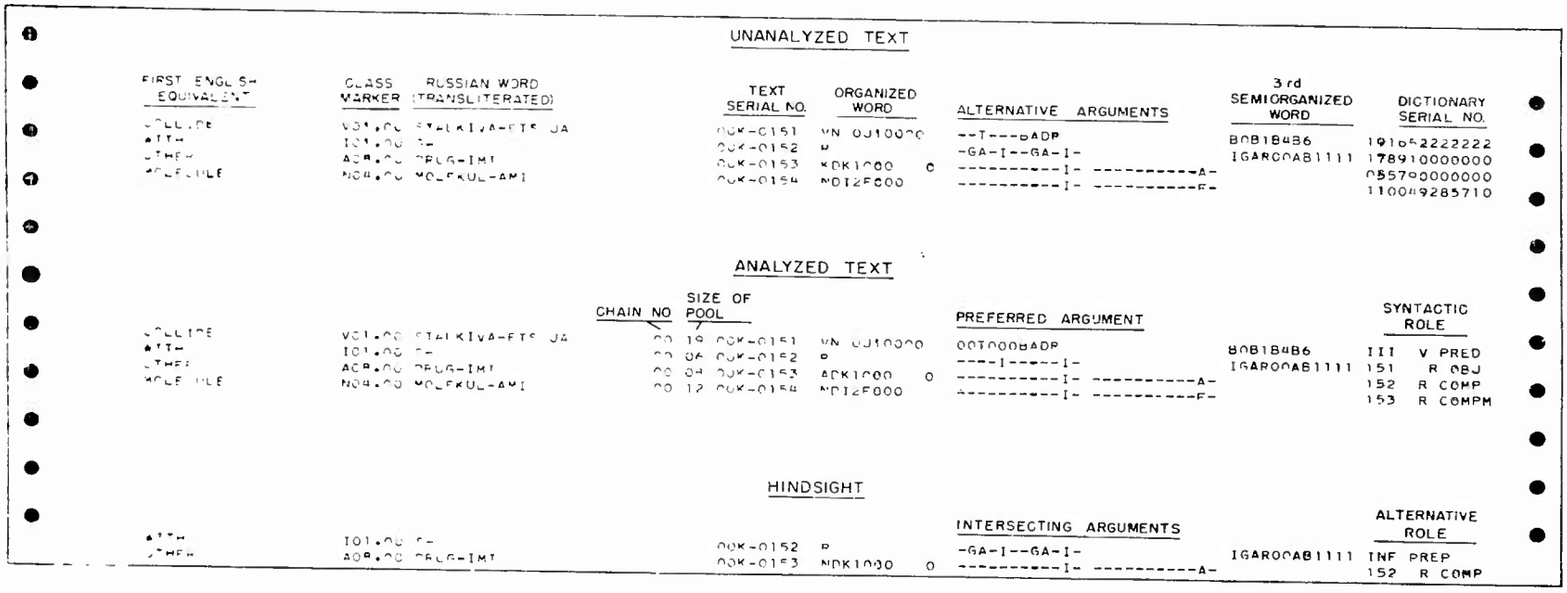
CHAIN NO	SIZE OF POOL		PREFERRED ARGUMENT			SYNTACTIC ROLE
REQUIRE	12	00K-0181	VNOOP5E400	00000TBAD0	E1R4B5	111 V PRED
FOR	07	00K-0182	F	-G-----G-----	600R0C600#00	1NF PREP
[illegible]	09	00K-0183	PA K SAS L	-G---------- -B----------		182 R COMP
STUDY	13	00K-0184	NDIINCOO	-G---------- -N----------	R4	183 R COMPM
ABILITY	14	00K-0185	NDIIN100	-G---------- -N----------		184 N COMP
CALCULATE	17	00K-0186	VN 0870000	F0	80R18#B6	181 V MAST
PROBABILITY	07	00K-0187	NDIIF000	--------A---- --------F---	P3	186 OBJECT

HINDSIGHT

				INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
[illegible]	P01.00	SVYAZ	00K-0183	PA K SAS L	-G---------- -B----------		181 OBJECT
STUDY	N19.00	ISSLEDOVANIE	00K-0184	NDIINCOO	-G---------- -N----------	R4	181 OBJECT
ABILITY	N11.00	SPOSOBNOST	00K-0185	NDIIN100	-G---------- -N----------		181 OBJECT
PREDICTION WIPER	----	1P1012011650	0000000G0000 000	OBJECT			
PROBABILITY	N04.00	VEROYATNOST	00K-0187	NDIIF000	---C--------- ---F---------	P3	111 IND OBJ

Two Verb Phrases

Figure 22



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
COLLIDE	V01.00	STALKIVA-ETS JA	00K-0151	VN 0J10000		--T---BADP	B0B1B4B6	1916522222222
WITH	I01.00	S-	00K-0152	P		-GA-I--GA-I-	IGAR00AB1111	178910000000
OTHER	ADR.00	DRUG-IMI	00K-0153	NDK1000	0	----------I- ----------A-		085790000000
MOLECULE	N04.00	MOLEKUL-AMI	00K-0154	NDI2F000		----------I- ----------F-		110049285710

ANALYZED TEXT

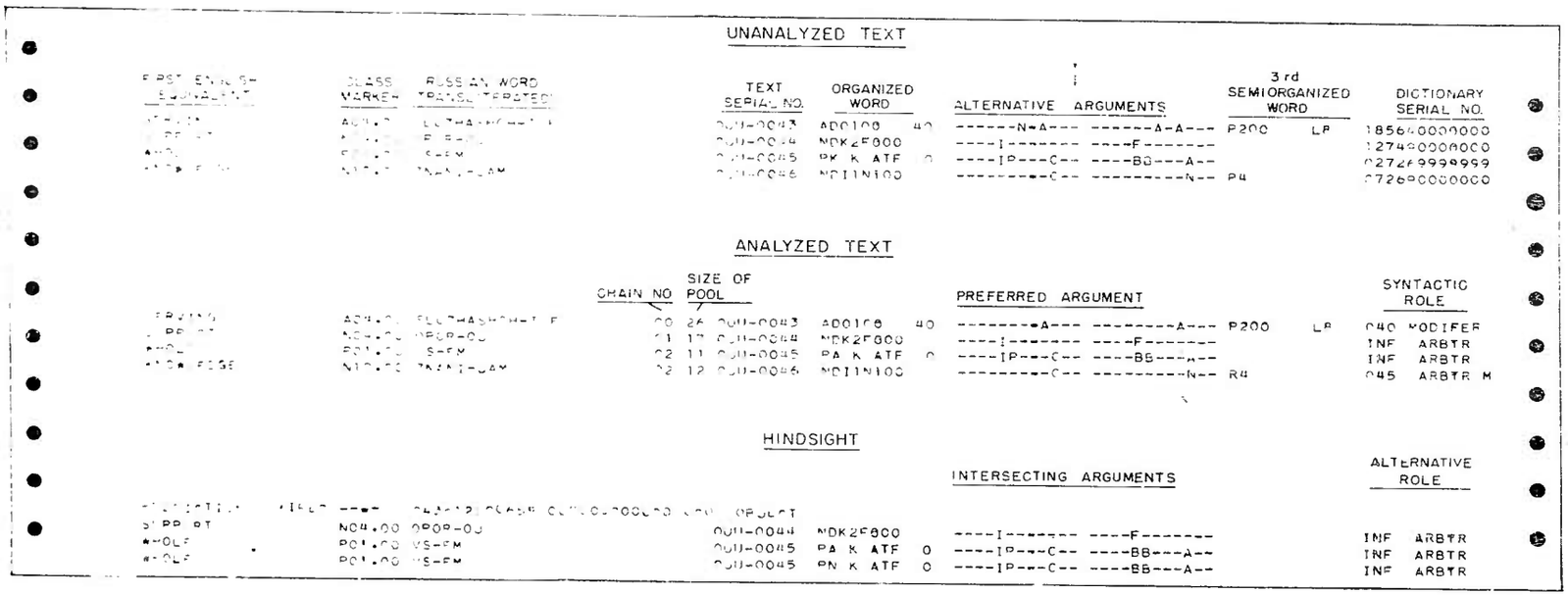
		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
COLLIDE	V01.00 STALKIVA-ETS JA	00	19	00K-0151	VN 0J10000	00T000BADP	B0B1B4B6	III V PRED
WITH	I01.00 S-	00	0A	00K-0152	P	----I------I-	IGAR00AB1111	151 R OBJ
OTHER	ADR.00 DRUG-IMI	00	0A	00K-0153	NDK1000	0 ----------I- ----------A-		152 R COMP
MOLECULE	N04.00 MOLEKUL-AMI	00	12	00K-0154	NDI2F000	----------I- ----------F-		153 R COMPM

HINDSIGHT

						INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
WITH	I01.00 S-			00K-0152	P	-GA-I--GA-I-	IGAR00AB1111	INF PREP
OTHER	ADR.00 DRUG-IMI			00K-0153	NDK1000	0 ----------I- ----------A-		152 R COMP

A Verb Phrase with a Preposition Object

Figure 23



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD TRANSLITERATED	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD		DICTIONARY SERIAL NO.
[illegible]	[illegible]	[illegible]	0001-0043	AD0108	40	------N-A---	-------A-A---	P200	LR	185640000000
[illegible]	[illegible]	[illegible]	0001-0044	MDK2F800		----I--------	----F--------			127490000000
[illegible]	[illegible]	[illegible]	0001-0045	PA K ATF	0	----IP---C--	----BB---A--			0274F9999999
[illegible]	[illegible]	[illegible]	0001-0046	MD11N100		---------C--	----------N--	P4		0726P0000000

ANALYZED TEXT

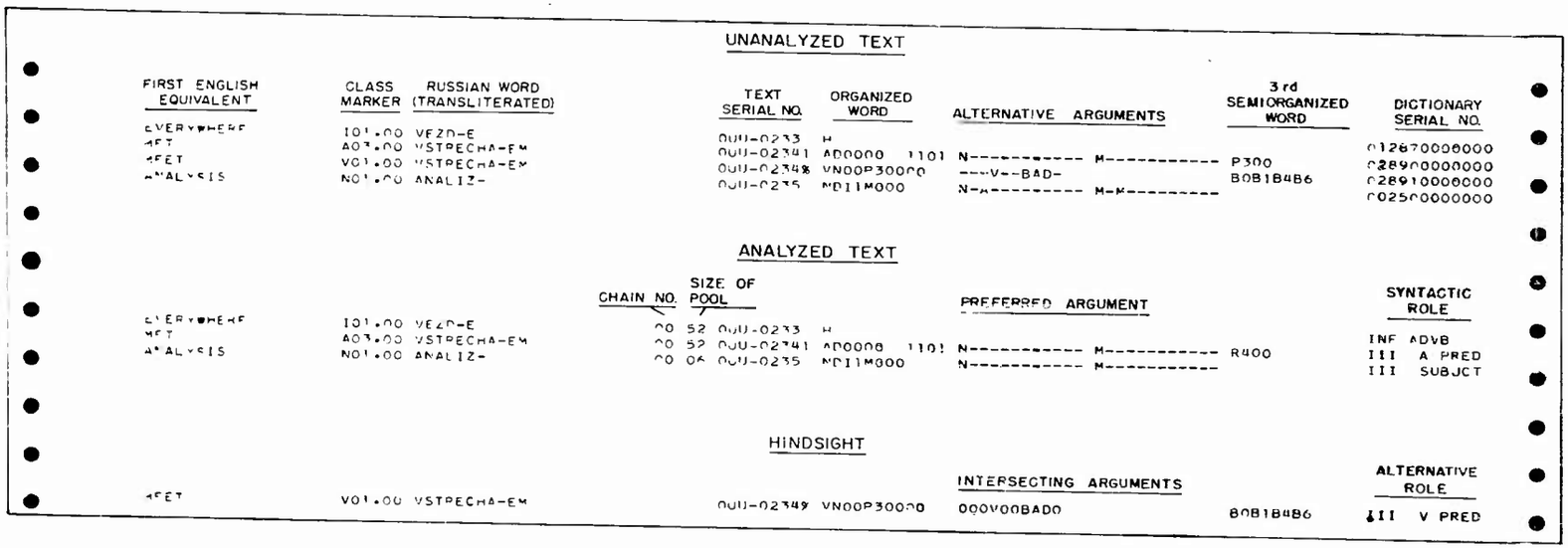
FIRST ENGLISH EQUIVALENT	CLASS MARKER	CHAIN NO	SIZE OF POOL	TEXT SERIAL NO.	ORGANIZED WORD		PREFERRED ARGUMENT		3rd SEMIORGANIZED WORD		SYNTACTIC ROLE
FRYING	AD4.00	00	26	0001-0043	AD0108	40	--------A---	--------A---	P200	LR	040 MODIFER
[illegible]	NC4.00	01	17	0001-0044	MDK2F800		----I--------	----F--------			INF ARBTR
*WOLF	P01.00	02	11	0001-0045	PA K ATF	0	----IP---C--	----BB---A--			INF ARBTR
*WOLF EDGE	N10.00	02	12	0001-0046	MD11N100		---------C--	----------N--	R4		045 ARBTR M

HINDSIGHT

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
SLIPPERY	NC4.00	OPOP-OJ	0001-0044	MDK2F800		----I--------	----F--------	INF ARBTR
*WOLF	P01.00	WS-FM	0001-0045	PA K ATF	0	----IP---C--	----BB---A--	INF ARBTR
*WOLF	P01.00	WS-FM	0001-0045	PN K ATF	0	----IP---C--	----BB---A--	INF ARBTR

An Analysis with a Missing Government Code

Figure 24



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
EVERYWHERE	I01.00	VEZD-E	000-0233	H			012670000000
MET	A03.00	VSTRECHA-EM	000-02341	AD0000 1101	N---------- M----------	P300	028900000000
MEET	V01.00	VSTRECHA-EM	000-02348	VN00P30000	---V--BAD-	B0B1B4B6	028910000000
ANALYSIS	N01.00	ANALIZ-	000-0235	ND11M000	N-A---------- M-M----------		025000000000

ANALYZED TEXT

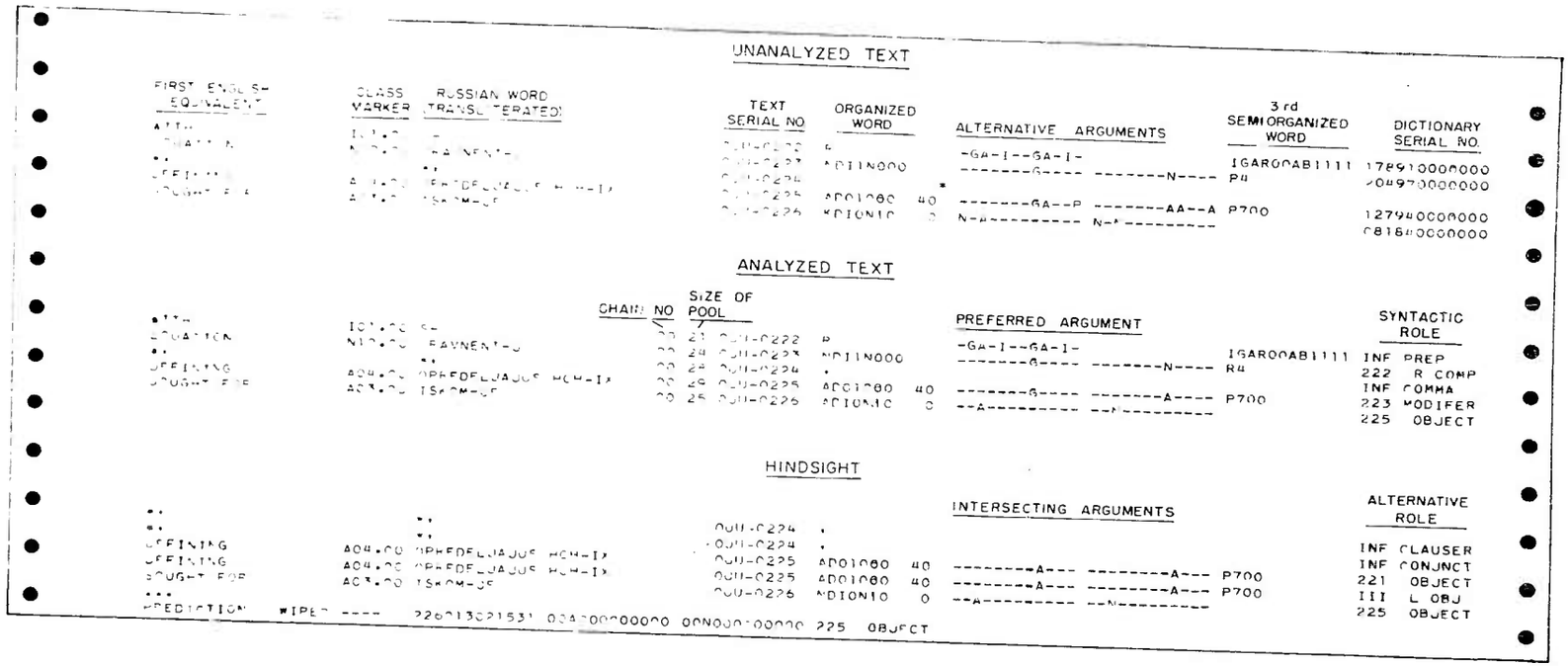
		CHAIN NO.	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE
EVERYWHERE	I01.00 VEZD-E	00	52	000-0233	H				INF ADVB
MET	A03.00 VSTRECHA-EM	00	52	000-02341	AD0000 1101	N----------	M----------	R400	III A PRED
ANALYSIS	N01.00 ANALIZ-	00	06	000-0235	ND11M000	N----------	M----------		III SUBJCT

HINDSIGHT

				INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
MEET	V01.00 VSTRECHA-EM	000-02349	VN00P30000	000V00BAD0	B0B1B4B6	III V PRED

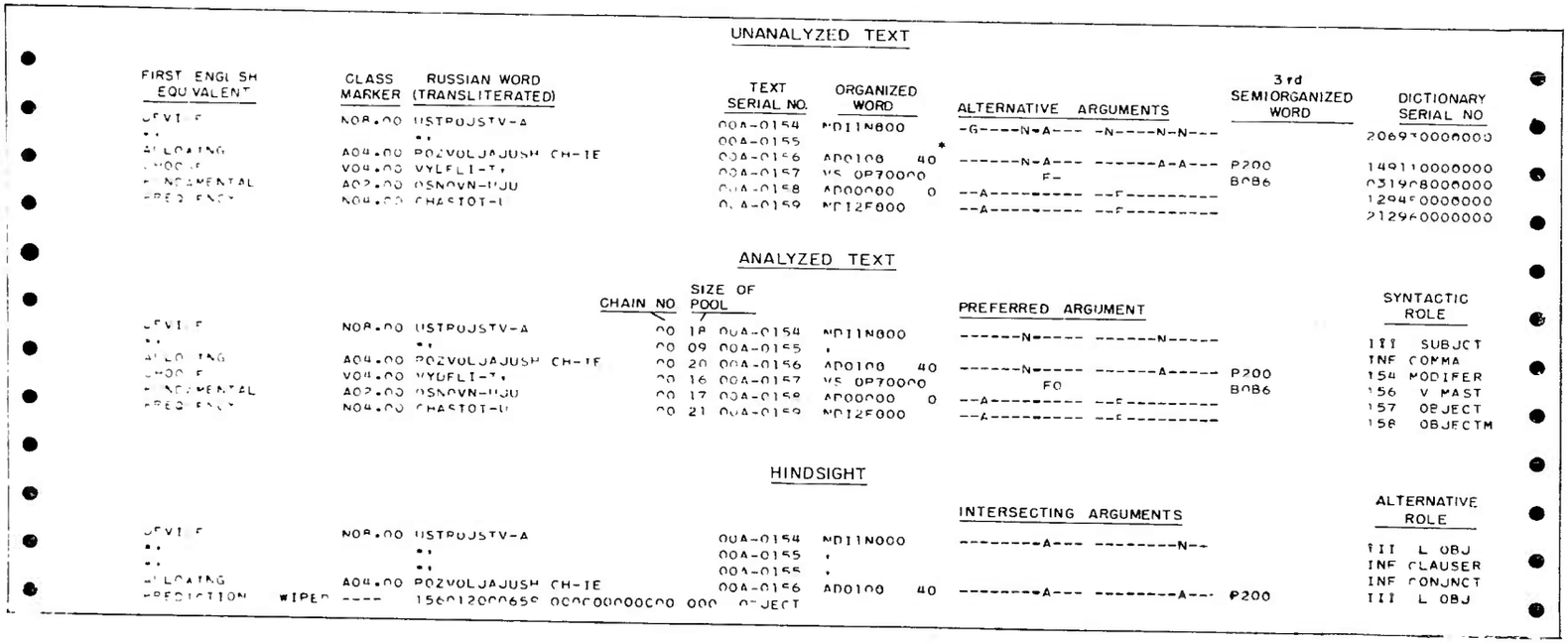
The Analysis of a Short-form Adjective-verb Homograph

Figure 25



An Object of a Participle

Figure 26



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO
DEVICE	NOR.00	USTROJSTV-A	00A-0154	MD11N800	-G----N-A--- -N----N-N---		20693000000
,,		,,	00A-0155				
ALLOTING	A04.00	ROZVOLJAJUSH CH-IE	00A-0156	AD0100 40 *	------N-A--- ------A-A---	P200	14911000000
CHOOSE	V04.00	VYBELI-T,	00A-0157	VS 0P70000	F-	B0B6	03190B000000
FUNDAMENTAL	A02.00	OSNOVN-UJU	00A-0158	AD00000 0	--A--------- --F---------		12945000000
FREQUENCY	N04.00	CHASTOT-U	00A-0159	MD12F800	--A--------- --F---------		21296000000

ANALYZED TEXT

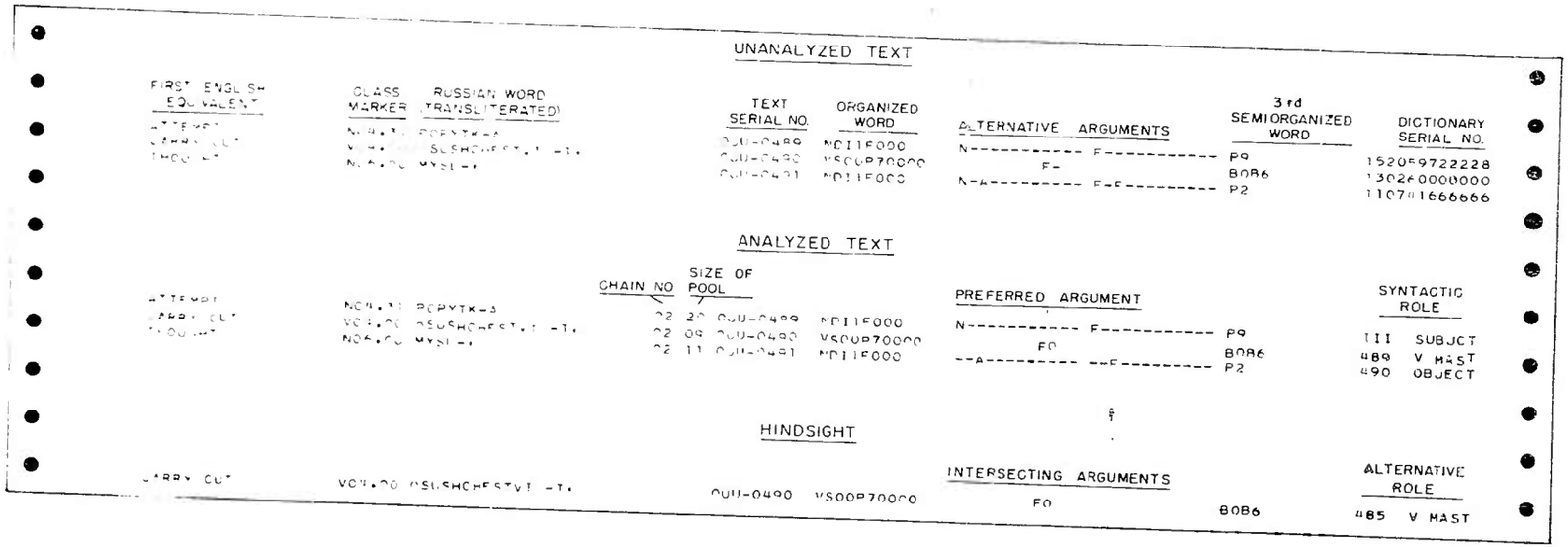
		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
DEVICE	NOR.00 USTROJSTV-A	00	18	00A-0154	MD11N800	------N----- ------N-----		111 SUBJCT
,,	,,	00	09	00A-0155	,			INF COMMA
ALLOTING	A04.00 ROZVOLJAJUSH CH-IE	00	20	00A-0156	AD0100 40	------N----- ------A-----	P200	154 MODIFER
CHOOSE	V04.00 VYBELI-T,	00	16	00A-0157	VS 0P70000	F0	B0B6	156 V MAST
FUNDAMENTAL	A02.00 OSNOVN-UJU	00	17	00A-0158	AD00000 0	--A--------- --F---------		157 OBJECT
FREQUENCY	N04.00 CHASTOT-U	00	21	00A-0159	MD12F000	--A--------- --F---------		158 OBJECTM

HINDSIGHT

				INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
DEVICE	NOR.00 USTROJSTV-A	00A-0154	MD11N000	--------A--- --------N--		
,,	,,	00A-0155	,			111 L OBJ
,,	,,	00A-0155	,			INF CLAUSER
ALLOTING	A04.00 ROZVOLJAJUSH CH-IE	00A-0156	AD0100 40	--------A--- --------A---	P200	INF CONJNCT
PREDICTION WIPED	---- 156012000659	00C00000C00	000 OBJECT			111 L OBJ

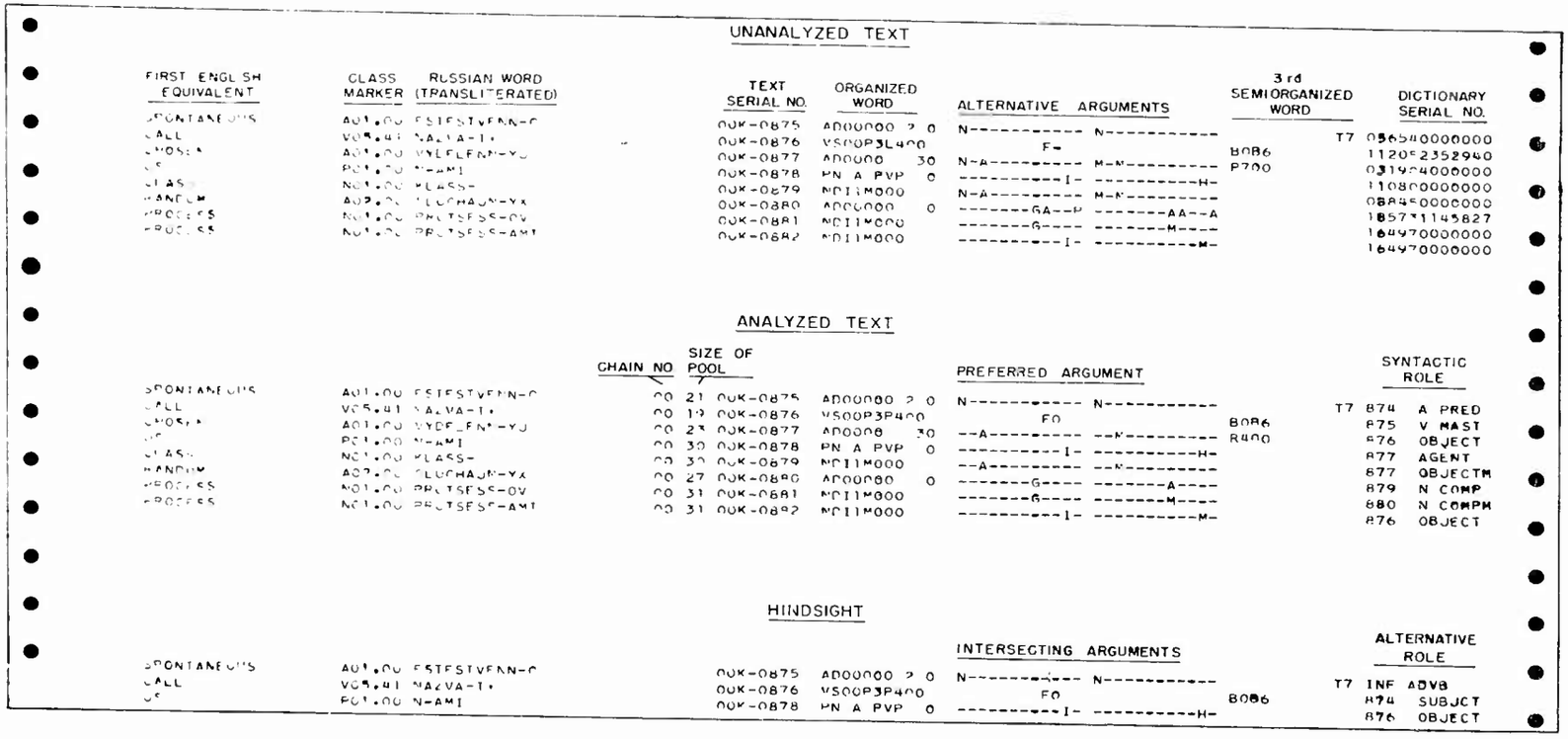
A Verb Master of a Participle

Figure 27



A Verb Master of a Noun

Figure 28



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
SPONTANEOUS	A01.00	ESTESTVENN-O	00K-0875	AD00000 2 0	N---------- N----------		T7 0565400000000
CALL	V05.01	NAZVA-T'	00K-0876	VS00P3L400	F-	B086	1120?2352940
CHOSEN	A01.00	VYBRANN-YJ	00K-0877	AD0000 30	N-A---------- M-M----------	P700	0319?4000000
US	P01.00	N-AMI	00K-0878	PN A PVP 0	----------I- ----------H-		1108?0000000
CLASS	N01.00	KLASS-	00K-0879	ND11M000	N-A---------- M-M----------		0884?0000000
RANDOM	A02.00	SLUCHAJN-YX	00K-0880	AD00000 0	--------GA--P -------AA--A		1857?1145827
PROCESS	N01.00	PROTSESS-OV	00K-0881	ND11M000	-------G---- -------M----		1649?0000000
PROCESS	N01.00	PROTSESS-AMI	00K-0882	ND11M000	----------I- ----------M-		1649?0000000

ANALYZED TEXT

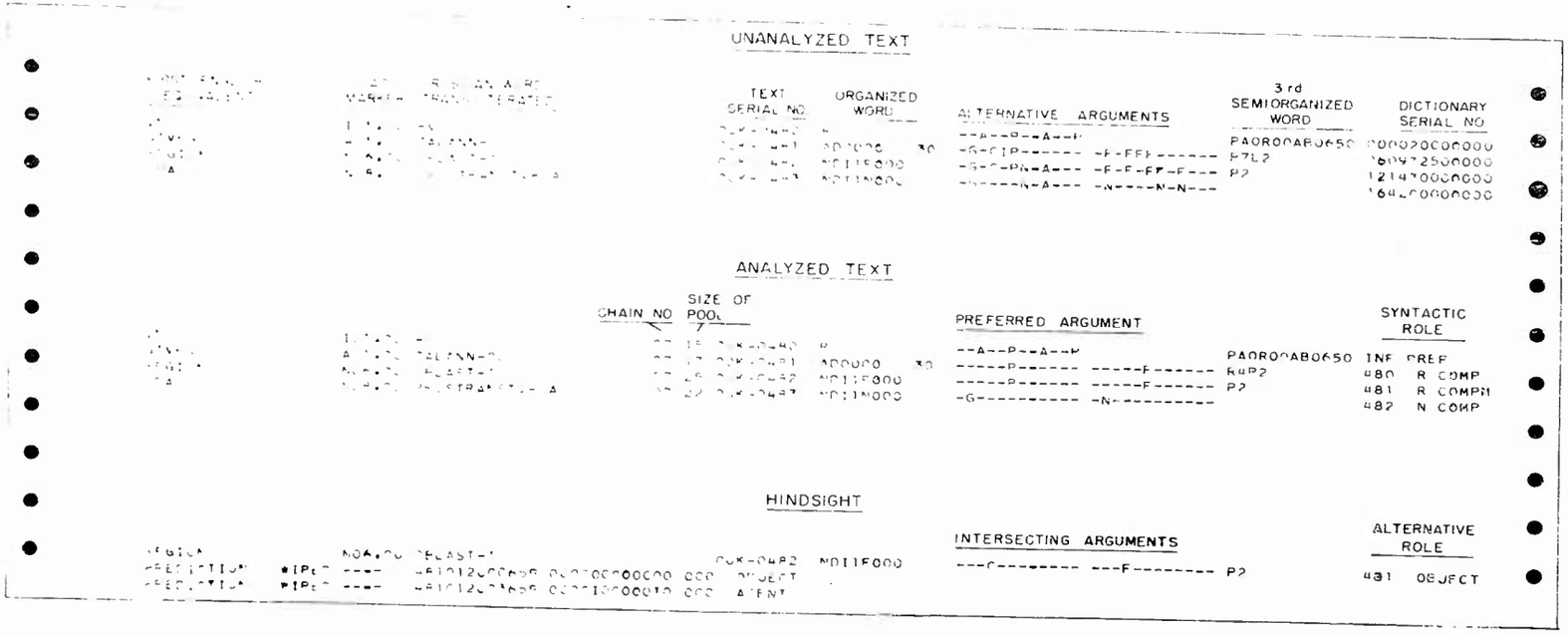
		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
SPONTANEOUS	A01.00 ESTESTVENN-O	00	21	00K-0875	AD00000 2 0	N---------- N----------		T7 874 A PRED
CALL	V05.01 NAZVA-T'	00	19	00K-0876	VS00P3P400	F0	B086	875 V MAST
CHOSEN	A01.00 VYBRANN-YJ	00	23	00K-0877	AD0000 30	--A---------- --M----------	R400	876 OBJECT
US	P01.00 N-AMI	00	30	00K-0878	PN A PVP 0	----------I- ----------H-		877 AGENT
CLASS	N01.00 KLASS-	00	30	00K-0879	ND11M000	--A---------- --M----------		877 OBJECTM
RANDOM	A02.00 SLUCHAJN-YX	00	27	00K-0880	AD00000 0	-------G---- -------A----		879 N COMP
PROCESS	N01.00 PROTSESS-OV	00	31	00K-0881	ND11M000	-------G---- -------M----		880 N COMPM
PROCESS	N01.00 PROTSESS-AMI	00	31	00K-0882	ND11M000	----------I- ----------M-		876 OBJECT

HINDSIGHT

				INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
SPONTANEOUS	A01.00 ESTESTVENN-O	00K-0875	AD00000 2 0	N---------- N----------		T7 INF ADVB
CALL	V05.01 NAZVA-T'	00K-0876	VS00P3P400	F0	B086	874 SUBJCT
US	P01.00 N-AMI	00K-0878	PN A PVP 0	----------I- ----------H-		876 OBJECT

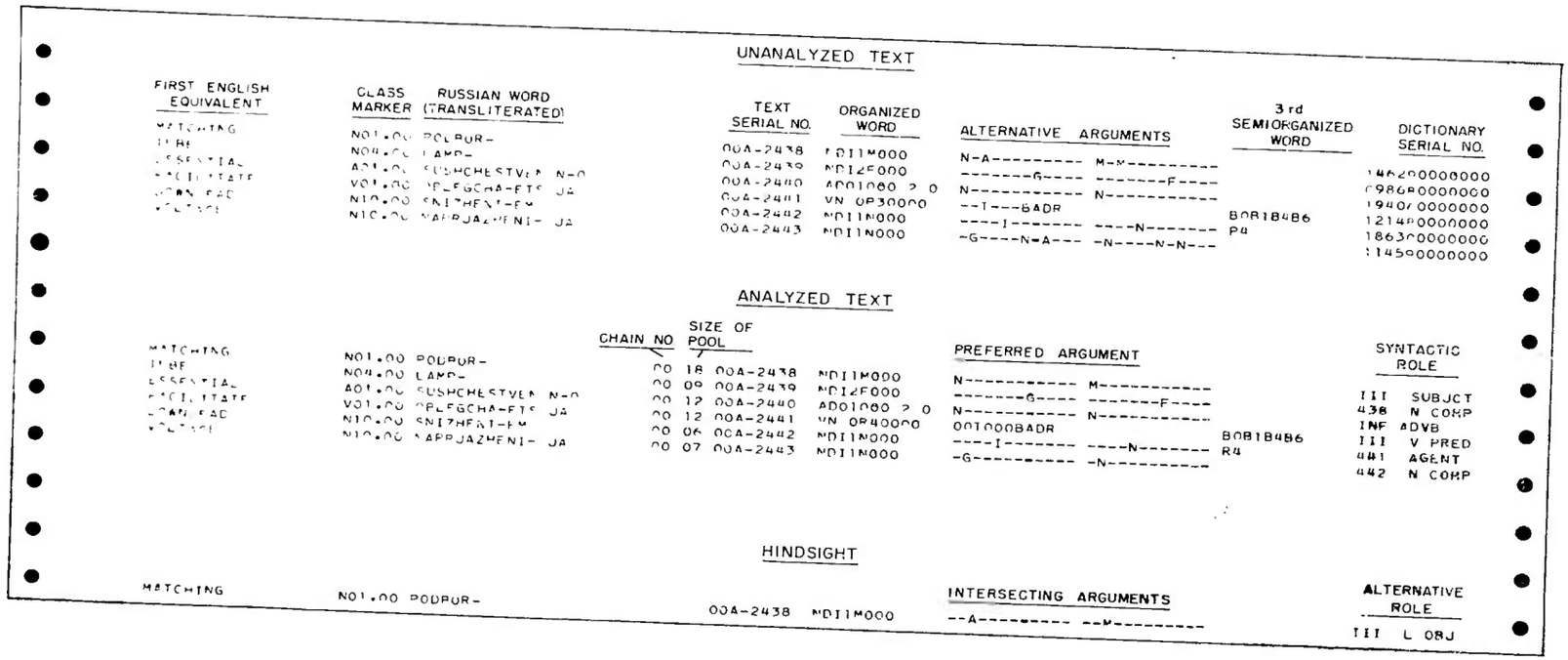
A Participle Used "Adjectivally"

Figure 29



An Object Overridden by a Master

Figure 30



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
MATCHING	N01.00	PODBOR-	00A-2438	MD11M000	N-A---------- M-M----------		1462000000000
LAMP	N04.00	LAMP-	00A-2439	MD12E000	--------G----- --------F-----		0986000000000
ESSENTIAL	A01.00	SUSHCHESTVEN N-0	00A-2440	AD01000 2 0	N---------- N----------		1940700000000
FACILITATE	V01.00	OBLEGCHA-ETS JA	00A-2441	VN 0P30000	--I---BADR	B0B1B4B6	1214000000000
HUMAN BAD	N10.00	SNIZHENI-EM	00A-2442	MD11N000	----I-------- ----N-------	P4	1863000000000
VOLTAGE	N10.00	NAPRJAZHENI- JA	00A-2443	MD11N000	-G----N-A--- -N----N-N---		1145900000000

ANALYZED TEXT

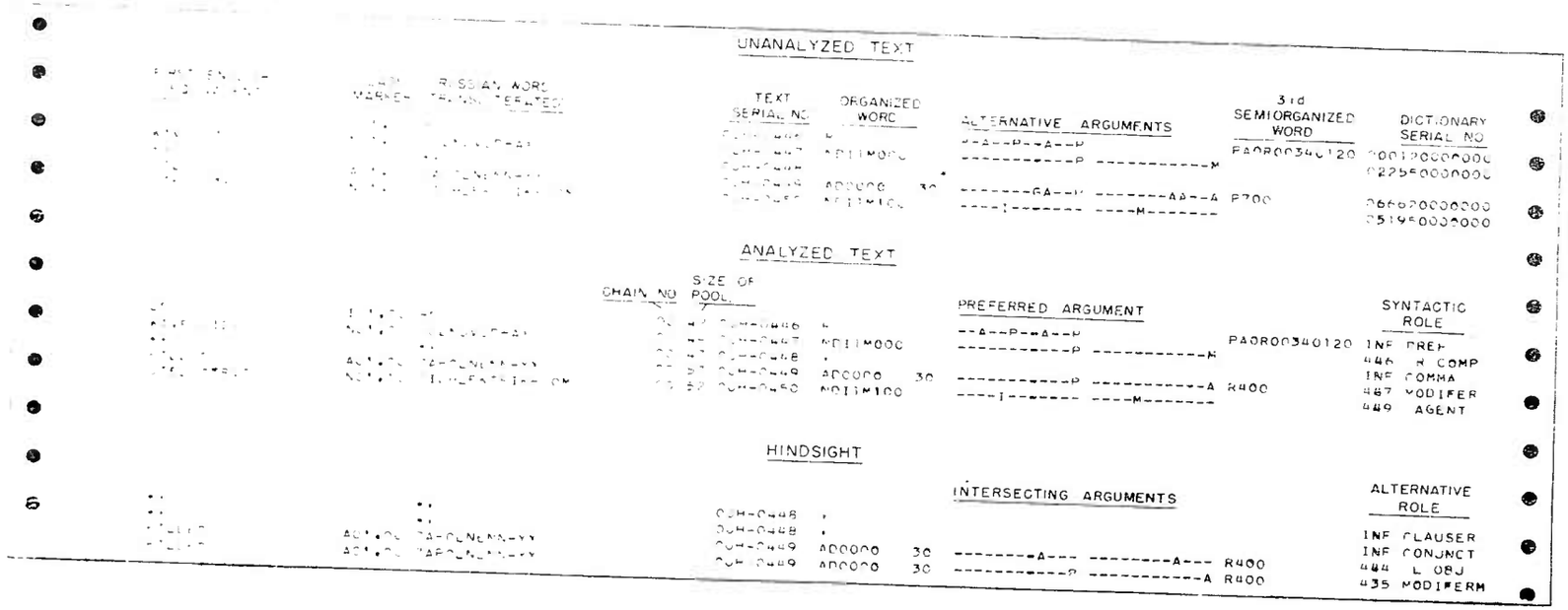
MATCHING	N01.00 PODBOR-	CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE
LAMP	N04.00 LAMP-	00	18	00A-2438	MD11M000	N---------- M----------			III SUBJCT
ESSENTIAL	A01.00 SUSHCHESTVEN N-0	00	09	00A-2439	MD12E000	--------G----- --------F-----			438 N CORP
FACILITATE	V01.00 OBLEGCHA-ETS JA	00	12	00A-2440	AD01000 2 0	N---------- N----------			INF ADVB
HUMAN BAD	N10.00 SNIZHENI-EM	00	12	00A-2441	VN 0P40000	001000BADR			III V PRED
VOLTAGE	N10.00 NAPRJAZHENI- JA	00	06	00A-2442	MD11N000	----I-------- ----N-------	B0B1B4B6		441 AGENT
		00	07	00A-2443	MD11N000	-G---------- -N----------	R4		442 N CORP

HINDSIGHT

					INTERSECTING ARGUMENTS	ALTERNATIVE ROLE
MATCHING	N01.00 PODBOR-	00A-2438	MD11M000		--A---------- --M----------	III L OBJ

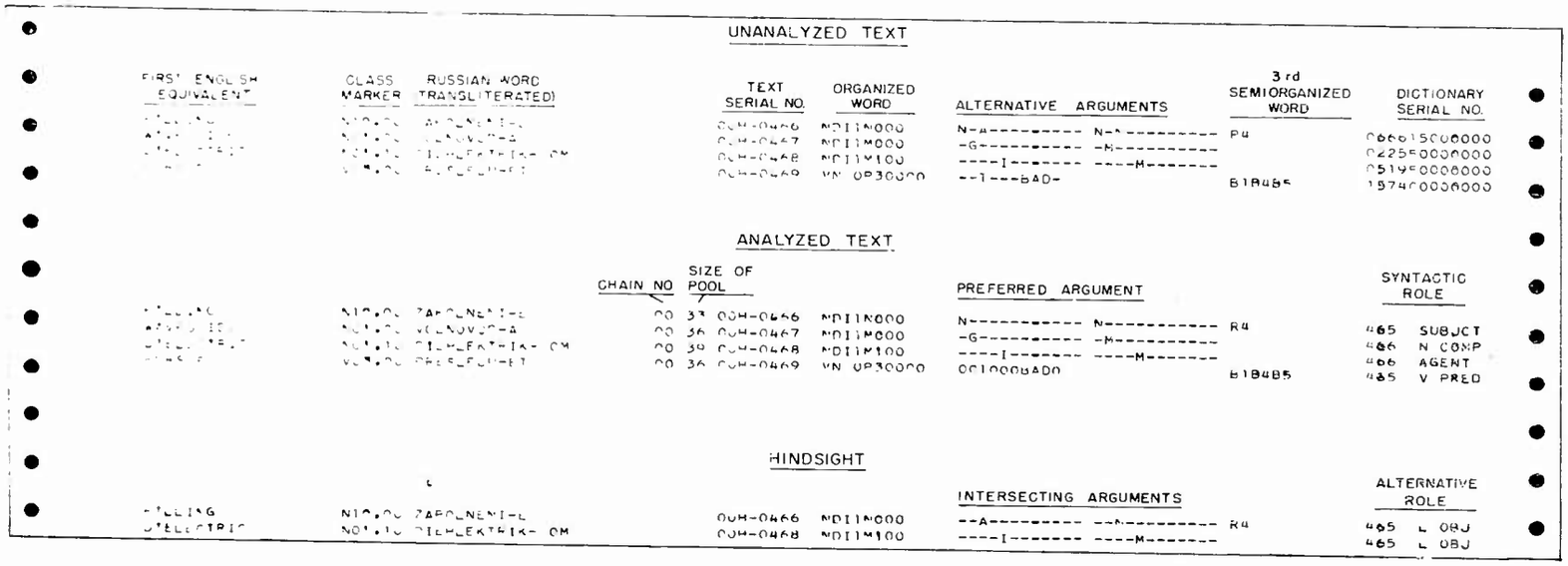
An Agent of a Verb

Figure 31



An Agent of a Participle

Figure 32



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
[illegible]	[illegible]	[illegible]	00H-0466	MDIIN000	N-A---------- N-A----------	P4	0666150000000
[illegible]	[illegible]	[illegible]	00H-0467	MDIIM000	-G---------- -M----------		0425500000000
[illegible]	[illegible]	[illegible]	00H-0468	MDIIM100	----I------- ----M-------		0519500000000
[illegible]	[illegible]	[illegible]	00H-0469	VN 0P30000	--I---BAD-	B1B4B5	1974000000000

ANALYZED TEXT

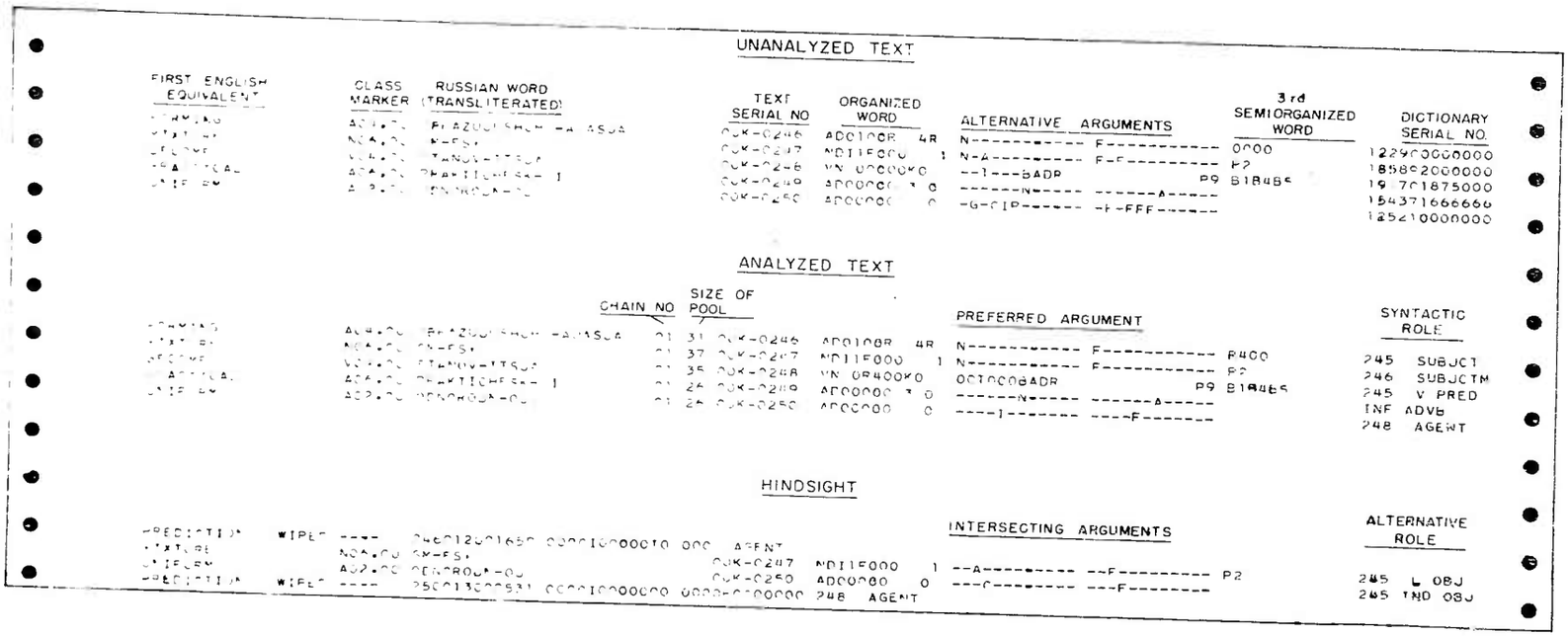
		CHAIN NO	SIZE OF POOL		PREFERRED ARGUMENT		SYNTACTIC ROLE
[illegible]	[illegible]	00	37	00H-0466 MDIIN000	N---------- N----------	R4	465 SUBJCT
[illegible]	[illegible]	00	36	00H-0467 MDIIM000	-G---------- -M----------		466 N COMP
[illegible]	[illegible]	00	39	00H-0468 MDIIM100	----I------- ----M-------		466 AGENT
[illegible]	[illegible]	00	36	00H-0469 VN 0P30000	0010006AD0	B1B4B5	485 V PRED

HINDSIGHT

				INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
[illegible]	[illegible]	00H-0466	MDIIN000	--A---------- --N----------	R4	465 L OBJ
[illegible]	[illegible]	00H-0468	MDIIM100	----I------- ----M-------		465 L OBJ

An Agent of a Noun

Figure 33



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
[illegible]	ADA,PO	[illegible]	00K-0246	ADD100R 4R	N---------- F----------	0000	122900000000
[illegible]	NOA,PO	[illegible]	00K-0247	NDIIF000 1	N-A-------- F-F--------	P2	185892000000
[illegible]	VOA,PO	[illegible]	00K-0248	VN 0R400K0	--1---BADR P9	B18485	19 701875000
[illegible]	ADA,PO	[illegible]	00K-0249	ADD000[illegible] 0	------N------ ------A------		154371666666
[illegible]	ADJ,PO	[illegible]	00K-0250	ADD0000 0	-G-GIP------ -F-FFF------		125210000000

ANALYZED TEXT

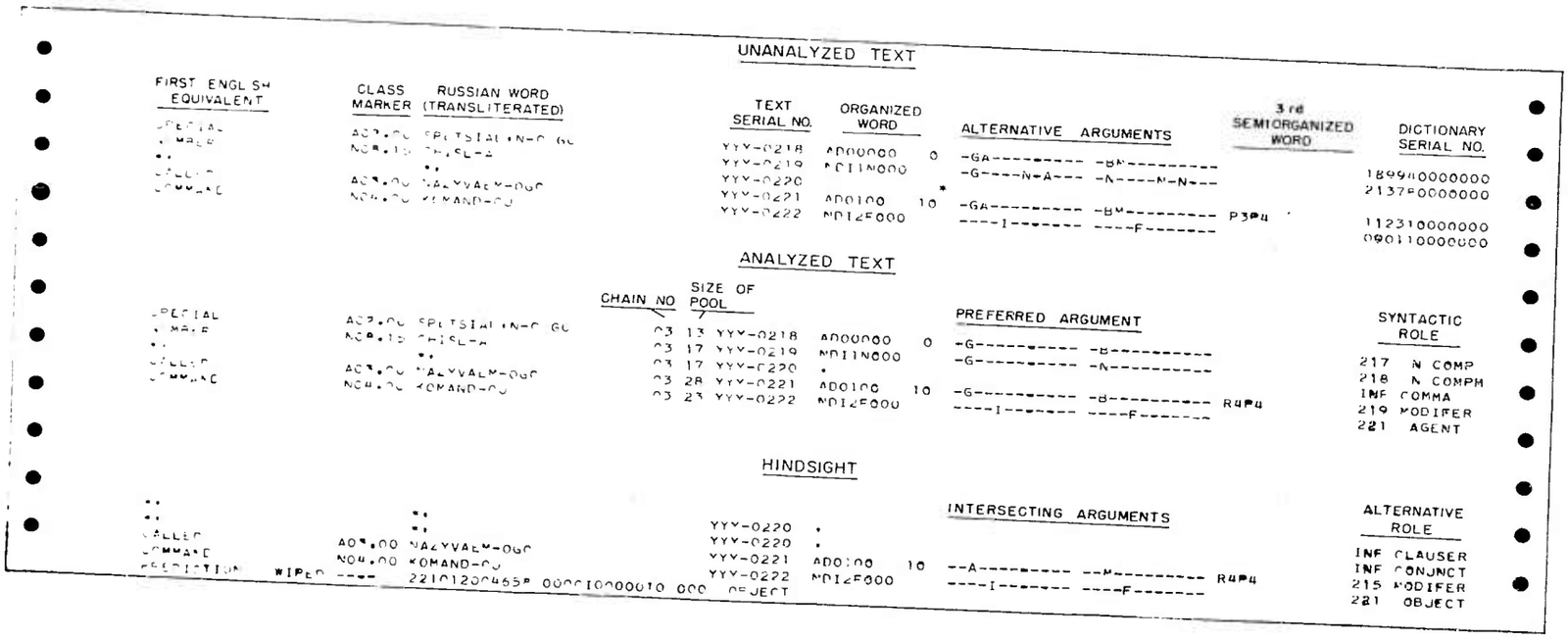
		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
[illegible]	ADA,PO [illegible]	01	31	00K-0246	ADD100R 4R	N---------- F----------	P400	245 SUBJCT
[illegible]	NOA,PO [illegible]	01	37	00K-0247	NDIIF000 1	N---------- F----------	P2	246 SUBJCTM
[illegible]	VOA,PO [illegible]	01	35	00K-0248	VN 0R400K0	001000BADR P9	B18485	245 V PRED
[illegible]	ADA,PO [illegible]	01	2A	00K-0249	ADD0000 [illegible] 0	------N------ ------A------		INF ADVB
[illegible]	ADJ,PO [illegible]	01	2A	00K-0250	ADD0000 0	----1-------- ----F-------		248 AGENT

HINDSIGHT

						INTERSECTING ARGUMENTS			ALTERNATIVE ROLE
PREDICTION	WIPE	----	246012001650	0000100000I0	000 AGENT				
[illegible]	NOA,PO	[illegible]		00K-0247	NDIIF000 1	--A-------- --F----------	P2		245 L OBJ
[illegible]	ADJ,PO	[illegible]		00K-0250	ADD0000 0	---C-------- ---F---------			245 IND OBJ
PREDICTION	WIPE	----	250013000931	0000100000I0	0000-0100000 248 AGENT				

An Analysis Not Recognizing a Copulative Verb

Figure 34



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
SPECIAL	ADJ.00	SPETSIAL'N-O GO	YYY-0218	AD00000	0	-GA---------- -BM----------		1899A0000000
A MALE	NOU.10	CHISL-A	YYY-0219	ND11N000		-G----N-A---- -N----N-N---		2137F0000000
**		**	YYY-0220					
CALLED	ADJ.00	NAZYVAEM-OGO	YYY-0221	AD0100	10	-GA---------- -BM---------- P3P4		112310000000
COMMAND	NOU.00	KOMAND-OU	YYY-0222	ND12E000		----I------- ----F-------		090110000000

ANALYZED TEXT

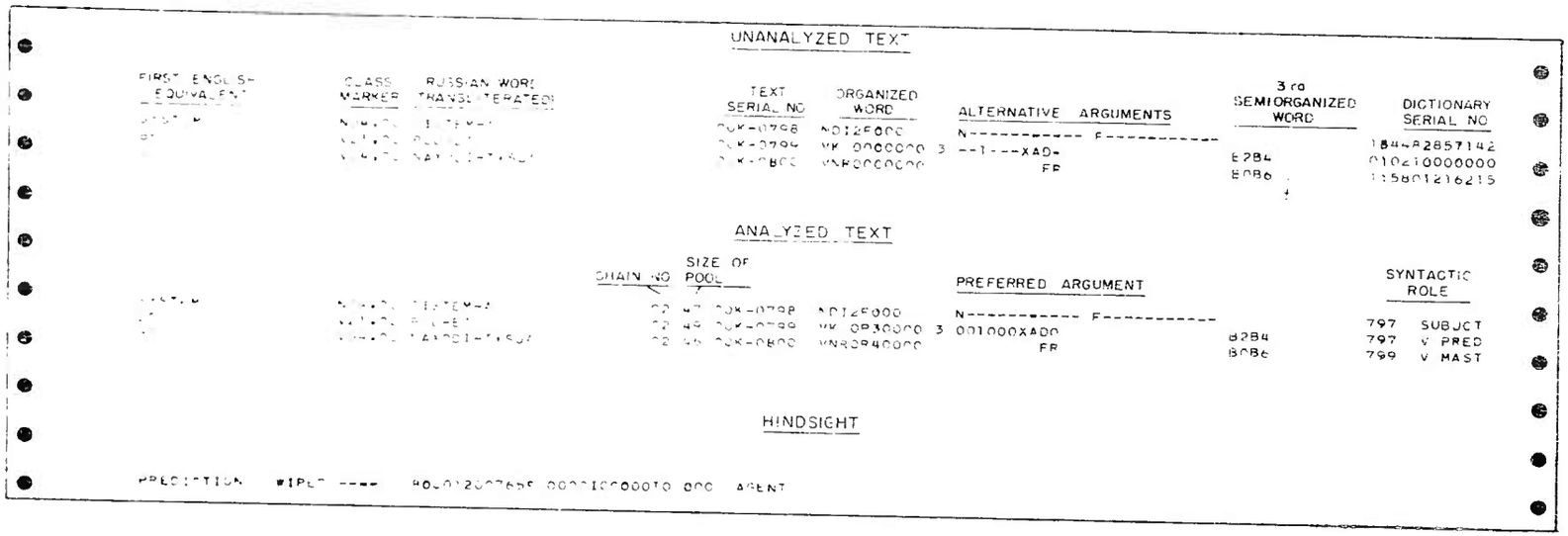
		CHAIN NO	SIZE OF POOL				PREFERRED ARGUMENT		SYNTACTIC ROLE
SPECIAL	ADJ.00 SPETSIAL'N-O GO	03	13	YYY-0218	AD00000	0	-G---------- -B----------		217 N COMP
A MALE	NOU.10 CHISL-A	03	17	YYY-0219	ND11N000		-G---------- -N----------		218 N COMPH
**	**	03	17	YYY-0220	*				INF COMMA
CALLED	ADJ.00 NAZYVAEM-OGO	03	28	YYY-0221	AD0100	10	-G---------- -B---------- R4P4		219 MODIFER
COMMAND	NOU.00 KOMAND-OU	03	23	YYY-0222	ND12E000		----I------- ----F-------		221 AGENT

HINDSIGHT

						INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
**	**		YYY-0220	*				INF CLAUSER
**	**		YYY-0220	*				INF CONJNCT
CALLED	ADJ.00 NAZYVAEM-OGO		YYY-0221	AD0100	10	--A---------- --M---------- R4P4		215 MODIFER
COMMAND	NOU.00 KOMAND-OU		YYY-0222	ND12E000		----I------- ----F-------		221 OBJECT
PREDICATION	WIPED ----	2210120046SP 0000100000010 000 OBJECT						

An Analysis with Agent-object Ambiguity

Figure 35



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD TRANSLITERATED	TEXT SERIAL NO	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO
[illegible]	[illegible]	[illegible]	00K-0798	N012F000	N---------- F----------		1844A2857142
[illegible]	[illegible]	[illegible]	00K-0799	VK 0000000 3	--I---XAD- FR	E2B4	0102100000000
[illegible]	[illegible]	[illegible]	00K-0800	VNR0000000		B0B6	1158012162I5

ANALYZED TEXT

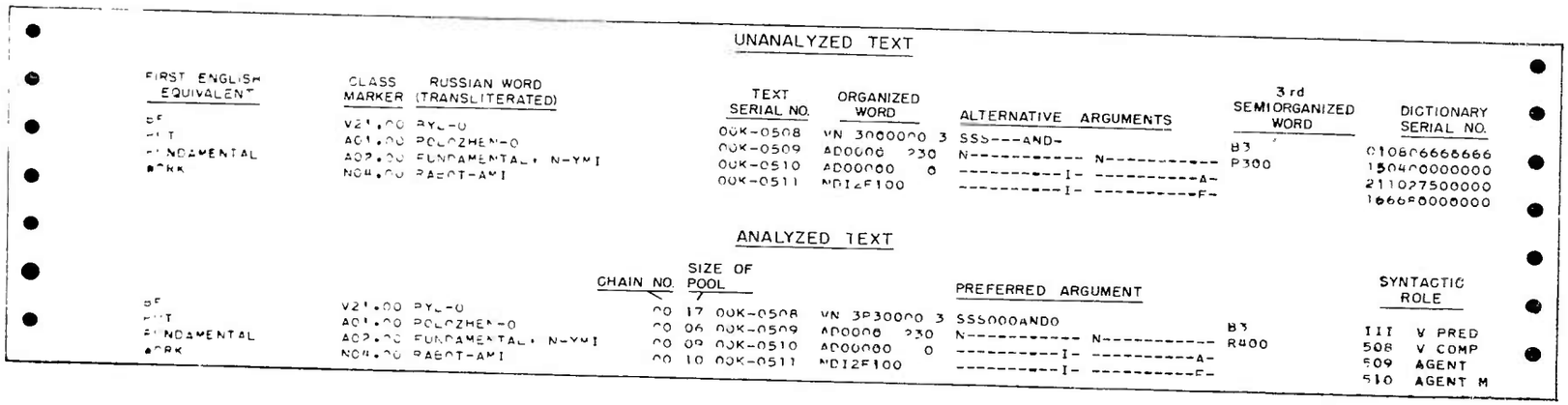
CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
02	47	00K-0798	N012F000	N---------- F----------		797	SUBJCT
02	48	00K-0799	VK 0P30000 3	001000XAD0 FR	B2B4	797	V PRED
02	49	00K-0800	VNR0940000		B0B6	799	V MAST

HINDSIGHT

PREDICTION WIPE? ---- [illegible]

A Verb Master of a Form of BYT' (быть)

Figure 36



UNANALYZED TEXT

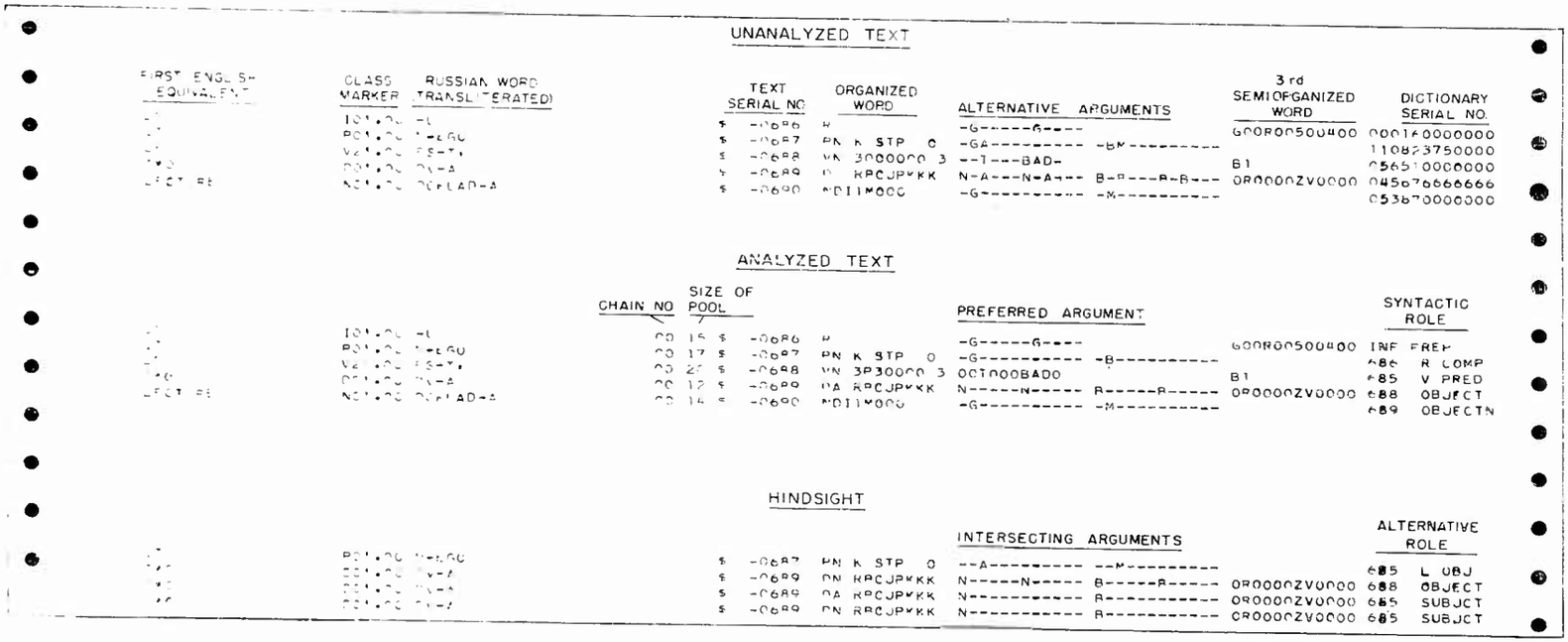
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
BE	V21.00	BYL-O	00K-0508	VN 3000000 3	SSS---AND-	B3	010806666666
FIT	A01.00	POLOZHEN-O	00K-0509	AD0006 230	N---------- N----------	P300	150400000000
FUNDAMENTAL	A02.00	FUNDAMENTAL, N-YMI	00K-0510	AD00000 0	----------I- ----------A-		211027500000
WORK	N04.00	RABOT-AMI	00K-0511	ND12F100	----------I- ----------F-		166P60000000

ANALYZED TEXT

		CHAIN NO.	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
BE	V21.00 BYL-O	00	17	00K-0508	VN 3P30000 3	SSS000AND0	B3	III V PRED
FIT	A01.00 POLOZHEN-O	00	06	00K-0509	AD0006 230	N---------- N----------	R400	508 V COMP
FUNDAMENTAL	A02.00 FUNDAMENTAL, N-YMI	00	09	00K-0510	AD00000 0	----------I- ----------A-		509 AGENT
WORK	N04.00 RABOT-AMI	00	10	00K-0511	ND12F100	----------I- ----------F-		510 AGENT M

A Verb Complement of a Form of BYT' (быть)

Figure 37



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
			$ -0686	P	-G-----G----	G00R00500400	000160000000
			$ -0687	PN K STP 0	-GA---------- -BM----------		110823750000
			$ -0688	VA 3P30000 3	--I---BAD-	B1	056510000000
			$ -0689	D RPCJPVKK	N-A---N-A--- B-B---B-B---	OR0000ZV0000	045676666666
			$ -0690	MD11M000	-G---------- -M----------		053670000000

ANALYZED TEXT

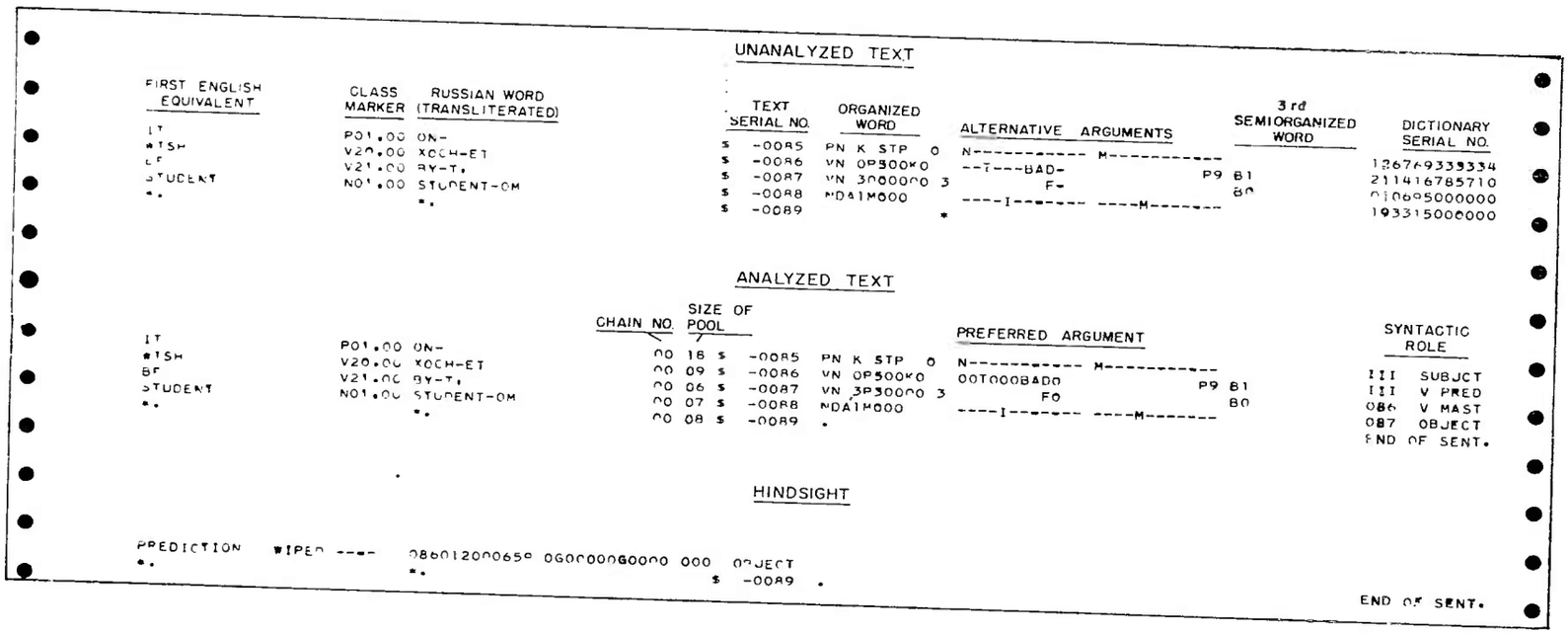
CHAIN NO	SIZE OF POOL				PREFERRED ARGUMENT		SYNTACTIC ROLE
		$	-0686	P	-G-----G----	G00R00500400	INF FREF
		$	-0687	PN K STP 0	-G---------- -B----------		A86 R COMP
		$	-0688	VA 3P30000 3	OCT000BAD0	B1	A85 V PRED
		$	-0689	DA RPCJPVKK	N-----N----- B-----B-----	OR0000ZV0000	688 OBJECT
		$	-0690	MD11M000	-G---------- -M----------		689 OBJECTN

HINDSIGHT

				INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
		$	-0687	PN K STP 0	--A---------- --M----------		685 L OBJ
		$	-0689	DN RPCJPVKK	N-----N----- B-----B-----	OR0000ZV0000	688 OBJECT
		$	-0689	DA RPCJPVKK	N---------- B----------	OR0000ZV0000	685 SUBJCT
		$	-0689	DN RPCJPVKK	N---------- B----------	OR0000ZV0000	685 SUBJCT

A Nominative Object of a Form of BYT' (быть)

Figure 38



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
IT	P01.00	ON-	$ -0085	PN K STP 0	N---------- M----------		136769339334
#ISH	V20.00	XOCH-ET	$ -0086	VN 0P300K0	--T---BAD- P9 B1		211416785710
OF	V21.00	BY-T,	$ -0087	VN 3P00000 3	F- B0		010695000000
STUDENT	N01.00	STUDENT-OM	$ -0088	NDA1M000	----I------- ----M-------		193315000000
*.		*.	$ -0089	*			

ANALYZED TEXT

		CHAIN NO.	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
IT	P01.00 ON-	00	16	$ -0085	PN K STP 0	N---------- M----------		III SUBJCT
#ISH	V20.00 XOCH-ET	00	09	$ -0086	VN 0P300K0	00T000BAD0 P9 B1		III V PRED
OF	V21.00 BY-T,	00	06	$ -0087	VN 3P30000 3	F0 B0		086 V MAST
STUDENT	N01.00 STUDENT-OM	00	07	$ -0088	NDA1M000	----I------- ----M-------		087 OBJECT
*.	*.	00	08	$ -0089	.			END OF SENT.

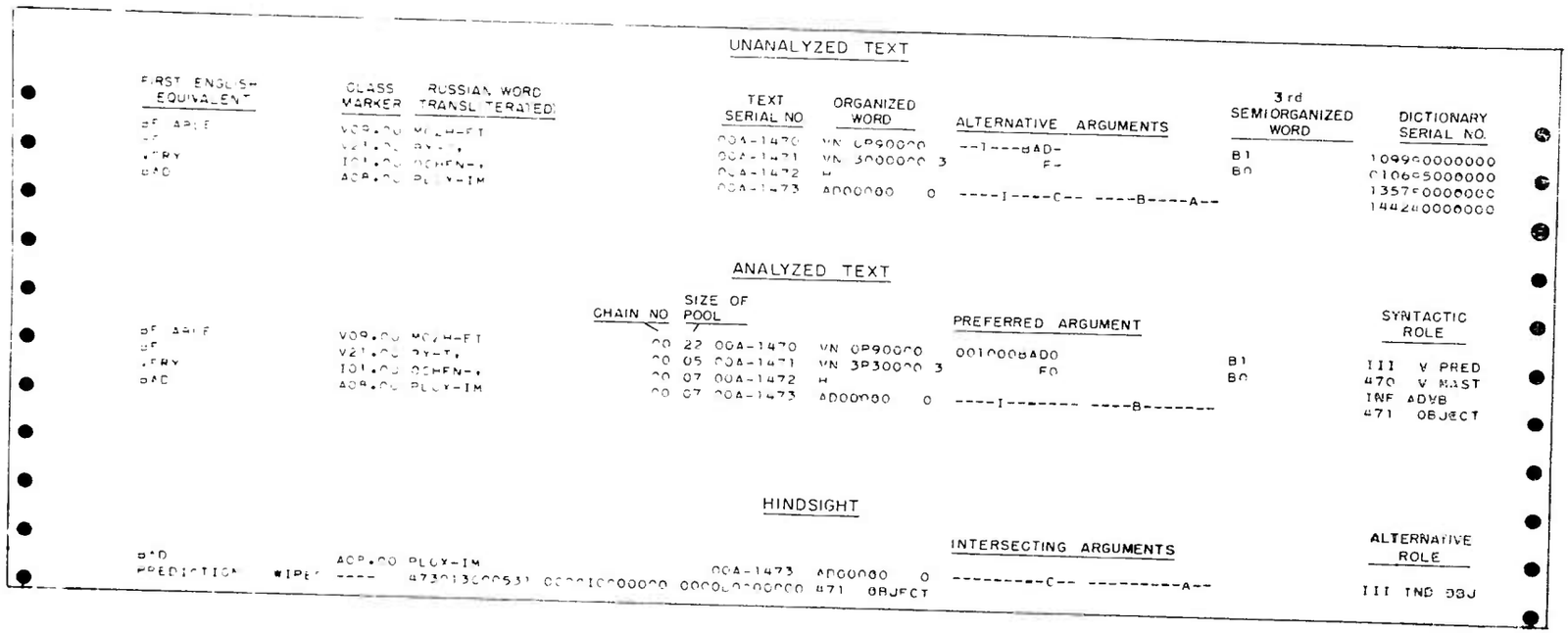
HINDSIGHT

PREDICTION WIPED ---- 086012000650 0G0000G0000 000 OBJECT
*. *.
$ -0089 .

END OF SENT.

An Instrumental Object of a Form of BYT' (**быть**)

Figure 39



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD TRANSLITERATED	TEXT SERIAL NO	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
BE ABLE	V09.00	MOCH-FT	00A-1470	VN 0P90000	--I---BAD-	B1	1099600000000
BE	V21.00	BY-T,	00A-1471	VN 3P30000 3	F-	B0	0106850000000
VERY	I01.00	OCHEN-,	00A-1472	H			1357600000000
BAD	A08.00	PLOX-IM	00A-1473	AD00000 0	----I----C-- ----B----A--		1442400000000

ANALYZED TEXT

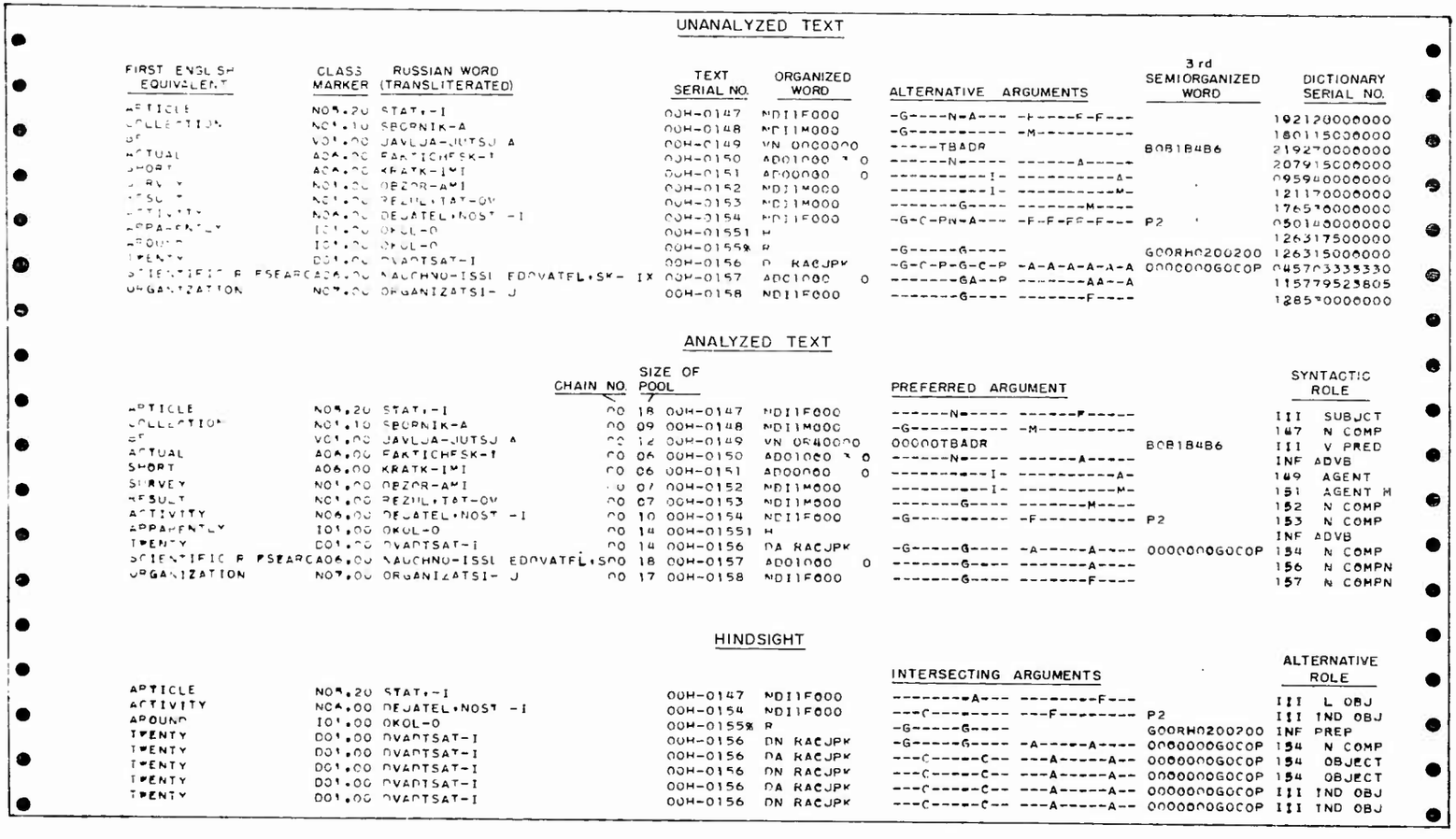
		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
BE ABLE	V09.00 MOCH-FT	00	22	00A-1470	VN 0P90000	0010008AD0	B1	III V PRED
BE	V21.00 BY-T,	00	05	00A-1471	VN 3P30000 3	F0	B0	470 V MAST
VERY	I01.00 OCHEN-,	00	07	00A-1472	H			INF ADVB
BAD	A08.00 PLOX-IM	00	07	00A-1473	AD00000 0	----I-------- ----B--------		471 OBJECT

HINDSIGHT

						INTERSECTING ARGUMENTS	ALTERNATIVE ROLE
BAD	A08.00 PLOX-IM			00A-1473	AD00000 0	---------C-- ----------A--	
PREDICTION	WIPE	----	473013000531	0000100000000	0000000000000	471 OBJECT	III IND OBJ

A Predicate Adjective Following a Form of BYT' (быть)

Figure 40



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
ARTICLE	NOR,20	STAT+-I	00H-0147	NDIIF000	-G----N-A--- -F----F-F---		192120000000
COLLECTION	NO1,10	SBORNIK-A	00H-0148	NDIIM000	-G---------- -M----------		180115000000
OF	V01,00	JAVLJA-JUTSJ A	00H-0149	VN 0000000	-----TBADR	B0B1B4B6	219270000000
ACTUAL	A0A,00	FAKTICHESK-I	00H-0150	AD01000 0	------N----- ------A-----		207915000000
SHORT	A06,00	KRATK-IMI	00H-0151	AD00000 0	----------I- ----------A-		095940000000
SURVEY	NO1,00	OBZOR-AMI	00H-0152	NDIIM000	----------I- ----------M-		121170000000
RESULT	NO1,00	REZUL+TAT-OV	00H-0153	NDIIM000	-------G---- -------M----		176570000000
ACTIVITY	NOA,00	DEJATEL+NOST -I	00H-0154	NDIIF000	-G-C-P-N-A--- -F-F-FF-F---	P2	050140000000
APPARENTLY	I01,00	OKOL-O	00H-01551	H			126317500000
AROUND	I01,00	OKOL-O	00H-0155%	R	-G-----G----	G00RH0200200	126315000000
TWENTY	D01,00	DVADTSAT-I	00H-0156	D RACJPK	-G-C-P-G-C-P -A-A-A-A-A-A	0000000GOCOP	045703333330
SCIENTIFIC R ESEARCA	A06,00	NAUCHNO-ISSL EDOVATEL+SK- IX	00H-0157	ADC1000 0	-------GA---P -------AA--A		115779523805
ORGANIZATION	NO7,00	ORGANIZATSI- J	00H-0158	NDIIF000	-------G---- -------F----		128570000000

ANALYZED TEXT

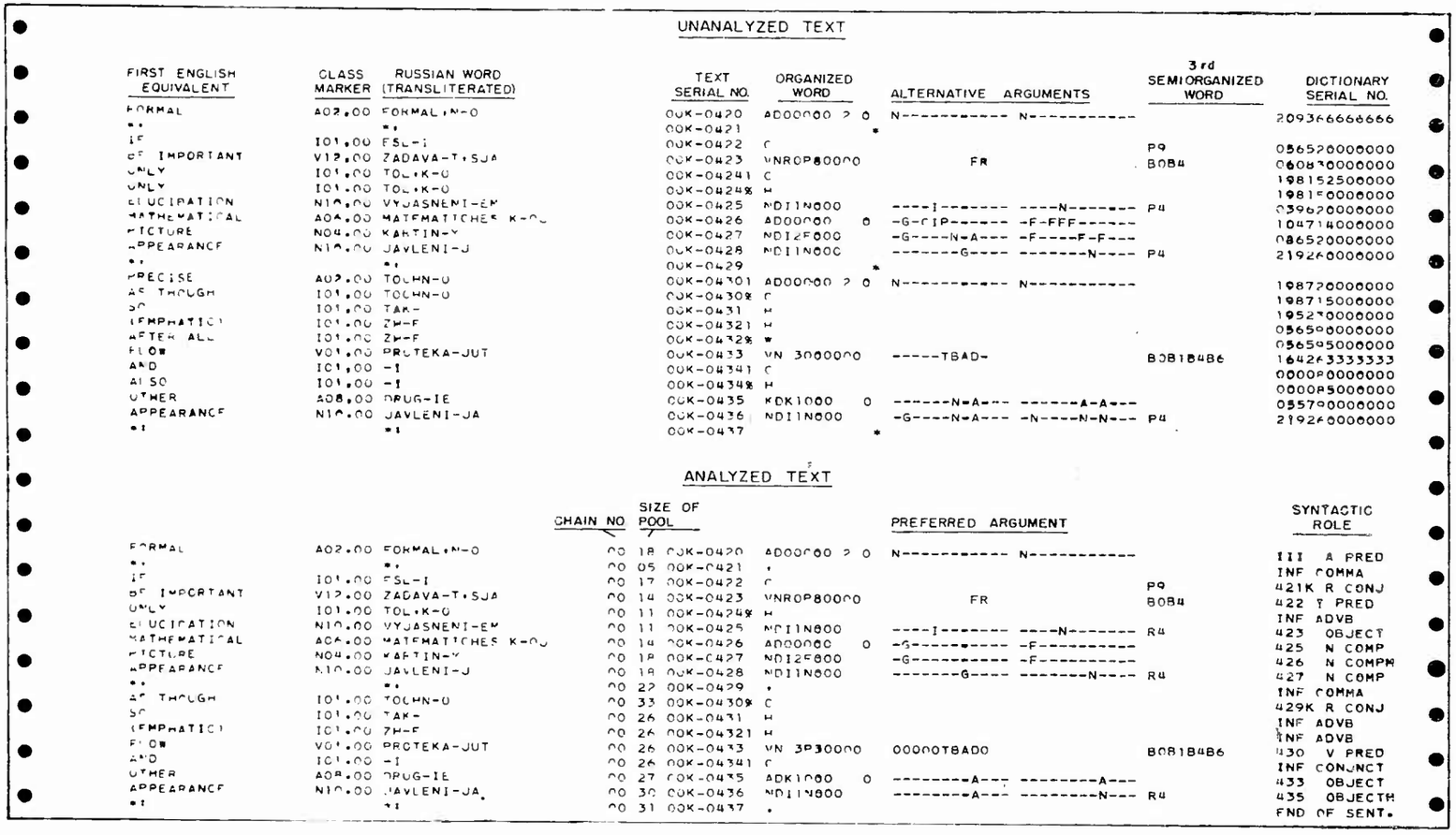
			CHAIN NO.	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
ARTICLE	NOR,20	STAT+-I	00	18	00H-0147	NDIIF000	------N----- ------F-----		III SUBJCT
COLLECTION	NO1,10	SBORNIK-A	00	09	00H-0148	NDIIM000	-G---------- -M----------		147 N COMP
OF	V01,00	JAVLJA-JUTSJ A	00	12	00H-0149	VN 0R40000	000007BADR	B0B1B4B6	III V PRED
ACTUAL	A0A,00	FAKTICHESK-I	00	06	00H-0150	AD01000 0	------N----- ------A-----		INF ADVB
SHORT	A06,00	KRATK-IMI	00	06	00H-0151	AD00000 0	----------I- ----------A-		149 AGENT
SURVEY	NO1,00	OBZOR-AMI	00	07	00H-0152	NDIIM000	----------I- ----------M-		151 AGENT H
RESULT	NO1,00	REZUL+TAT-OV	00	07	00H-0153	NDIIM000	-------G---- -------M----		152 N COMP
ACTIVITY	NOA,00	DEJATEL+NOST -I	00	10	00H-0154	NDIIF000	-G---------- -F---------- P2		153 N COMP
APPARENTLY	I01,00	OKOL-O	00	14	00H-01551	H			INF ADVB
TWENTY	D01,00	DVADTSAT-I	00	14	00H-0156	DA RACJPK	-G-----G---- -A-----A----	0000000GOCOP	154 N COMP
SCIENTIFIC R ESEARCA	A06,00	NAUCHNO-ISSL EDOVATEL+SK-	00	18	00H-0157	AD01000 0	-------G---- -------A----		156 N COMPN
ORGANIZATION	NO7,00	ORGANIZATSI- J	00	17	00H-0158	NDIIF000	-------G---- -------F----		157 N COMPN

HINDSIGHT

					INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
ARTICLE	NOR,20	STAT+-I	00H-0147	NDIIF000	--------A--- ---------F---		III L OBJ
ACTIVITY	NOA,00	DEJATEL+NOST -I	00H-0154	NDIIF000	---C---------- ---F----------	P2	III IND OBJ
AROUND	I01,00	OKOL-O	00H-0155%	R	-G-----G----	G00RH0200200	INF PREP
TWENTY	D01,00	DVADTSAT-I	00H-0156	DN RACJPK	-G-----G----- -A-----A----	0000000GOCOP	154 N COMP
TWENTY	D01,00	DVADTSAT-I	00H-0156	DA RACJPK	---C------C-- ---A-----A--	0000000GOCOP	154 OBJECT
TWENTY	D01,00	DVADTSAT-I	00H-0156	DN RACJPK	---C------C-- ---A-----A--	0000000GOCOP	154 OBJECT
TWENTY	D01,00	DVADTSAT-I	00H-0156	DA RACJPK	---C------C-- ---A-----A--	0000000GOCOP	III IND OBJ
TWENTY	D01,00	DVADTSAT-I	00H-0156	DN RACJPK	---C------C-- ---A-----A--	0000000GOCOP	III IND OBJ

The Analysis of a Preposition-adverb Homograph

Figure 41



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
FORMAL	A02.00	FORMAL•N-O	00K-0420	AD00000	2 0	N----------	N----------		209366666666
••		••	00K-0421		*				
IF	I01.00	ESL-I	00K-0422	C				P9	056520000000
BE IMPORTANT	V12.00	ZADAVA-T•SJA	00K-0423	VNR0P80000		FR		B0B4	060830000000
ONLY	I01.00	TOL•K-O	00K-04241	C					198152000000
ONLY	I01.00	TOL•K-O	00K-0424%	H					198150000000
ELUCIDATION	N10.00	VYJASNENI-EM	00K-0425	NDI1N000		----I-------	----N--------	P4	039620000000
MATHEMATICAL	A04.00	MATEMATICHES K-OU	00K-0426	AD00000	0	-G-CIP------	-F-FFF------		104714000000
PICTURE	N04.00	KARTIN-Y	00K-0427	NDI2F000		-G----N-A---	-F----F-F---		086520000000
APPEARANCE	N10.00	JAVLENI-J	00K-0428	NDI1N000		-------G----	-------N----	P4	219266000000
••		••	00K-0429		*				
PRECISE	A02.00	TOCHN-O	00K-04301	AD00000	2 0	N----------	N----------		198726000000
AS THOUGH	I01.00	TOCHN-O	00K-0430%	C					198715000000
SO	I01.00	TAK-	00K-0431	H					195270000000
(EMPHATIC)	I01.00	ZH-E	00K-04321	H					056590000000
AFTER ALL	I01.00	ZH-E	00K-0432%	*					056595000000
FLOW	V01.00	PROTEKA-JUT	00K-0433	VN 3000000		-----TBAD-		B0B1B4B6	164263333333
AND	I01.00	-I	00K-04341	C					000080000000
ALSO	I01.00	-I	00K-0434%	H					000085000000
OTHER	A08.00	DRUG-IE	00K-0435	KDK1000	0	------N=A---	------A-A---		055790000000
APPEARANCE	N10.00	JAVLENI-JA	00K-0436	NDI1N000		-G----N-A---	-N----N-N---	P4	219266000000
•I		•I	00K-0437		*				

ANALYZED TEXT

			CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE
FORMAL	A02.00	FORMAL•N-O	00	18	00K-0420	AD00000	2 0	N----------	N----------	III A PRED
••		••	00	05	00K-0421	•				INF COMMA
IF	I01.00	ESL-I	00	17	00K-0422	C				421K R CONJ
BE IMPORTANT	V12.00	ZADAVA-T•SJA	00	14	00K-0423	VNR0P80000		FR	P9 B0B4	422 T PRED
ONLY	I01.00	TOL•K-O	00	11	00K-0424%	H				INF ADVB
ELUCIDATION	N10.00	VYJASNENI-EM	00	11	00K-0425	NDI1N000		----I-------	----N-------- R4	423 OBJECT
MATHEMATICAL	A04.00	MATEMATICHES K-OU	00	14	00K-0426	AD00000	0	-G----------	-F----------	425 N COMP
PICTURE	N04.00	KARTIN-Y	00	18	00K-0427	NDI2F000		-G----------	-F----------	426 N COMPM
APPEARANCE	N10.00	JAVLENI-J	00	18	00K-0428	NDI1N000		-------G----	-------N---- R4	427 N COMP
••		••	00	22	00K-0429	•				INF COMMA
AS THOUGH	I01.00	TOCHN-O	00	33	00K-0430%	C				429K R CONJ
SO	I01.00	TAK-	00	26	00K-0431	H				INF ADVB
(EMPHATIC)	I01.00	ZH-E	00	26	00K-04321	H				INF ADVB
FLOW	V01.00	PROTEKA-JUT	00	26	00K-0433	VN 3P30000		000007BAD0	B0B1B4B6	430 V PRED
AND	I01.00	-I	00	26	00K-04341	C				INF CONJNCT
OTHER	A08.00	DRUG-IE	00	27	00K-0435	ADK1000	0	--------A---	--------A---	433 OBJECT
APPEARANCE	N10.00	JAVLENI-JA	00	30	00K-0436	NDI1N000		--------A---	--------N--- R4	435 OBJECTH
•I		•I	00	31	00K-0437	•				END OF SENT.

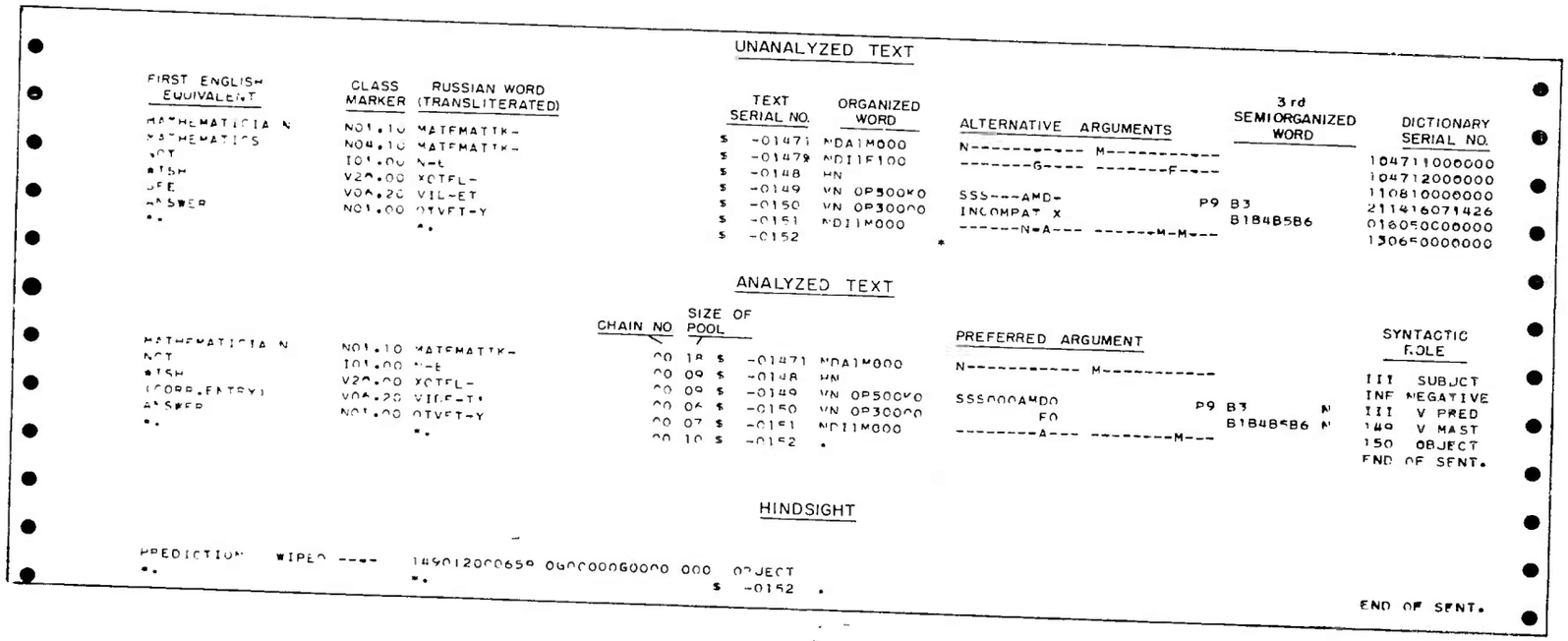
The Analysis of a Short-form Adjective-adverb Homograph and a Relative Conjunction-adverb Homograph

Figure 42

HINDSIGHT

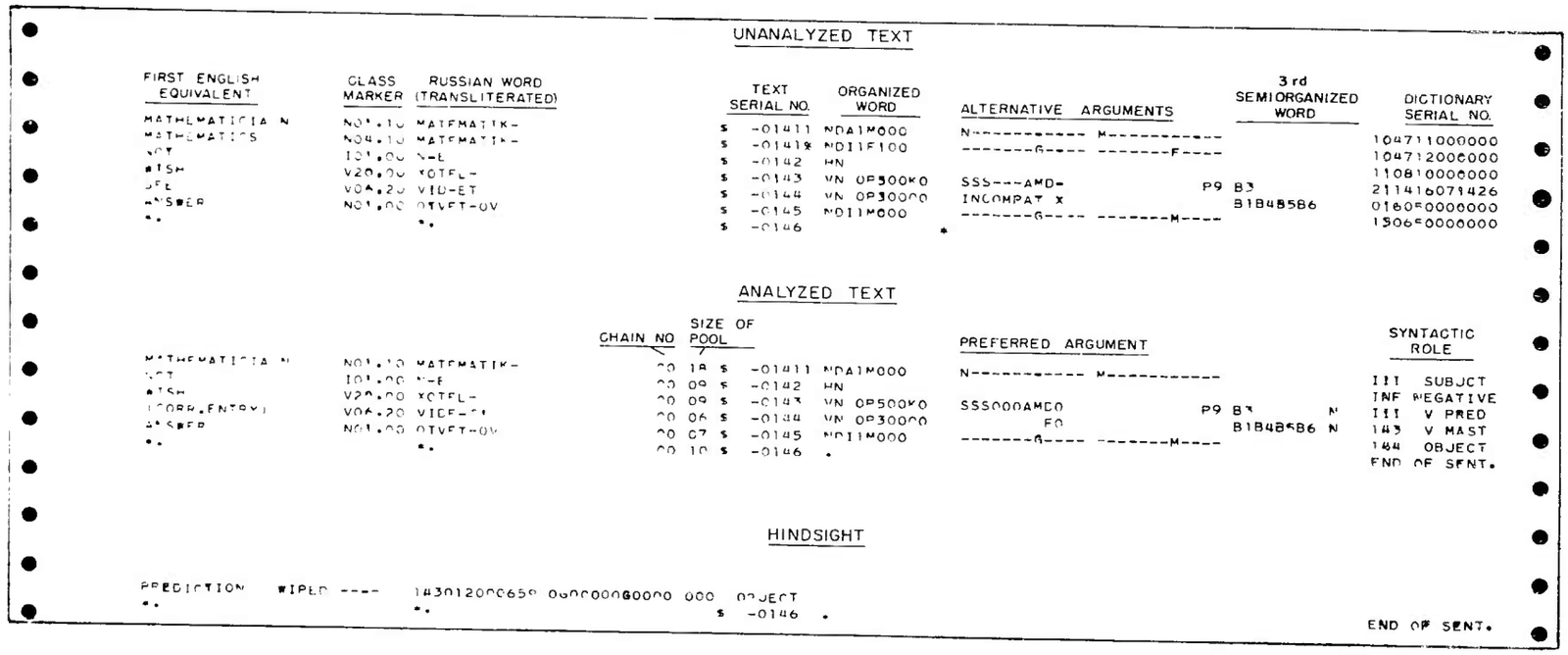
						INTERSECTING ARGUMENTS			ALTERNATIVE ROLE	
FORMAL		A02.00	FORMAL•N-0	00K-0420	AD00060 2 0	N----------	N----------			INF ADVB
••			••	00K-0421	•					INF CLAUSER
••			••	00K-0421	•					INF CONJNCT
OF IMPORTANT		V12.00	ZADAVA-T•SJA	00K-0423	VNR0P80000	FR		B0B4	422	SUBJCT
MATHEMATICAL		A0A.00	MATEMATICHES K-0L	00K-0426	AD00000 0	----I------	----F------		425	AGENT
••			••	00K-0429	•					INF CLAUSER
••			••	00K-0429	•					INF CONJNCT
PRECISE		A02.00	TOCHN-0	00K-04301	AD00000 2 0	N----------	N----------			INF ADVB
AFTER ALL		I01.00	ZH-F	00K-04328	H					INF ADVB
ALSO		I01.00	-I	00K-04348	H					INF ADVB
OTHER		A0R.00	DRUG-IE	00K-0435	NDK1000 0	--------A---	--------A---		433	OBJECT
OTHER		A0R.00	DRUG-IE	00K-0435	ADK1000 0	------N-----	------A-----		430	SUBJCT
OTHER		A0R.00	DRUG-IE	00K-0435	NDK1000 0	------N-----	------A-----		430	SUBJCT
APPEARANCE		N1A.00	JAVLENI-JA	00K-0436	ND11N000	------N-----	------N-----	R4	430	SUBJCT
PREDICTION	WIPED	----	4300120100X1A	0000000N0000	A011000000					
PREDICTION	WIPED	----	1110120700X1A	N000000000	N01A000000					

Figure 42 (continued)



An Object of a Negated Verb

Figure 43



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
MATHEMATICIA N	N01.10	MATEMATIK-	$ -0141	NDA1M000	N---------- M----------		104711000000
MATHEMATICS	N04.10	MATEMATIK-	$ -0141	NDI1F100	-------G---- -------F----		104712006000
NOT	I01.00	N-E	$ -0142	HN			110810006000
#ISH	V20.00	XOTEL-	$ -0143	VN 0P500K0	SSS---AMD-	P9 B3	211416071426
DEL	V04.20	VID-ET	$ -0144	VN 0P30000	INCOMPAT X	B1B4B5B6	0160500000000
ANSWER	N01.00	OTVET-OV	$ -0145	ND11M000	-------G---- -------M----		130650000000
*.		*.	$ -0146	.			

ANALYZED TEXT

		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
MATHEMATICIA N	N01.10	MATEMATIK-	00	18 $	-0141 NDA1M000	N---------- M----------		III SUBJCT
NOT	I01.00	N-E	00	09 $	-0142 HN			INF NEGATIVE
#ISH	V20.00	XOTEL-	00	09 $	-0143 VN 0P500K0	SSS000AMD0	P9 B3 N	III V PRED
(CORR.ENTRY)	V04.20	VIDE-ET	00	06 $	-0144 VN 0P30000	F0	B1B4B5B6 N	143 V MAST
ANSWER	N01.00	OTVET-OV	00	07 $	-0145 ND11M000	-------G---- -------M----		144 OBJECT
*.		*.	00	10 $	-0146 .			END OF SENT.

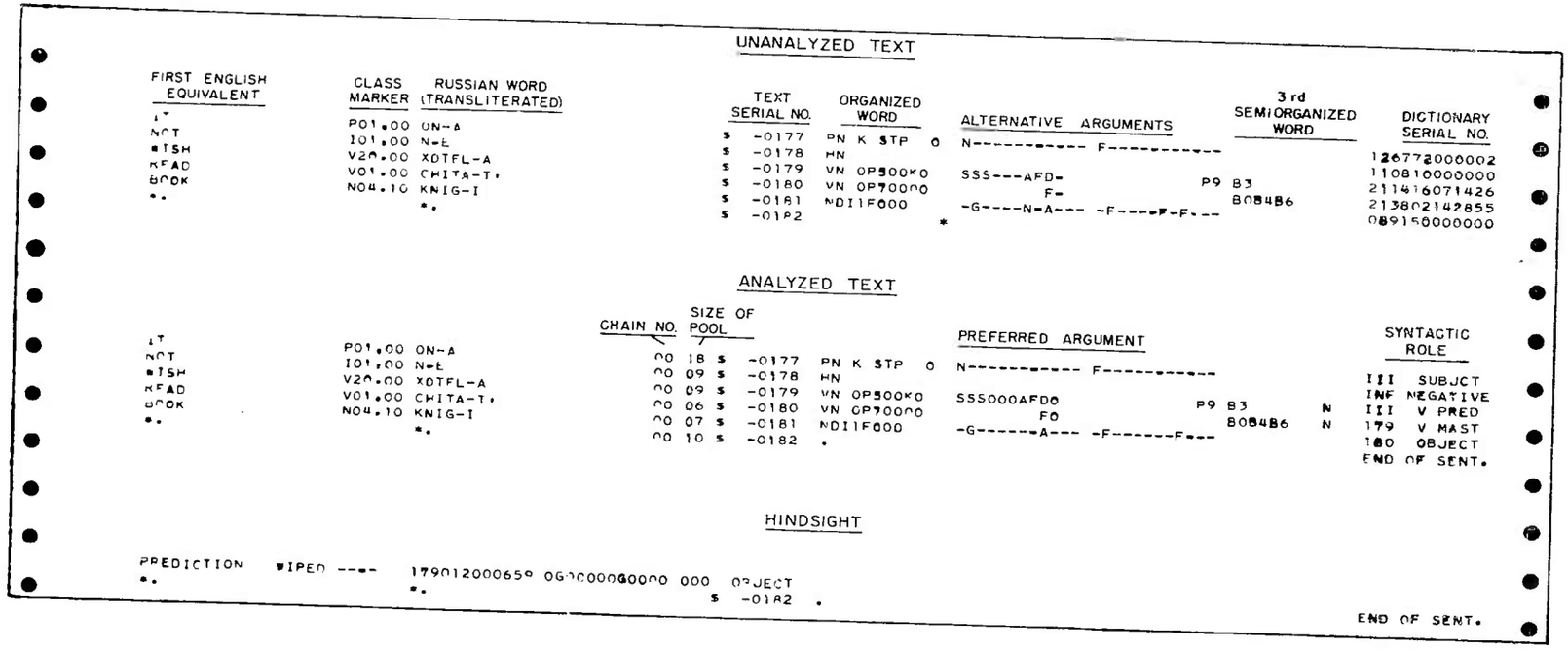
HINDSIGHT

PREDICTION WIPED ---- 14301200065? 0?0000060000 000 OBJECT
*. *. $ -0146 .

END OF SENT.

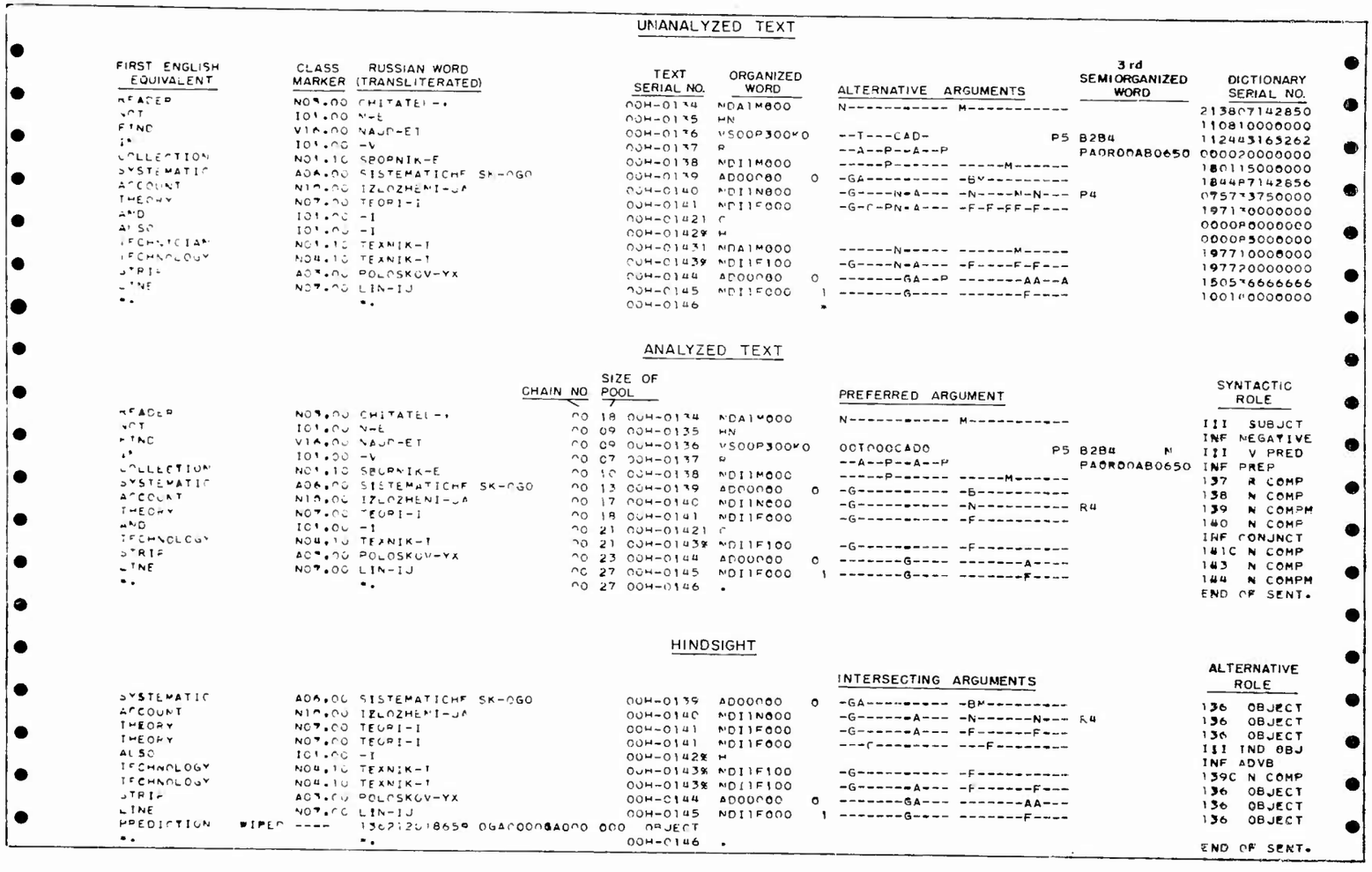
An Object of a Negated Verb

Figure 44



An Object of a Negated Verb with Case and Number Ambiguity

Figure 45



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
READER	N09.00	CHITATEL-*	00H-0134	NDA1M000		N---------- M----------			213807142850
NOT	I01.00	N-E	00H-0135	HN					110810000000
FIND	V16.00	NAJD-ET	00H-0136	VS00P300K0		--T---CAD-	P5	B2B4	112443165262
IS	I01.00	-V	00H-0137	R		--A--P--A--P		PA0R00AB0650	000020000000
COLLECTION	N01.10	SBORNIK-E	00H-0138	NDI1M000		-----P------ -----M------			180115000000
SYSTEMATIC	A06.00	SISTEMATICHF SK-OGO	00H-0139	AD00000	0	-GA---------- -BV----------			1844P7142856
ACCOUNT	N10.00	IZLOZHENI-JA	00H-0140	NDI1N000		-G----N=A--- -N----N-N---	P4		075733750000
THEORY	N07.00	TEORI-I	00H-0141	NDI1F000		-G-C-PN=A--- -F-F-FF-F---			197130000000
AND	I01.00	-I	00H-01421	C					0000P0000000
ALSO	I01.00	-I	00H-0142*	H					0000P5000000
TECHNICIAN	N01.10	TEXNIK-I	00H-0143	NDA1M000		------N----- ------M------			197710000000
TECHNOLOGY	N04.10	TEXNIK-I	00H-0143*	NDI1F100		-G----N=A--- -F----F-F---			197720000000
STRIP	A07.00	POLOSKOV-YX	00H-0144	AD00000	0	-------GA--P -------AA--A			150576666666
LINE	N07.00	LIN-IJ	00H-0145	NDI1F000	1	-------G----- -------F-----			100100000000
*.		*.	00H-0146	*					

ANALYZED TEXT

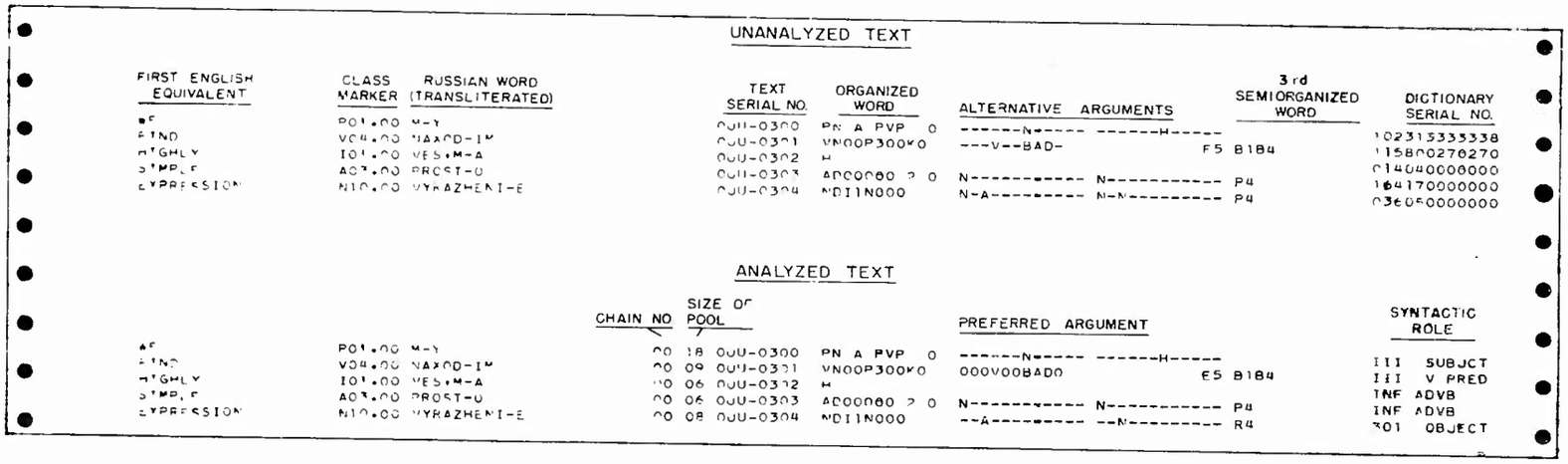
			CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE
READER	N09.00	CHITATEL-*	00	18	00H-0134	NDA1M000	N---------- M----------			III SUBJCT
NOT	I01.00	N-E	00	09	00H-0135	HN				INF NEGATIVE
FIND	V16.00	NAJD-ET	00	09	00H-0136	VS00P300K0	00T000CAD0	P5	B2B4 N	III V PRED
IS	I01.00	-V	00	07	00H-0137	R	--A--P--A--P		PA0R00AB0650	INF PREP
COLLECTION	N01.10	SBORNIK-E	00	10	00H-0138	NDI1M000	-----P------ -----M------			137 R COMP
SYSTEMATIC	A06.00	SISTEMATICHF SK-OGO	00	13	00H-0139	AD00000	0 -G---------- -B----------			138 N COMP
ACCOUNT	N10.00	IZLOZHENI-JA	00	17	00H-0140	NDI1N000	-G---------- -N----------		R4	139 N COMPM
THEORY	N07.00	TEORI-I	00	18	00H-0141	NDI1F000	-G---------- -F----------			140 N COMP
AND	I01.00	-I	00	21	00H-01421	C				INF CONJNCT
TECHNOLOGY	N04.10	TEXNIK-I	00	21	00H-0143*	NDI1F100	-G---------- -F----------			141C N COMP
STRIP	A07.00	POLOSKOV-YX	00	23	00H-0144	AD00000	0 -------G----- -------A-----			143 N COMP
LINE	N07.00	LIN-IJ	00	27	00H-0145	NDI1F000	1 -------G----- -------F-----			144 N COMPM
*.		*.	00	27	00H-0146	*				END OF SENT.

HINDSIGHT

					INTERSECTING ARGUMENTS			ALTERNATIVE ROLE
SYSTEMATIC	A06.00	SISTEMATICHF SK-OGO	00H-0139	AD00000	0	-GA---------- -BM----------		136 OBJECT
ACCOUNT	N10.00	IZLOZHENI-JA	00H-0140	NDI1N000		-G------=A--- -N-------N---	R4	136 OBJECT
THEORY	N07.00	TEORI-I	00H-0141	NDI1F000		-G------=A--- -F-------F---		136 OBJECT
THEORY	N07.00	TEORI-I	00H-0141	NDI1F000		---C---------- ---F---------		III IND OBJ
ALSO	I01.00	-I	00H-0142*	H				INF ADVB
TECHNOLOGY	N04.10	TEXNIK-I	00H-0143*	NDI1F100		-G---------- -F----------		139C N COMP
TECHNOLOGY	N04.10	TEXNIK-I	00H-0143*	NDI1F100		-G------=A--- -F-------F---		136 OBJECT
STRIP	A07.00	POLOSKOV-YX	00H-0144	AD00000	0	-------GA---- -------AA----		136 OBJECT
LINE	N07.00	LIN-IJ	00H-0145	NDI1F000	1	-------G----- -------F-----		136 OBJECT
PREDICTION	WIPED	---- 136213018650 0GA00008A000 000 OBJECT						
*.		*.	00H-0146	*				END OF SENT.

An Analysis with Object-noun Complement Ambiguity

Figure 46



UNANALYZED TEXT

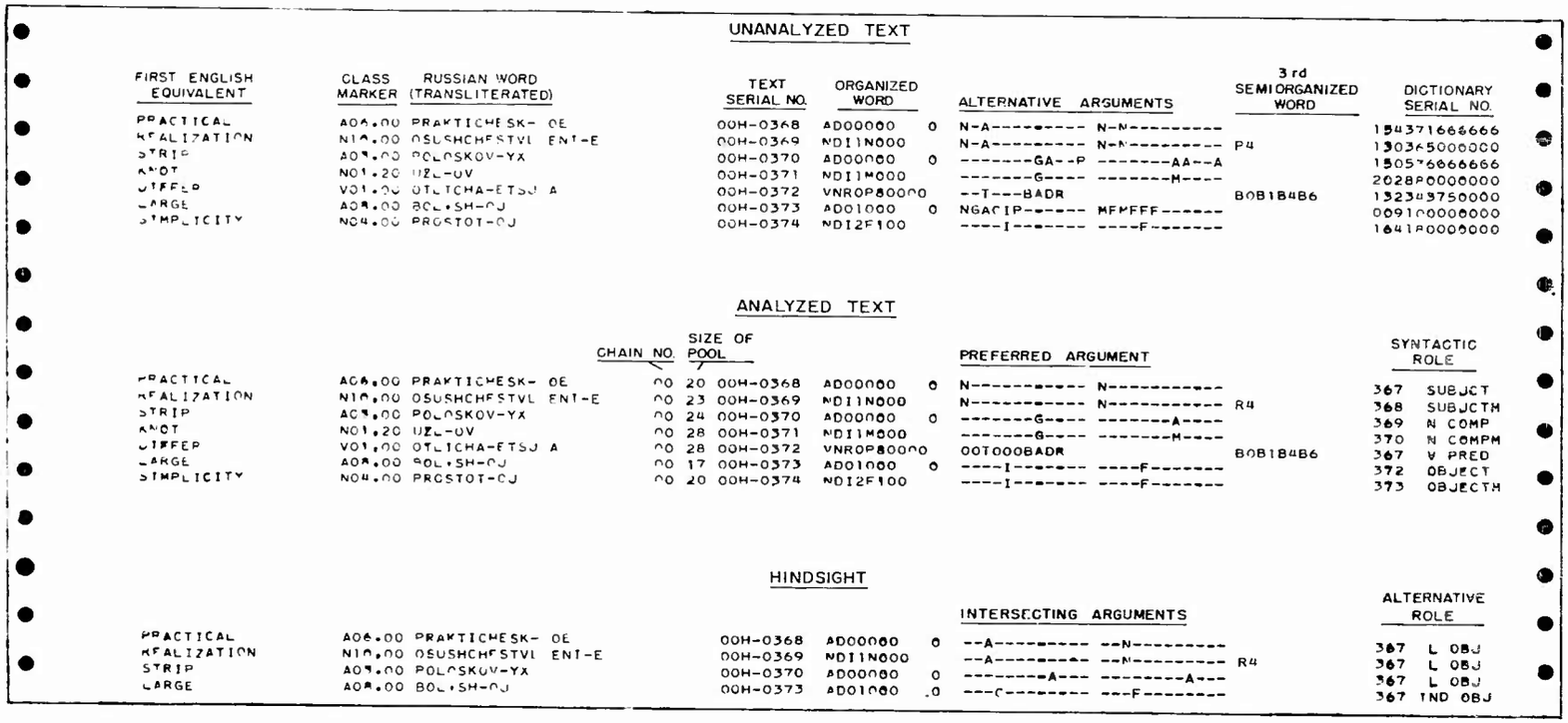
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
•F	P01.00 M-Y		000-0300	PN A PVP 0	------N------ ------H------		1023133333338
FIND	V04.00 NAXOD-IM		000-0301	VN00P300K0	---V--BAD-	F5 B184	1158000270270
HIGHLY	I01.00 YES,M-A		000-0302	H			0140400000000
SIMPLE	A03.00 PROST-O		000-0303	AD00080 2 0	N---------- N----------	P4	1641700000000
EXPRESSION	N10.00 VYRAZHENI-E		000-0304	NDI1N000	N-A-------- N-N--------	P4	0360500000000

ANALYZED TEXT

		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
AF	P01.00 M-Y	00	18	000-0300	PN A PVP 0	------N------ ------H------		III SUBJCT
FIND	V04.00 NAXOD-IM	00	09	000-0301	VN00P300K0	000V00BAD0	F5 B184	III V PRED
HIGHLY	I01.00 YES,M-A	00	06	000-0302	H			INF ADVB
SIMPLE	A03.00 PROST-O	00	06	000-0303	AD00080 2 0	N---------- N----------	P4	INF ADVB
EXPRESSION	N10.00 VYRAZHENI-E	00	08	000-0304	NDI1N000	--A-------- --N--------	R4	301 OBJECT

A "Subject – Predicate – Object" Clause

Figure 47



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
PRACTICAL	A06.00	PRAKTICHESK- OE	00H-0368	AD00000	0	N-A----------	N-N----------		154371666666
REALIZATION	N10.00	OSUSHCHESTVL ENI-E	00H-0369	ND11N000		N-A----------	N-N----------	P4	130365000000
STRIP	A09.00	POLOSKOV-YX	00H-0370	AD00000	0	--------GA--P	--------AA--A		1305766666666
KNOT	N01.20	UZL-OV	00H-0371	ND11M000		--------G-----	--------M-----		2028P0000000
DIFFER	V01.00	OTLICHA-ETSJ A	00H-0372	VNR0P80000		--T---BADR		B0B1B4B6	1323437500000
LARGE	A08.00	BOL+SH-OJ	00H-0373	AD01000	0	NGACIP------	MFMFFF------		0091000000000
SIMPLICITY	N04.00	PROSTOT-OJ	00H-0374	ND12F100		----I--------	----F--------		1641P0000000

ANALYZED TEXT

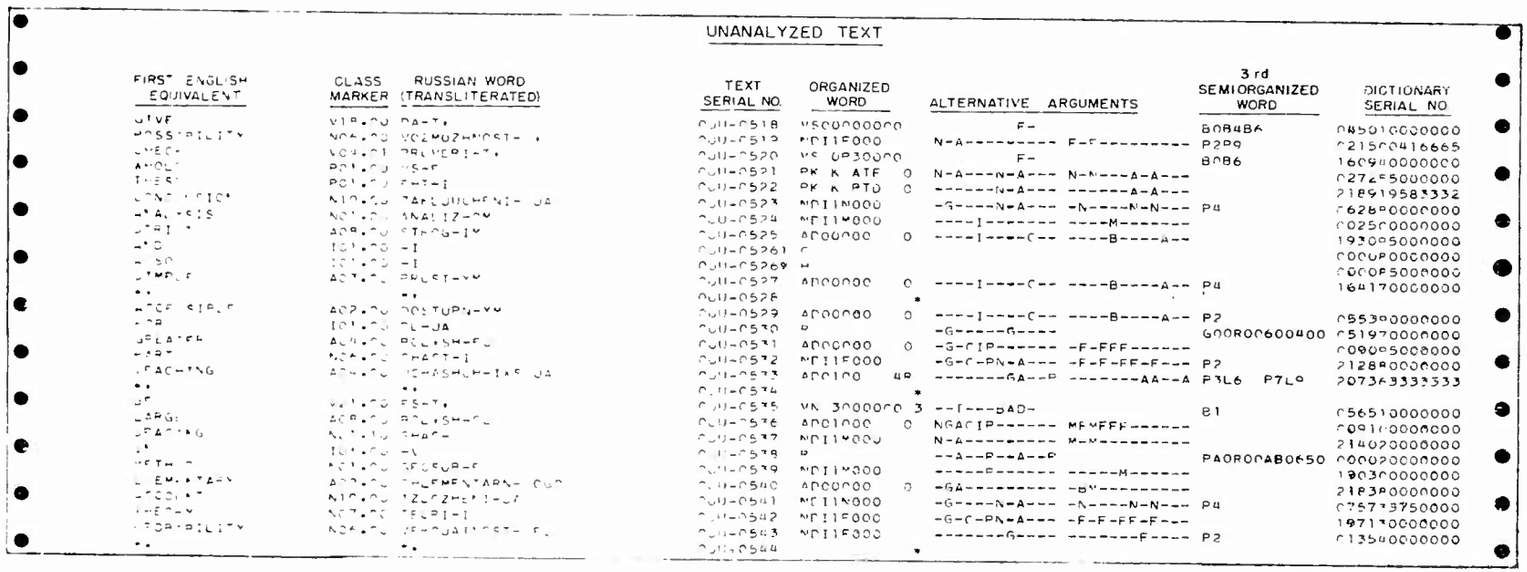
		CHAIN NO.	SIZE OF POOL				PREFERRED ARGUMENT			SYNTACTIC ROLE	
PRACTICAL	A06.00 PRAKTICHESK- OE	00	20	00H-0368	AD00000	0	N----------	N----------		367	SUBJCT
REALIZATION	N10.00 OSUSHCHESTVL ENI-E	00	23	00H-0369	ND11N000		N----------	N----------	R4	368	SUBJCTM
STRIP	A09.00 POLOSKOV-YX	00	24	00H-0370	AD00000	0	--------G-----	--------A-----		369	N COMP
KNOT	N01.20 UZL-OV	00	28	00H-0371	ND11M000		--------G-----	--------M-----		370	N COMPM
DIFFER	V01.00 OTLICHA-ETSJ A	00	28	00H-0372	VNR0P80000		00T000BADR		B0B1B4B6	367	V PRED
LARGE	A08.00 BOL+SH-OJ	00	17	00H-0373	AD01000	0	----I--------	----F--------		372	OBJECT
SIMPLICITY	N04.00 PROSTOT-OJ	00	20	00H-0374	ND12F100		----I--------	----F--------		373	OBJECTH

HINDSIGHT

					INTERSECTING ARGUMENTS			ALTERNATIVE ROLE
PRACTICAL	A06.00 PRAKTICHESK- OE	00H-0368	AD00000	0	--A----------	--N----------		367 L OBJ
REALIZATION	N10.00 OSUSHCHESTVL ENI-E	00H-0369	ND11N000		--A----------	--N----------	R4	367 L OBJ
STRIP	A09.00 POLOSKOV-YX	00H-0370	AD00000	0	--------A-----	--------A-----		367 L OBJ
LARGE	A08.00 BOL+SH-OJ	00H-0373	AD01000	0	----C--------	----F--------		367 IND OBJ

A "Subject – Predicate – Object" Clause

Figure 48

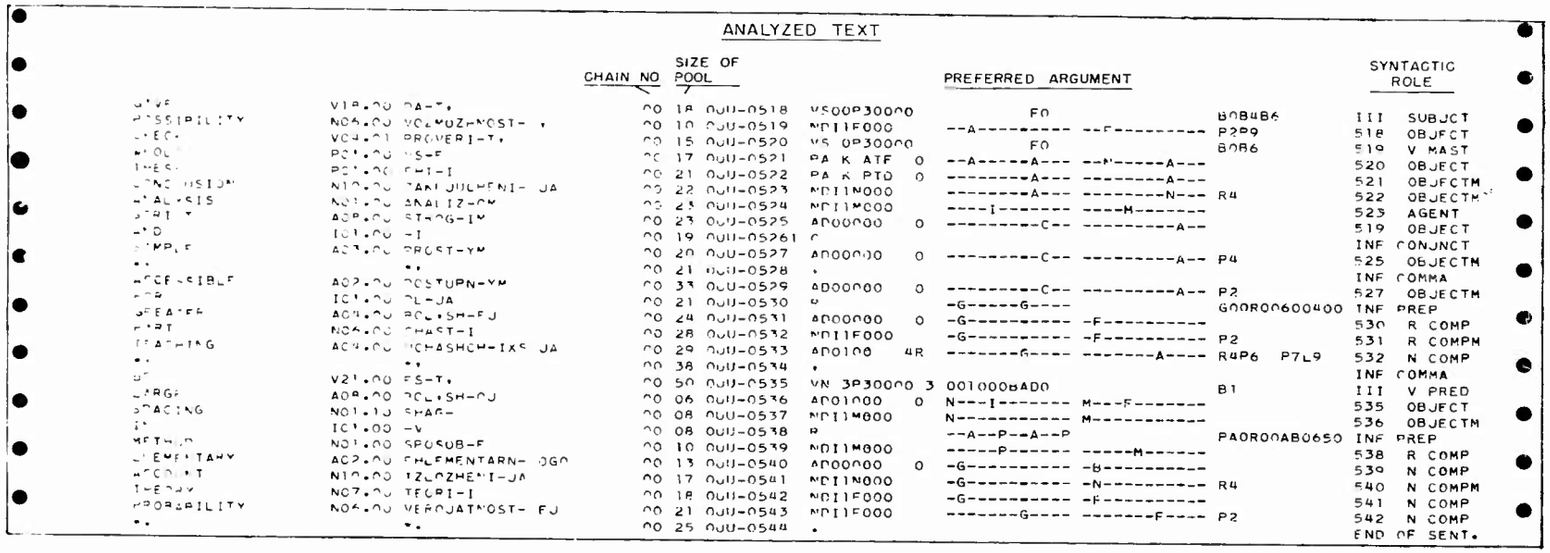


UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
GIVE	V1P,2S	DA-T'	000-0518	VS00000000		F-	B0B4BA	0A501G000000
POSSIBILITY	NOA,2S	VOZMOZHNOST- '	000-0519	MP11F000		N-A---------- F-F----------	P2P9	021500416665
CHECK	V04,2S	PROVERIT'	000-0520	VS 0P30000		F-	B0B6	160980000000
ANGLE	P01,2S	US-F	000-0521	PK K ATF	0	N-A---N-A--- N-M----A-A---		027650000000
THERE	P01,2S	TAM-I	000-0522	PK K PTO	0	------N-A--- -------A-A---		218919583332
CONCEPTION	N1P,2S	TARLQUCHENI- JA	000-0523	MP11M000		-G----N-A--- -N----N-N---	P4	062690000000
ANALYSIS	N0',2S	ANALIZ-OV	000-0524	MP11M000		----I------- ----M-------		002500000000
SPIRIT	A0P,2S	STROG-IM	000-0525	AP00000	0	----I----C-- ----B----A--		193095000000
AND	101,2S	-I	000-05261	C				000090000000
AND	101,2S	-I	000-05269	M				000085000000
SIMPLE	A0',2S	PROST-YM	000-0527	AP00000	0	----I----C-- ----B----A--	P4	164170000000
**		**	000-0528		*			
ACCESSIBLE	A02,2S	DOSTUPN-YM	000-0529	AP00000	0	----I----C-- ----B----A--	P2	055390000000
FOR	101,2S	DL-JA	000-0530	P		-G-----G-----	G00R00600400	051970000000
RELATED	A04,2S	ROD-STV-O	000-0531	AP00000	0	-G-CIP------ -F-FFF------		000050000000
PART	N0A,2S	CHAST-I	000-0532	MP11F000		-G-C-PN-A--- -F-F-FF-F---	P2	212880000000
TEACHING	A0P,2S	UCHASHCHI-IKS JA	000-0533	AP0100	4P	-------GA--P -------AA--A	P3L6 P7L9	207363333333
**		**	000-0534		*			
OF	V41,2S	ES-T'	000-0535	VA 3000000	3	--I---DAD-	B1	056510000000
LARGE	A0P,2S	BOL-SHOJ	000-0536	AP01000	0	NGACIP------ MFMFFF------		009100000000
SPACING	N1',2S	SHAG-	000-0537	MP11M000		N-A---------- M-M----------		214020000000
AT	101,2S	-V	000-0538	P		--A--P--A--P	PA0R00AB0650	000020000000
METHOD	N01,2S	SPOSOB-F	000-0539	MP11M000		-----B------ -----M------		190300000000
ELEMENTARY	A0P,2S	ELEMENTARN- OGO	000-0540	AP00000	0	-GA--------- -BM---------		218380000000
SECOND	N1P,2S	VTOROZHER-IKOV	000-0541	MP11N000		-G----N-A--- -N----N-N---	P4	075733750000
THEORY	N0',2S	TEORI-I	000-0542	MP11F000		-G-C-PN-A--- -F-F-FF-F---		197170000000
PROBABILITY	N0A,2S	VEROYATNOST- F	000-0543	MP11F000		-------G---- -------F----	P2	013540000000
**		**	000-0544		*			

A Clause with an Infinitive Verb Subject

Figure 49



ANALYZED TEXT

		CHAIN NO	SIZE OF POOL		PREFERRED ARGUMENT		SYNTAGTIC ROLE	
[illegible]	V18.00 DA-T,	00	18	00U-0518	VS00P30000	F0 B0B4B6	III	SUBJCT
[illegible]SSIBILITY	N04.00 VOLMUZ-MOST- ,	00	10	00U-0519	MD11F000	--A---------- --F---------- P2P9	518	OBJECT
[illegible]EC+	V04.01 PROVERI-T,	00	15	00U-0520	VS 0P30000	F0 B0B6	519	V MAST
[illegible]OL	P01.00 US-F	00	17	00U-0521	PA K ATF 0	--A-----A--- --N-----A---	520	OBJECT
[illegible]ES+	P01.00 EXI-I	00	21	00U-0522	PA K PTD 0	--------A--- --------A---	521	OBJECTM
[illegible]ONCLUSION	N10.00 TANJUCHENI- JA	00	22	00U-0523	MD11M000	--------A--- --------N--- R4	522	OBJECTM
[illegible]NALYSIS	N01.00 ANALIZ-OM	00	23	00U-0524	MD11M000	----I------- ----M-------	523	AGENT
[illegible]ORI Y	A08.00 STROG-IM	00	23	00U-0525	AD00000 0	---------C-- ---------A--	519	OBJECT
[illegible]ND	IC1.00 -I	00	19	00U-05261	C		INF	CONJNCT
[illegible]MPLE	A03.00 PROST-YM	00	20	00U-0527	AD00000 0	---------C-- ---------A-- P4	525	OBJECTM
**	**	00	21	00U-0528	,		INF	COMMA
[illegible]CCESSIBLE	A02.00 DOSTUPN-YM	00	33	00U-0529	AD00000 0	---------C-- ---------A-- P2	527	OBJECTM
[illegible]OR	IC1.00 OL-JA	00	21	00U-0530	P	-G-----G----- G00R00600400	INF	PREP
[illegible]REATER	A04.00 POL+SH-EJ	00	24	00U-0531	AD00000 0	-G---------- -F----------	530	R COMP
[illegible]ART	N04.00 CHAST-I	00	28	00U-0532	MD11F000	-G---------- -F---------- P2	531	R COMPM
[illegible]EACHING	A04.00 NCHASHCH-IXS JA	00	29	00U-0533	AD0100 4R	-------G---- -------A---- R4P6 P7L9	532	N COMP
**	**	00	38	00U-0534	,		INF	COMMA
[illegible]F	V21.00 FS-T,	00	50	00U-0535	VN 3P30000 3	001000BAD0 B1	III	V PRED
[illegible]ARGE	A08.00 POL+SH-OJ	00	06	00U-0536	AD01000 0	N---I------- M---F-------	535	OBJECT
[illegible]PACING	N01.10 SHAG-	00	08	00U-0537	MD11M000	N---------- M----------	536	OBJECTM
[illegible]S	IC1.00 -V	00	08	00U-0538	P	--A--P--A--P PA0R00AB0650	INF	PREP
[illegible]ETHOD	N01.00 SPOSUB-F	00	10	00U-0539	MD11M000	-----P------ -----M------	538	R COMP
[illegible]LEMENTARY	A02.00 EMLEMENTARN- OGO	00	13	00U-0540	AD00000 0	-G---------- -B----------	539	N COMP
[illegible]CCOUNT	N10.00 IZLOZHENI-JA	00	17	00U-0541	MD11N000	-G---------- -N---------- R4	540	N COMPM
[illegible]HEORY	N07.00 TEORI-I	00	18	00U-0542	MD11F000	-G---------- -F----------	541	N COMP
[illegible]ROBABILITY	N04.00 VEROJATNOST- EJ	00	21	00U-0543	MD11F000	-------G---- -------F---- P2	542	N COMP
**	**	00	25	00U-0544	.		END	OF SENT.

Figure 49 (continued)

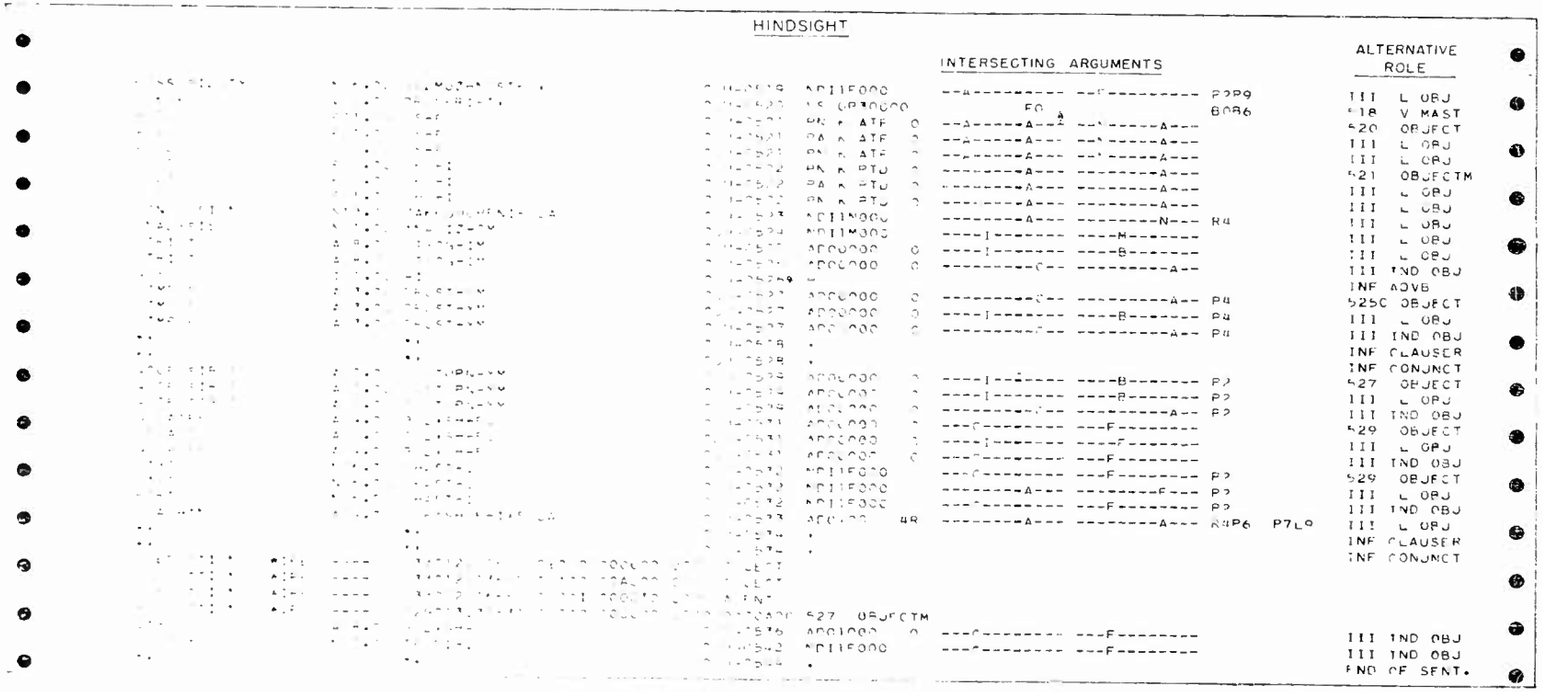
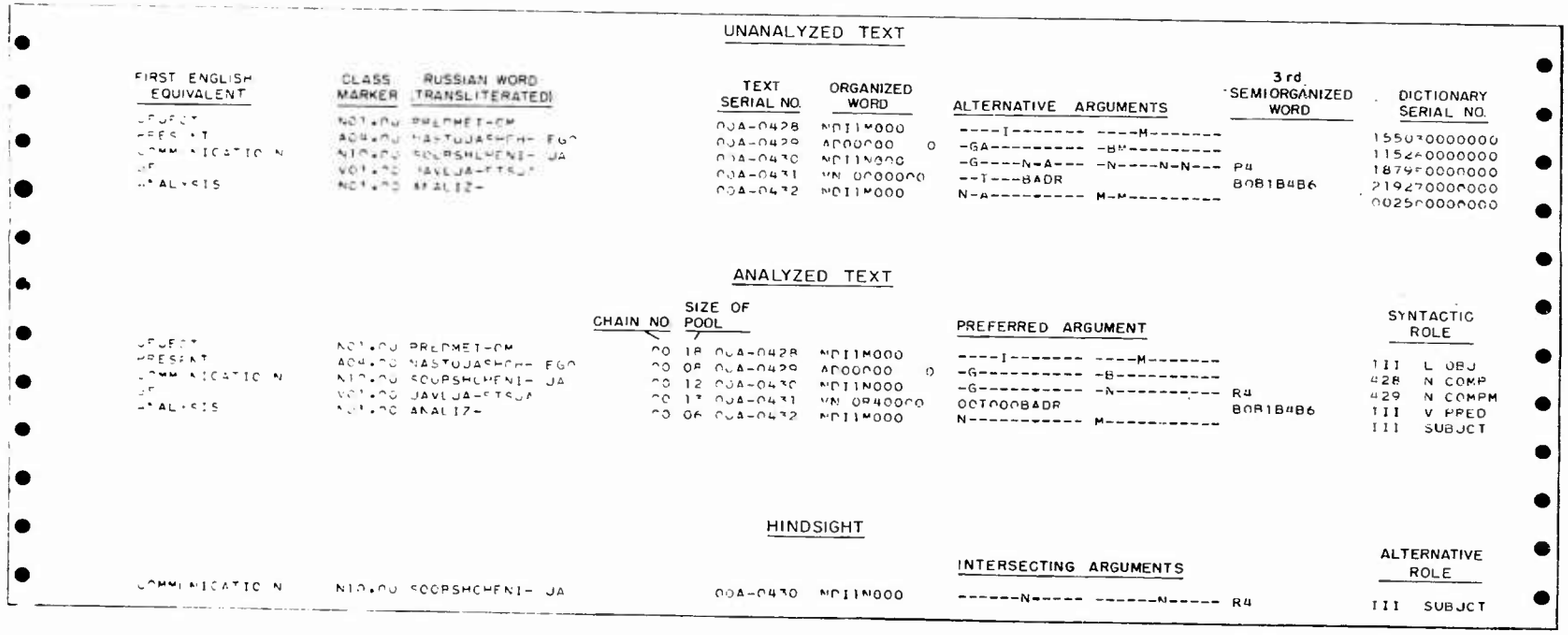
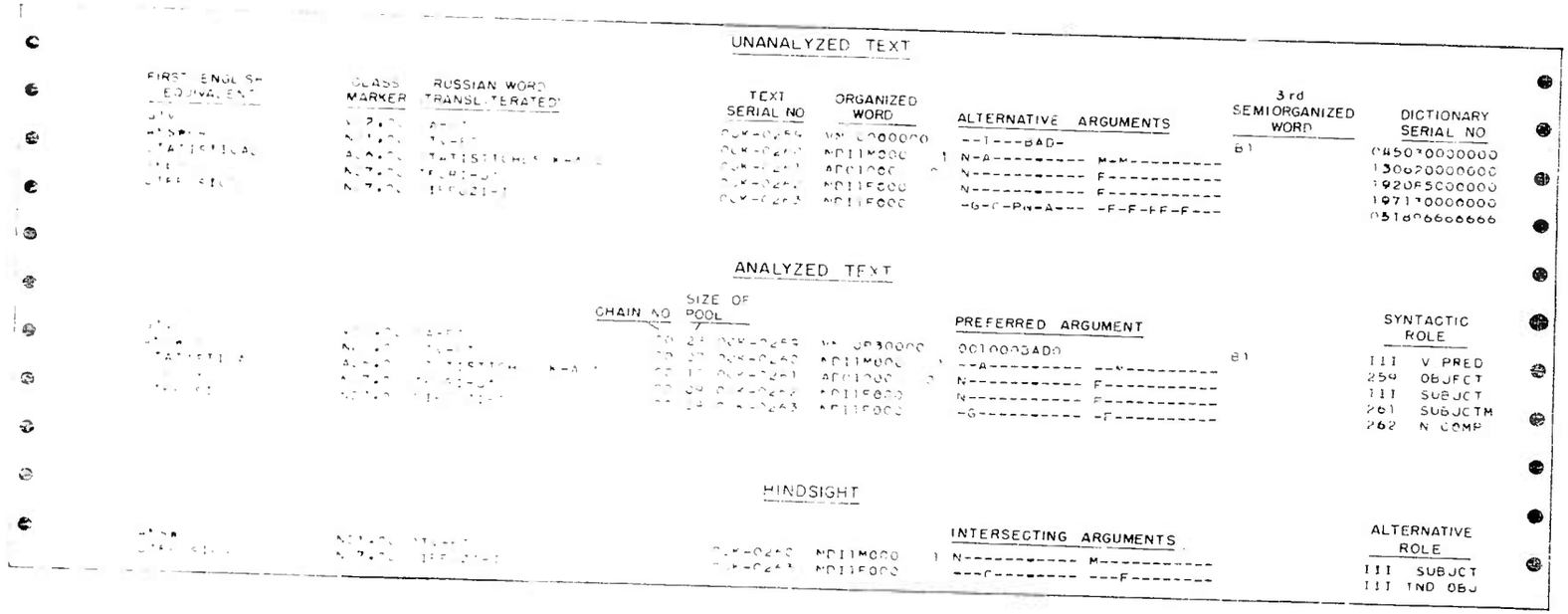


Figure 49 (continued)



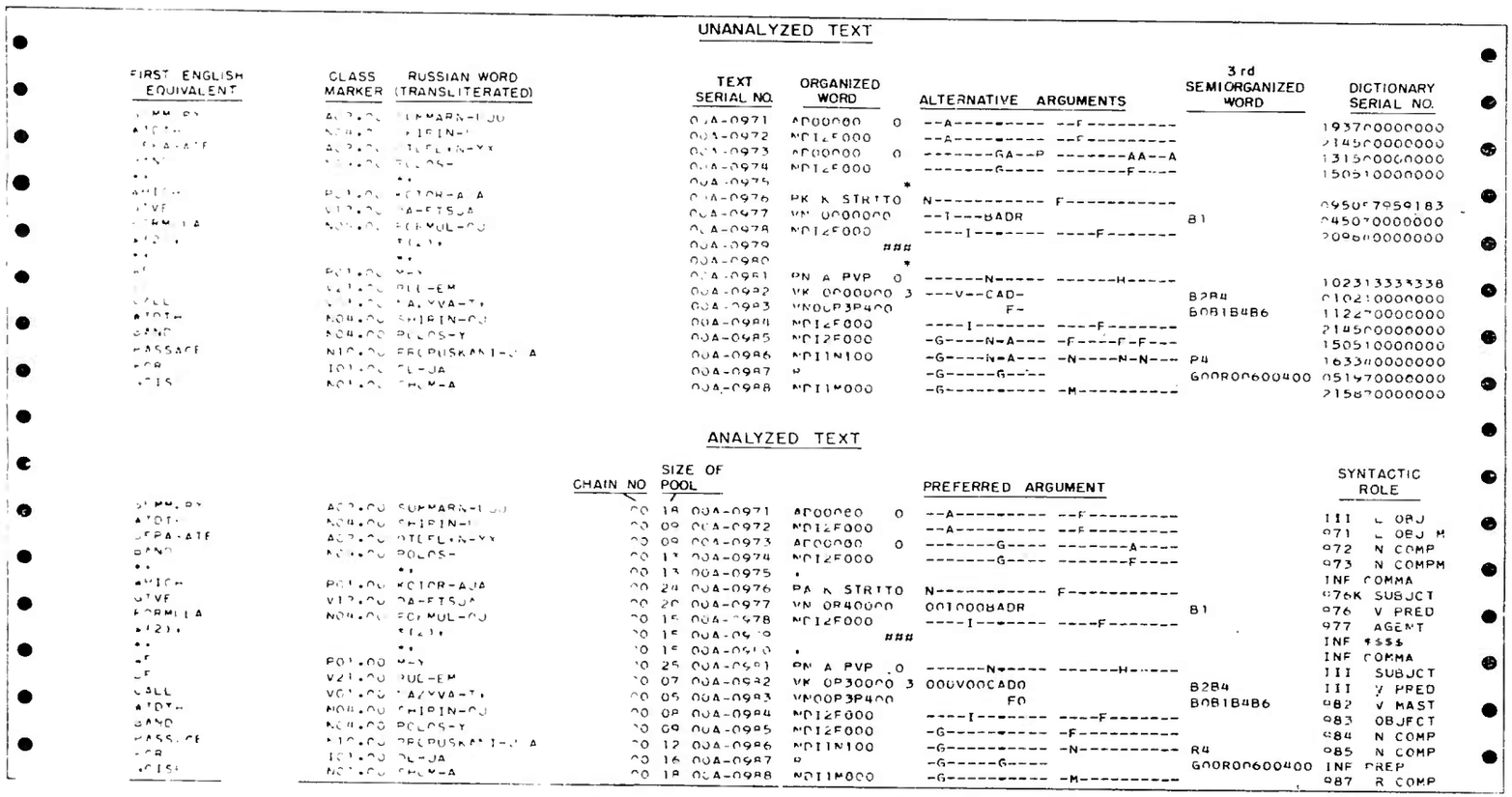
An "Object – Predicate – Subject" Clause

Figure 50



A "Predicate – Object – Subject" Clause

Figure 51



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
[illegible]	ADJ.OU	[illegible]	00A-0971	AP00060	0	--A----------	--F----------		193700000000
[illegible]	NOU.OU	[illegible]	00A-0972	MP12F000		--A----------	--F----------		214500000000
[illegible]	ADJ.OU	[illegible]	00A-0973	AP00000	0	--------GA--P	--------AA--A		131500000000
[illegible]	NOU.OU	[illegible]	00A-0974	MP12F000		-------G-----	-------F-----		150510000000
..		..	00A-0975		*				
[illegible]	PRT.OU	[illegible]	00A-0976	PR K STRITO		N----------	F----------		095067959183
[illegible]	VIP.OU	[illegible]	00A-0977	VP 0P00000		--I---BADR		B1	045070000000
[illegible]	NOU.OU	[illegible]	00A-0978	MP12F000		----I-------	----F-------		209600000000
[illegible]		[illegible]	00A-0979		###				
..		..	00A-0980		*				
[illegible]	PRT.OU	[illegible]	00A-0981	PN A PVP	0	------N-----	------H-----		102313333338
[illegible]	VIP.OU	[illegible]	00A-0982	VK 0P00000	3	---V--CAD-		B2B4	010210000000
[illegible]	VNO.OU	[illegible]	00A-0983	VNOOP3P400		F-		B0B1B4B6	112670000000
[illegible]	NOU.OU	[illegible]	00A-0984	MP12F000		----I-------	----F-------		214500000000
[illegible]	NOU.OU	[illegible]	00A-0985	MP12F000		-G----N-A---	-F----F-F---		150510000000
[illegible]	NIO.OU	[illegible]	00A-0986	MP11N100		-G----N-A---	-N----N-N---	P4	163300000000
[illegible]	IOI.OU	[illegible]	00A-0987	P		-G-----G----		G00R00600400	051470000000
[illegible]	NOI.OU	[illegible]	00A-0988	MP11M000		-G----------	-M----------		215670000000

ANALYZED TEXT

CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE
00	18	00A-0971	AP00060 0	--A----------	--F----------		111 L OBJ
00	09	00A-0972	MP12F000	--A----------	--F----------		971 L OBJ M
00	09	00A-0973	AP00000 0	--------GA---	--------A----		972 N COMP
00	13	00A-0974	MP12F000	-------G-----	-------F-----		973 N COMPM
00	13	00A-0975	.				INF COMMA
00	24	00A-0976	PR K STRITO	N----------	F----------		976K SUBJCT
00	20	00A-0977	VP 0P40000	001000BADR		B1	976 V PRED
00	15	00A-0978	MP12F000	----I-------	----F-------		977 AGENT
00	15	00A-0979		###			INF $$$$
00	15	00A-0910	.				INF COMMA
00	25	00A-0981	PN A PVP 0	------N-----	------H-----		111 SUBJCT
00	07	00A-0982	VK 0P30000 3	000V00CAD0		B2B4	111 V PRED
00	05	00A-0983	VN00P3P400	F0		B0B1B4B6	982 V MAST
00	08	00A-0984	MP12F000	----I-------	----F-------		983 OBJECT
00	09	00A-0985	MP12F000	-G-----------	-F----------		984 N COMP
00	12	00A-0986	MP11N100	-G-----------	-N----------	R4	985 N COMP
00	16	00A-0987	P	-G-----G-----		G00R00600400	INF PREP
00	18	00A-0988	MP11M000	-G-----------	-M----------		987 R COMP

A Clause with Two Objects

Figure 52

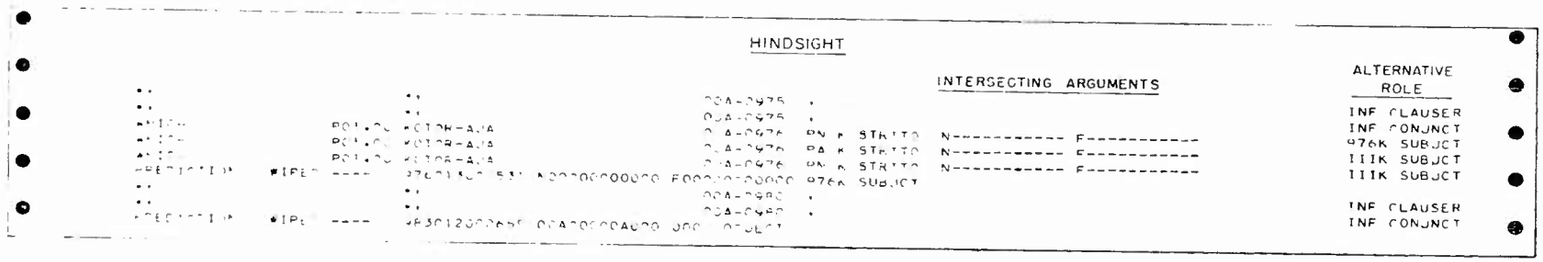
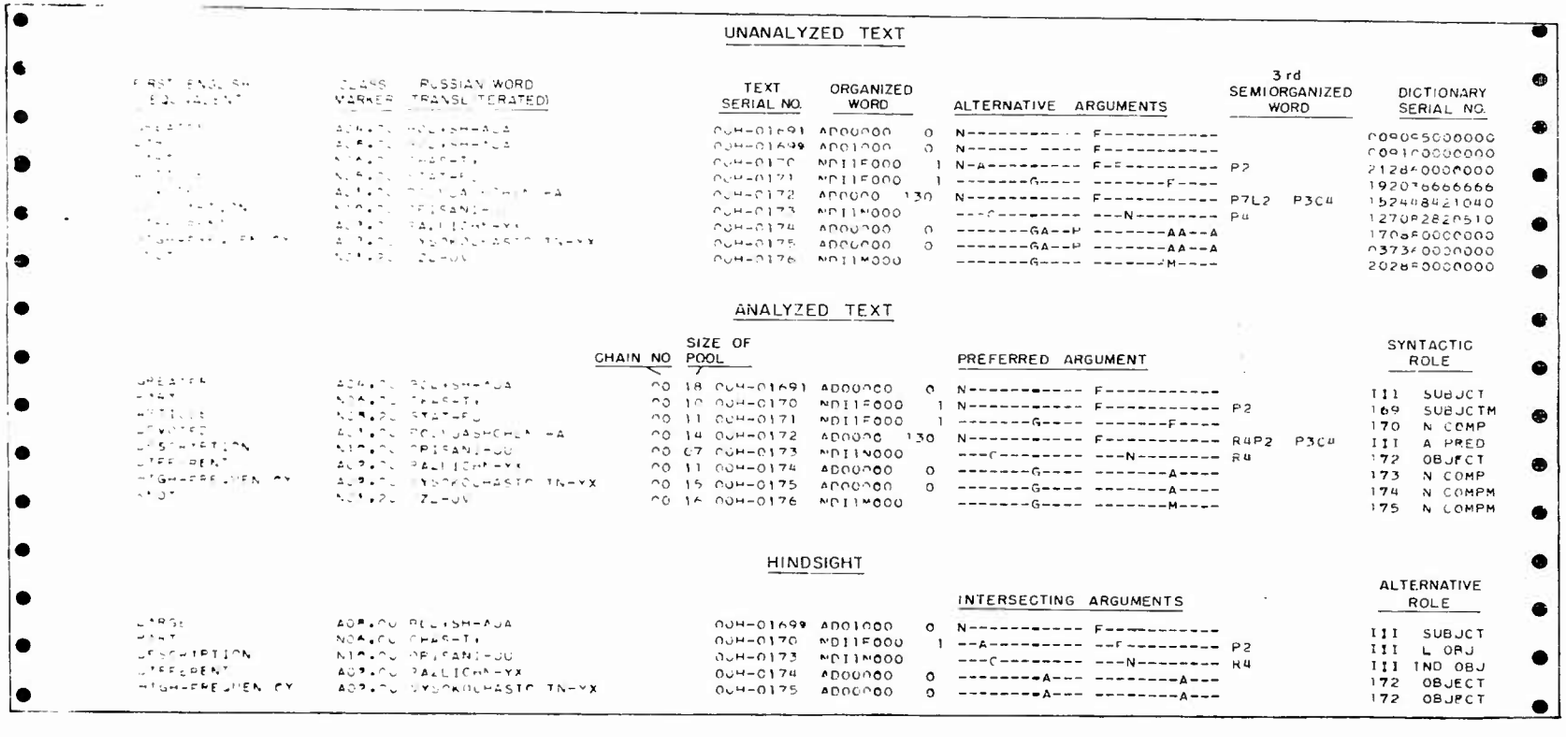


Figure 52 (continued)



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD TRANSLITERATED	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD		DICTIONARY SERIAL NO.
[illegible]	ADA,PL	BOLXSHAJA	00H-01691	AD00000	0	N---------- F----------			0090650000000
[illegible]	ADA,PL	BOLXSHIE	00H-01699	AD01000	0	N---------- F----------			0091000000000
[illegible]	NOA,PL	CHASTI	00H-0170	ND11F000	1	N-A--------- F-F---------	P2		2128400000000
[illegible]	NOA,PL	STATEJ	00H-0171	ND11F000	1	-------G---- -------F----			1920306666666
[illegible]	ADA,PL	POLUAKTIVNA-YA	00H-0172	AD00000 130		N---------- F----------	P7L2	P3C4	1524884210400
[illegible]	NOA,PL	OPISANIJ	00H-0173	ND11N000		---C------- ---N--------	P4		1270828260510
[illegible]	ADA,PL	RALICHN-YX	00H-0174	AD00000	0	-------GA--P -------AA--A			1706800000000
[illegible]	ADA,PL	VSEXOLOGASTO TN-YX	00H-0175	AD00000	0	-------GA--P -------AA--A			0373400000000
[illegible]	NOA,PL	ZLOV	00H-0176	ND11M000		-------G---- -------M----			2028600000000

ANALYZED TEXT

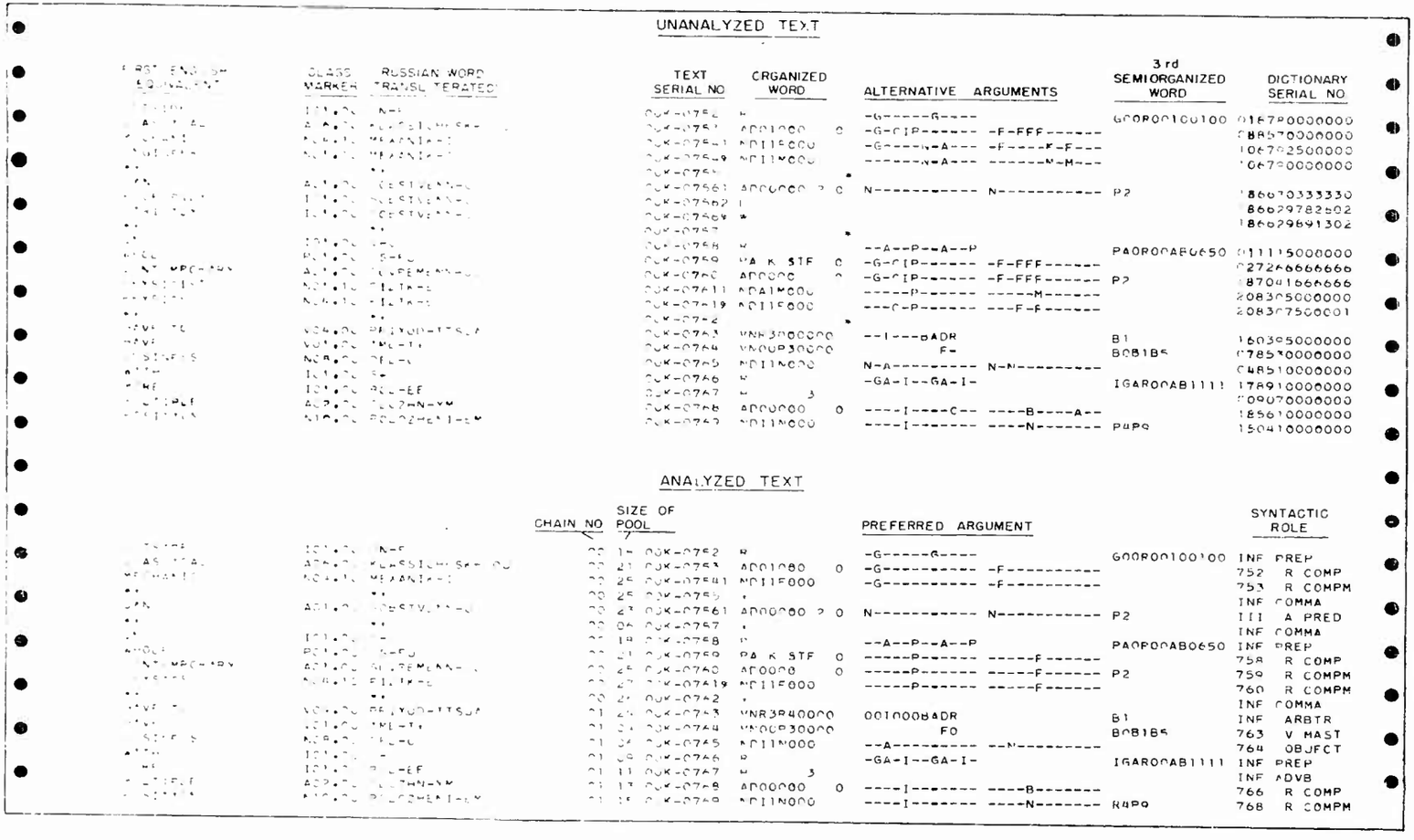
	CLASS MARKER	CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE	
GREATER	ADA,PL	00	18	00H-01691	AD00000 0	N---------- F----------			111	SUBJCT
PART	NOA,PL	00	10	00H-0170	ND11F000 1	N---------- F----------	P2		169	SUBJCTM
[illegible]	NOA,PL	00	11	00H-0171	ND11F000 1	-------G---- -------F----			170	N COMP
[illegible]	ADA,PL	00	14	00H-0172	AD00000 130	N---------- F----------	R4P2	P3C4	111	A PRED
DESCRIPTION	NOA,PL	00	67	00H-0173	ND11N000	---C------- ---N--------	R4		172	OBJECT
DIFFERENT	ADA,PL	00	11	00H-0174	AD00000 0	-------G---- -------A----			173	N COMP
HIGH-FREQUENCY	ADA,PL	00	15	00H-0175	AD00000 0	-------G---- -------A----			174	N COMPM
NOT	NOA,PL	00	16	00H-0176	ND11M000	-------G---- -------M----			175	N COMPM

HINDSIGHT

				INTERSECTING ARGUMENTS			ALTERNATIVE ROLE	
LARGE	ADA,PL	BOLXSHAJA	00H-01699	AD01000 0	N---------- F----------		111	SUBJCT
PART	NOA,PL	CHASTI	00H-0170	ND11F000 1	--A--------- --F---------	P2	111	L OBJ
DESCRIPTION	NOA,PL	OPISANIJU	00H-0173	ND11N000	---C------- ---N--------	R4	111	IND OBJ
DIFFERENT	ADA,PL	RALICHN-YX	00H-0174	AD00000 0	--------A--- --------A---		172	OBJECT
HIGH-FREQUENCY	ADA,PL	VSEXOLOGASTO TN-YX	00H-0175	AD00000 0	--------A--- --------A---		172	OBJECT

A Clause with a Short-form Adjective Predicate Head

Figure 53



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD TRANSLITERATED	TEXT SERIAL NO	ORGANIZED WORD		ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO
[illegible]	[illegible]	N-F	00K-07562	N		-G-----G----		G00R00100100	016790000000
[illegible]	[illegible]	[illegible]	00K-07563	AD01000	0	-G-CIP------	-F-FFF------		088570000000
[illegible]	[illegible]	MEANING	00K-07564	ND11F000		-G-----N-A---	-F----F-F---		106782500000
[illegible]	[illegible]	MEANING	00K-07565	ND11M000		-------N-A---	------N-M---		106780000000
**		**	00K-07566		*				
[illegible]	[illegible]	[illegible]	00K-07567	[illegible]	0	N----------	N----------	P2	186670333330
[illegible]	[illegible]	[illegible]	00K-07568						186629782502
**		**	00K-07569	*					186629691302
[illegible]	[illegible]	[illegible]	00K-07570		*				
[illegible]	[illegible]	[illegible]	00K-07571	N		--A--P--A--P		PA0R00AB0650	011115000000
[illegible]	[illegible]	[illegible]	00K-07572	PA K STF	0	-G-CIP------	-F-FFF------		027266666666
[illegible]	[illegible]	[illegible]	00K-07573	AD0000	0	-G-CIP------	-F-FFF------	P2	187041666666
[illegible]	[illegible]	[illegible]	00K-07574	ND1M000		-----P------	-----M------		208305000000
[illegible]	[illegible]	[illegible]	00K-07575	ND11F000		---C-P------	---F-F------		208307500001
**		**	00K-07576		*				
[illegible]	[illegible]	[illegible]	00K-07577	VNR3P00000		--I---BADR		B1	160305000000
[illegible]	[illegible]	[illegible]	00K-07578	VN0QP30000		F-		B0B1B5	078530000000
[illegible]	[illegible]	[illegible]	00K-07579	ND11N000		N-A----------	N-N----------		048510000000
[illegible]	[illegible]	[illegible]	00K-07580	N		-GA-I--GA-I-		IGAR00AB1111	178910000000
[illegible]	[illegible]	[illegible]	00K-07581	N	3				209070000000
[illegible]	[illegible]	[illegible]	00K-07582	AD00000	0	----I----C--	----B----A--		185610000000
[illegible]	[illegible]	[illegible]	00K-07583	ND11N000		----I-------	----N-------	P4P0	150410000000

ANALYZED TEXT

	CLASS MARKER	CHAIN NO	SIZE OF POOL	TEXT SERIAL NO	ORGANIZED WORD		PREFERRED ARGUMENT			SYNTACTIC ROLE
[illegible]	[illegible]	00	14	00K-07562	N		-G-----G----		G00R00100100	INF PREP
[illegible]	[illegible]	00	21	00K-07563	AD01000	0	-G----------	-F----------		752 R COMP
[illegible]	[illegible]	00	25	00K-07564	ND11F000		-G----------	-F----------		753 R COMPM
**		00	25	00K-07565	*					INF COMMA
[illegible]	[illegible]	00	27	00K-07566	AD0000	0	N----------	N----------	P2	III A PRED
**		00	04	00K-07567	*					INF COMMA
[illegible]	[illegible]	00	18	00K-07568	N		--A--P--A--P		PA0R00AB0650	INF PREP
[illegible]	[illegible]	00	21	00K-07569	PA K STF	0	-----P------	-----F------		758 R COMP
[illegible]	[illegible]	00	25	00K-07570	AD0000	0	-----P------	-----F------	P2	759 R COMPM
[illegible]	[illegible]	00	27	00K-07571	ND11F000		-----P------	-----F------		760 R COMPM
**		00	24	00K-07572	*					INF COMMA
[illegible]	[illegible]	01	24	00K-07573	VNR3P40000		001000BADR		B1	INF ARBTR
[illegible]	[illegible]	01	24	00K-07574	VN0QP30000		F0		B0B1B5	763 V MAST
[illegible]	[illegible]	01	24	00K-07575	ND11N000		--A----------	--N----------		764 OBJFCT
[illegible]	[illegible]	01	06	00K-07576	N		-GA-I--GA-I-		IGAR00AB1111	INF PREP
[illegible]	[illegible]	01	11	00K-07577	N	3				INF ADVB
[illegible]	[illegible]	01	13	00K-07578	AD00000	0	----I-------	----B-------		766 R COMP
[illegible]	[illegible]	01	16	00K-07579	ND11N000		----I-------	----N-------	R4P0	768 R COMPM

An Analysis of a Short-form Adjective-adverb Homograph

Figure 54

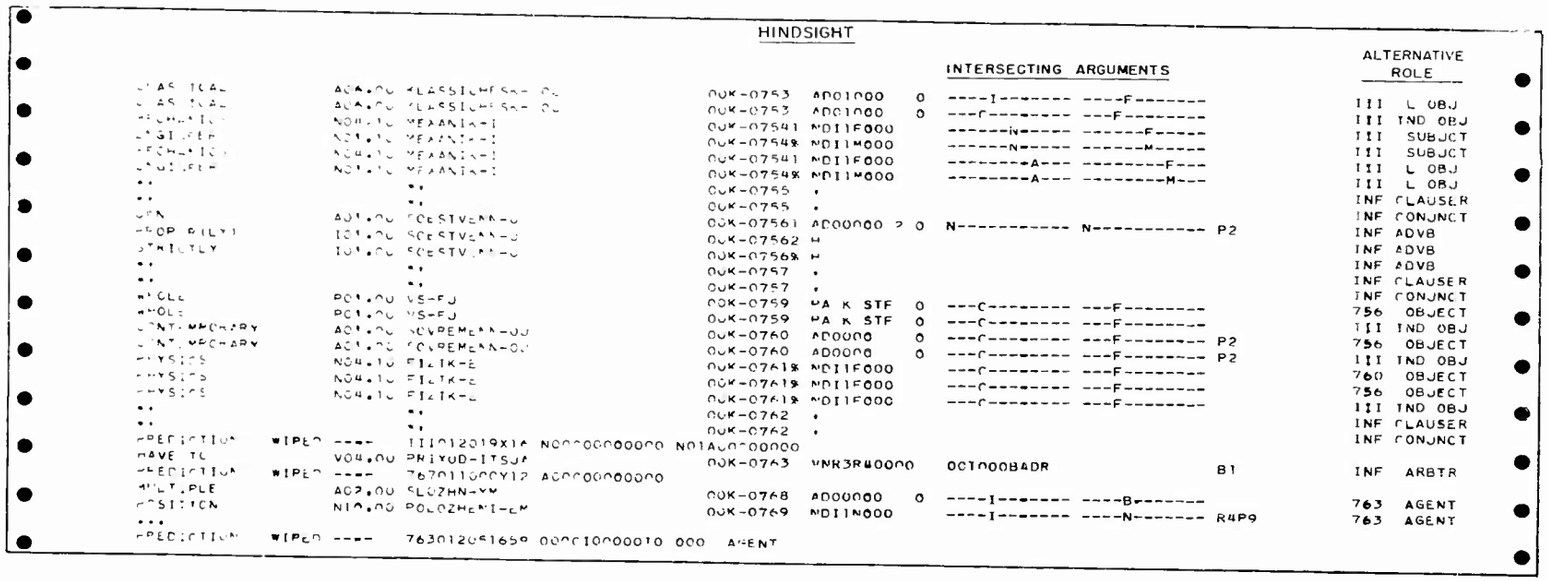
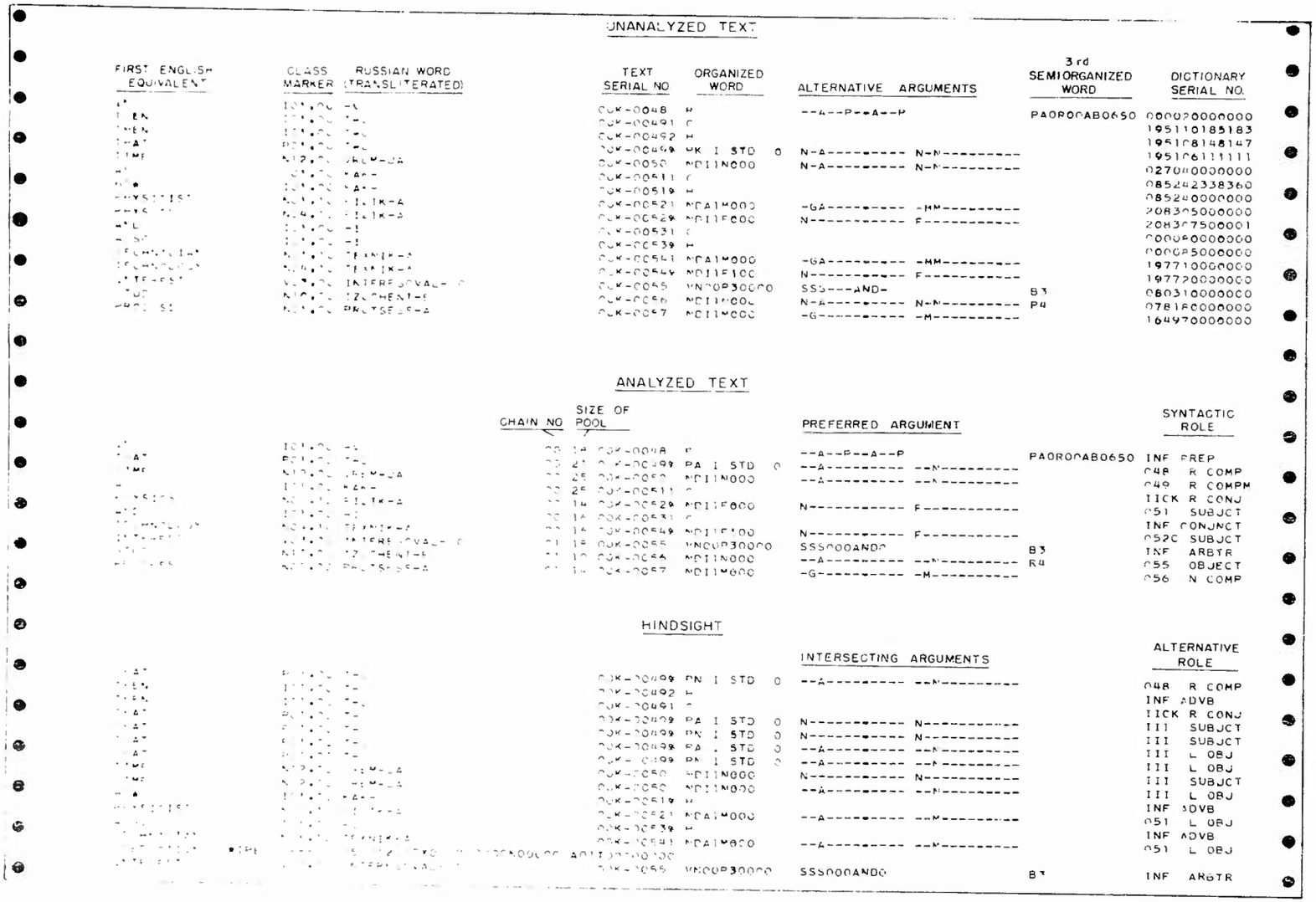
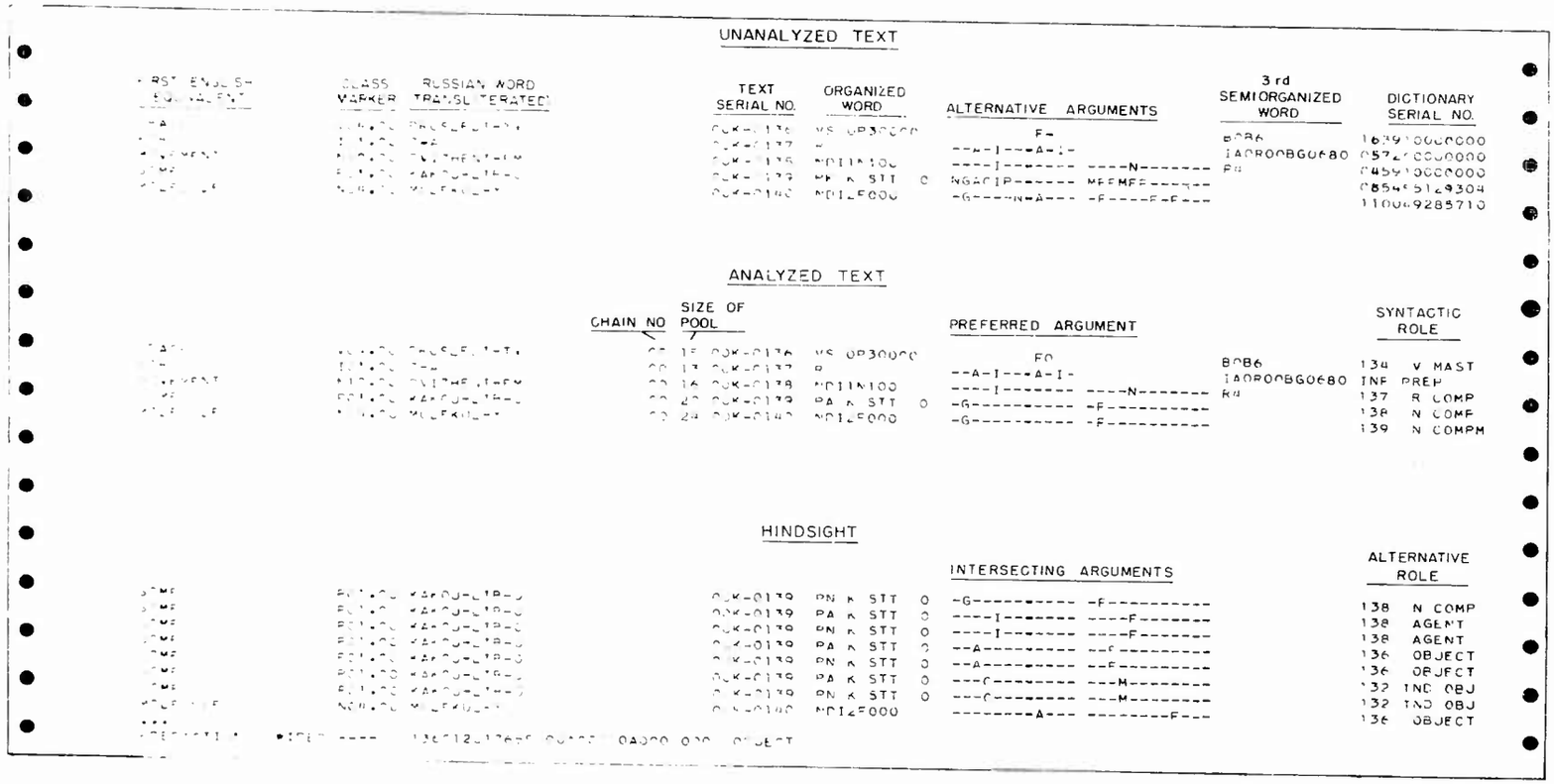


Figure 54 (continued)



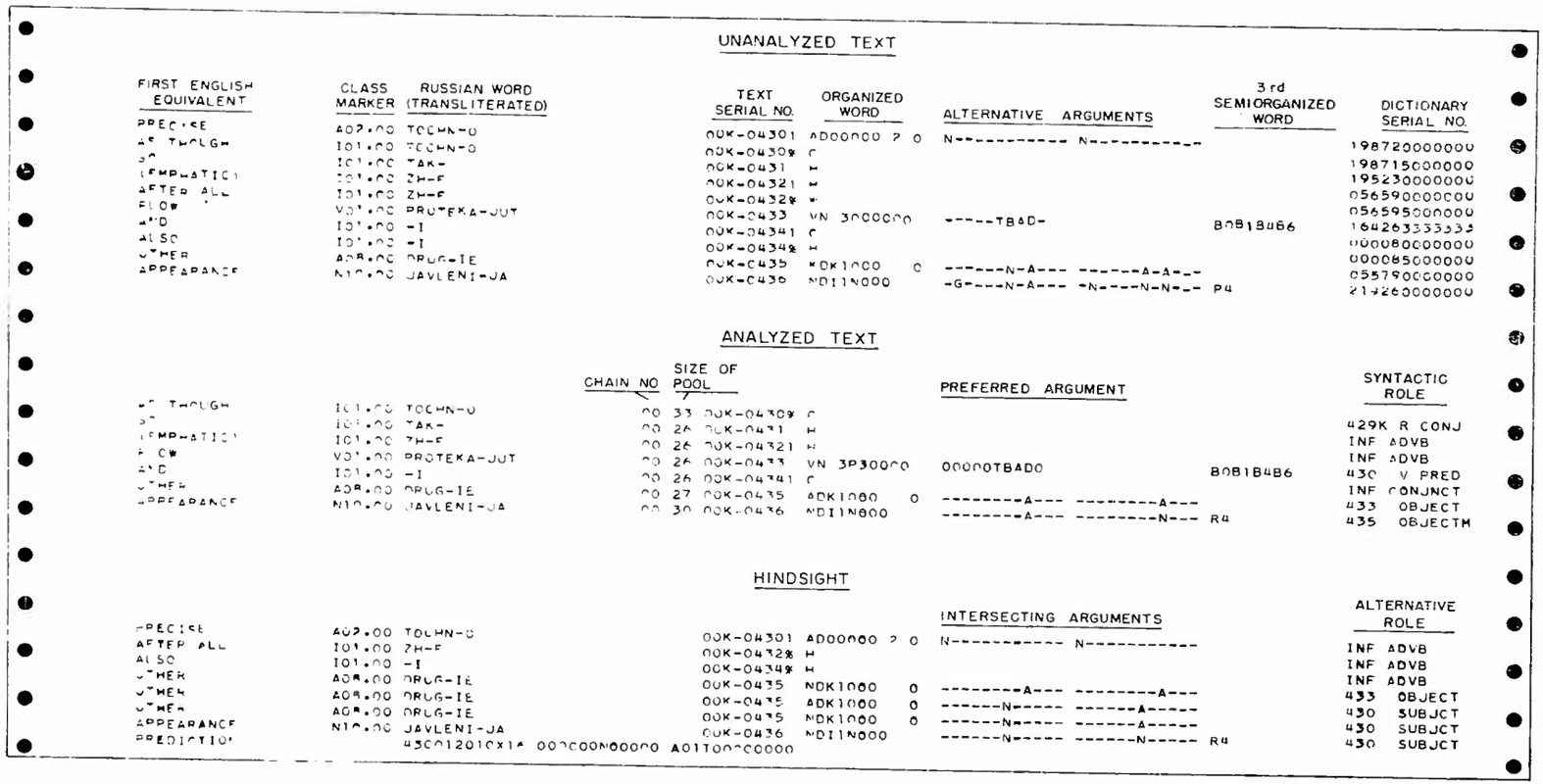
An Analysis with Subject-object Ambiguity

Figure 55



An Analysis with an Optional Object Prediction

Figure 56



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
PRECISE	A02.00	TOCHN-O	00K-04301	AD00000 2 0	N---------- N----------		198720000000
AS THOUGH	I01.00	TOCHN-O	00K-0430*	C			198715000000
SO	I01.00	TAK-	00K-0431	H			195230000000
(EMPHATIC)	I01.00	ZH-E	00K-04321	H			056590000000
AFTER ALL	I01.00	ZH-E	00K-0432*	H			056595000000
FLOW	V01.00	PROTEKA-JUT	00K-0433	VN 3000000	-----TBADO-	B0B1B4B6	164263333333
AND	I01.00	-I	00K-04341	C			000080000000
ALSO	I01.00	-I	00K-0434*	H			000085000000
OTHER	A08.00	DRUG-IE	00K-0435	KDK1000 0	---A---N-A--- ------A-A--		055790000000
APPEARANCE	N10.00	JAVLENI-JA	00K-0436	NDI1N000	-G----N-A--- -N----N-N--	P4	219260000000

ANALYZED TEXT

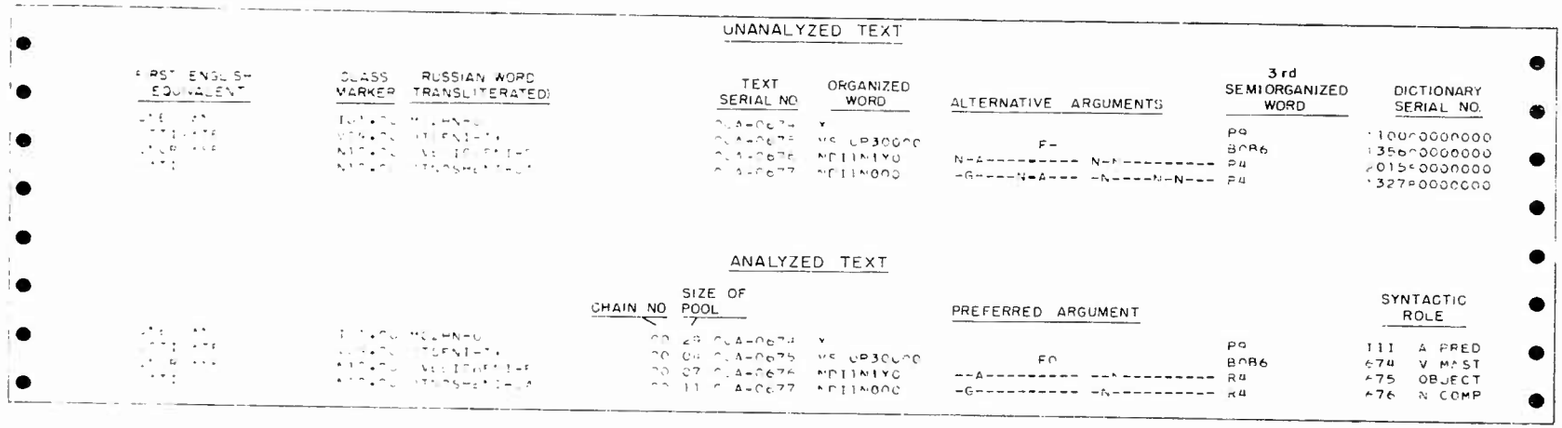
		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
AS THOUGH	I01.00 TOCHN-O	00	33	00K-0430*	C			429K R CONJ
SO	I01.00 TAK-	00	26	00K-0431	H			INF ADVB
(EMPHATIC)	I01.00 ZH-E	00	26	00K-04321	H			INF ADVB
FLOW	V01.00 PROTEKA-JUT	00	26	00K-0433	VN 3P30000	00000TBADO	B0B1B4B6	430 V PRED
AND	I01.00 -I	00	26	00K-04341	C			INF CONJNCT
OTHER	A08.00 DRUG-IE	00	27	00K-0435	ADK1000 0	--------A--- --------A---		433 OBJECT
APPEARANCE	N10.00 JAVLENI-JA	00	30	00K-0436	NDI1N000	--------A--- --------N---	R4	435 OBJECTM

HINDSIGHT

				INTERSECTING ARGUMENTS			ALTERNATIVE ROLE
PRECISE	A02.00 TOCHN-O	00K-04301	AD00000 2 0	N---------- N----------			INF ADVB
AFTER ALL	I01.00 ZH-E	00K-0432*	H				INF ADVB
ALSO	I01.00 -I	00K-0434*	H				INF ADVB
OTHER	A08.00 DRUG-IE	00K-0435	NDK1000 0	--------A--- --------A---			433 OBJECT
OTHER	A08.00 DRUG-IE	00K-0435	ADK1000 0	------N----- ------A-----			430 SUBJCT
OTHER	A08.00 DRUG-IE	00K-0435	NDK1000 0	------N----- ------A-----			430 SUBJCT
APPEARANCE	N10.00 JAVLENI-JA	00K-0436	NDI1N000	------N----- ------N-----	R4		430 SUBJCT
PREDICTIO	45C012010X1A 000C00N00000	A01T000C0000					

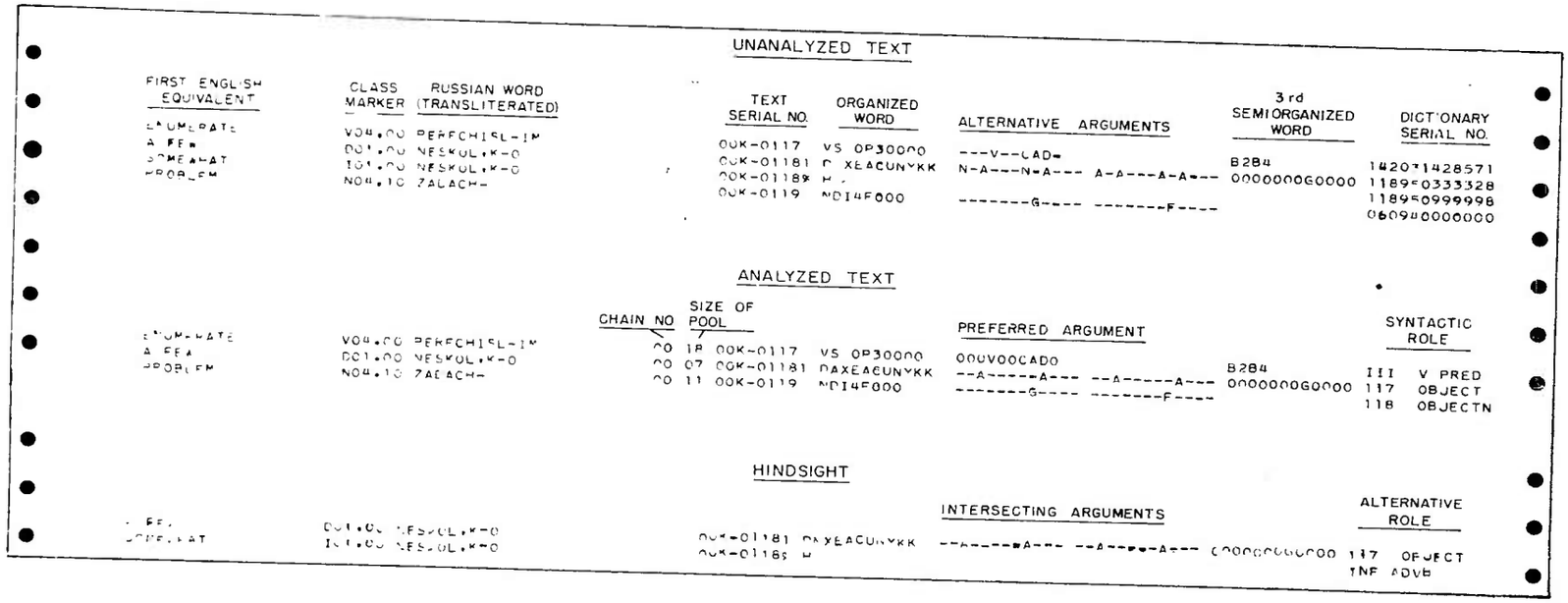
A Clause with No Object

Figure 57



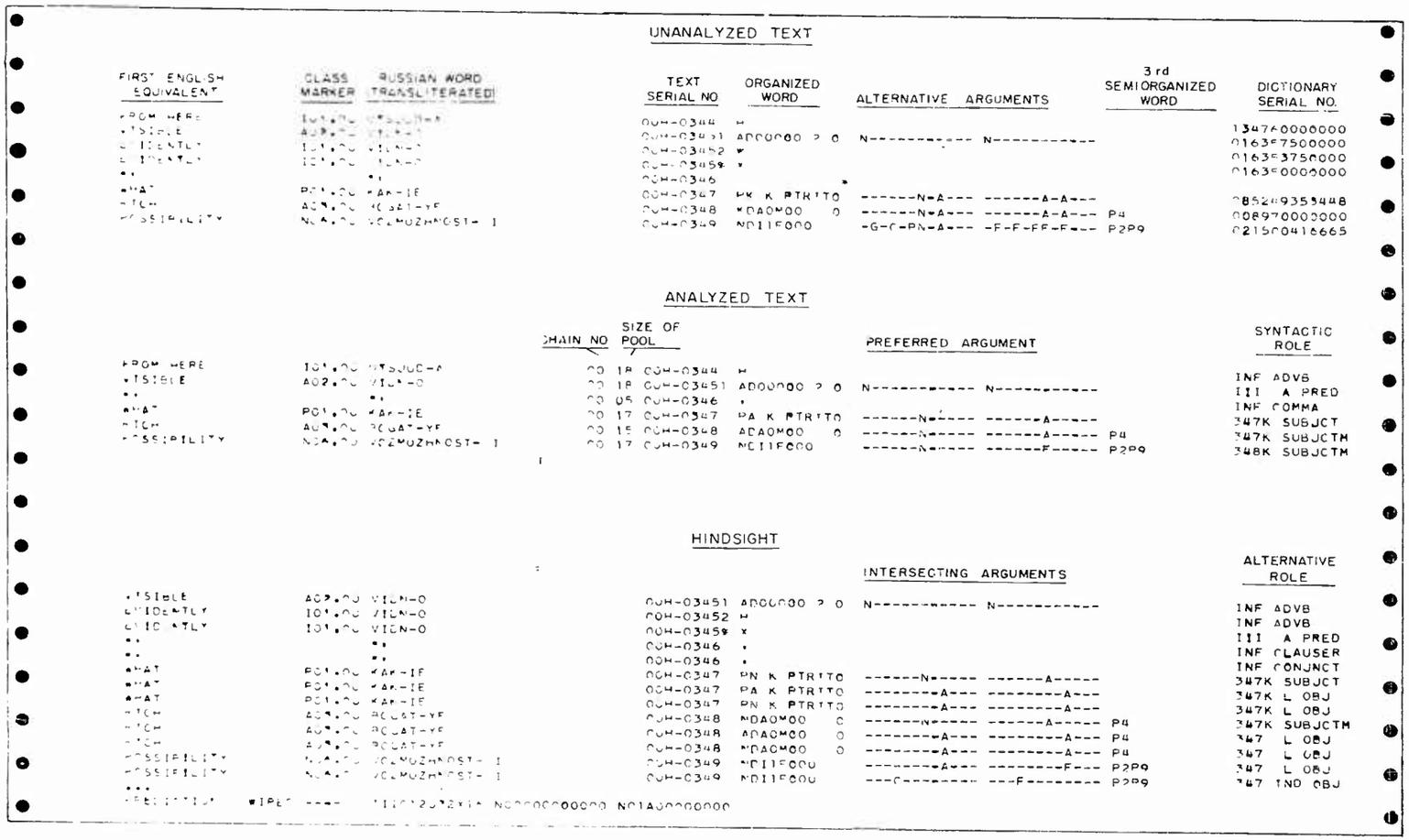
A Clause with an Impersonal Predicate Head

Figure 58



A Clause with No Explicit Subject and a First Person Plural Predicate Head

Figure 59



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD TRANSLITERATED	TEXT SERIAL NO	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
FROM HERE	IO1.OO	*PSJUD-A	00H-0344	H			
VISIBLE	AO2.OO	VIDN-O	00H-03451	AD00000 2 0	N---------- N----------		13476000000
EVIDENTLY	IO1.OO	VIDN-O	00H-03452	H			01635750000
EVIDENTLY	IO1.OO	VIDN-O	00H-0345*	*			01635750000
**		**	00H-0346	*			01635000000
*MAT	PO1.OO	*AK-IE	00H-0347	PK K PTRTTO	------N-A--- ------A-A---		08524935448
*TCH	AO1.OO	*OGAT-YE	00H-0348	*DAOMOO 0	------N-A--- ------A-A---	P4	00897000000
*OSSIBILITY	NOA.OO	*OZMOZHNOST- I	00H-0349	ND11F000	-G-C-PN-A--- -F-F-FF-F---	P2P9	02150416665

ANALYZED TEXT

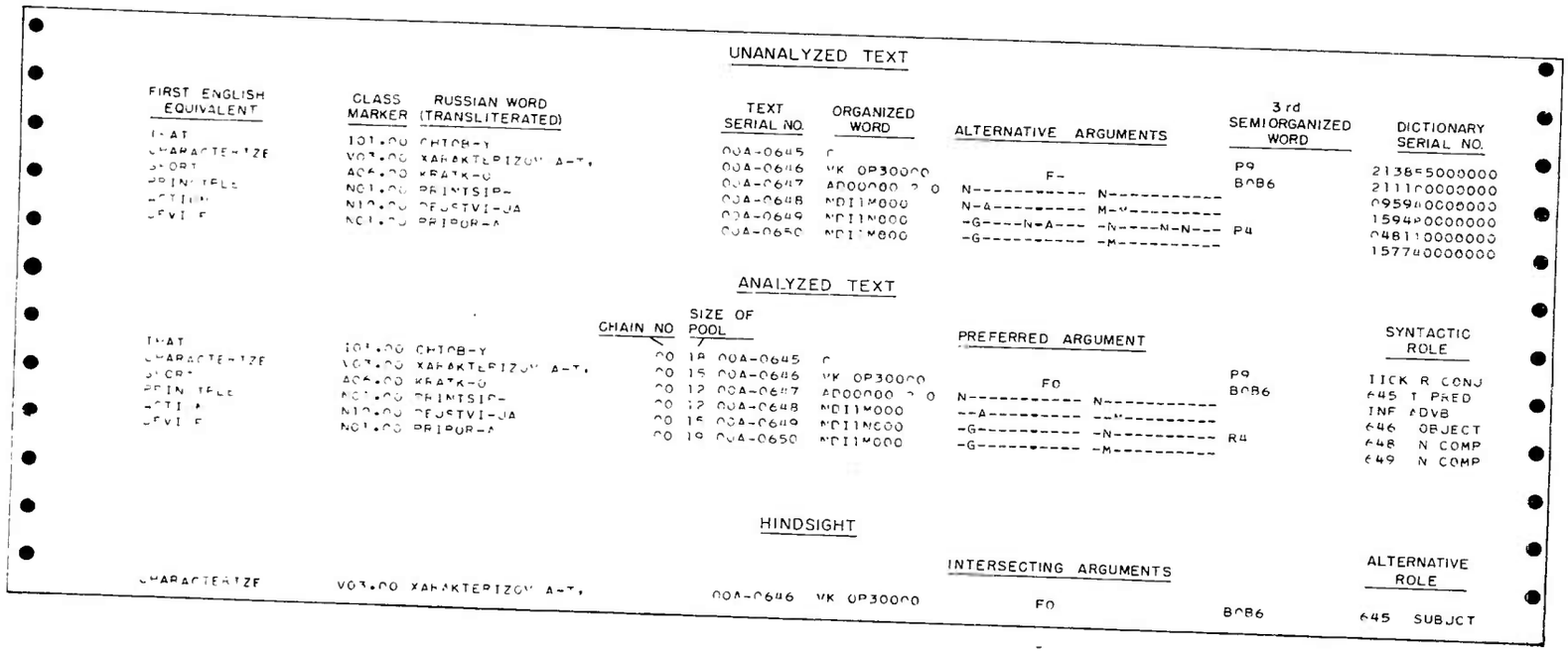
		CHAIN NO	SIZE OF POOL		PREFERRED ARGUMENT		SYNTACTIC ROLE
FROM HERE	IO1.OO *PSJUD-A	00	18	00H-0344 H			INF ADVB
VISIBLE	AO2.OO VIDN-O	00	18	00H-03451	AD00000 2 0 N---------- N----------		III A PRED
**	**	00	05	00H-0346 *			INF COMMA
*MAT	PO1.OO *AK-IE	00	17	00H-0347	PA K PTRTTO ------N-A--- ------A----		347K SUBJCT
*TCH	AO1.OO *OGAT-YE	00	15	00H-0348	ADAOM00 0 ------N------ ------A------	P4	347K SUBJCTM
*OSSIBILITY	NOA.OO *OZMOZHNOST- I	00	17	00H-0349	ND11F000 ------N------ ------F------	P2P9	348K SUBJCTM

HINDSIGHT

				INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
VISIBLE	AO2.OO VIDN-O	00H-03451	AD00000 2 0	N---------- N----------		INF ADVB
EVIDENTLY	IO1.OO VIDN-O	00H-03452	H			INF ADVB
EVIDENTLY	IO1.OO VIDN-O	00H-0345*	*			III A PRED
**	**	00H-0346	*			INF CLAUSER
**	**	00H-0346	*			INF CONJNCT
*MAT	PO1.OO *AK-IE	00H-0347	PN K PTRTTO	------N------ ------A------		347K SUBJCT
*MAT	PO1.OO *AK-IE	00H-0347	PA K PTRTTO	--------A--- ---------A---		347K L OBJ
*MAT	PO1.OO *AK-IE	00H-0347	PN K PTRTTO	--------A--- ---------A---		347K L OBJ
*TCH	AO1.OO *OGAT-YE	00H-0348	NDAOM00 0	------N------ ------A------	P4	347K SUBJCTM
*TCH	AO1.OO *OGAT-YE	00H-0348	ADAOM00 0	--------A--- ---------A---	P4	347 L OBJ
*TCH	AO1.OO *OGAT-YE	00H-0348	NDAOM00 0	--------A--- ---------A---	P4	347 L OBJ
*OSSIBILITY	NOA.OO *OZMOZHNOST- I	00H-0349	ND11F000	--------A--- ---------F---	P2P9	347 L OBJ
*OSSIBILITY	NOA.OO *OZMOZHNOST- I	00H-0349	ND11F000	---C-------- ---F---------	P2P9	347 IND OBJ
***						
*REDSTAVIT	*IPET ----	*IIO1JO*EXI*	NO000000000	NO1A00000000		

An Analysis with a Short-form Adjective-impersonal Homograph

Figure 60



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
THAT	101.00	CHTOB-Y	00A-0645	C		P9	2138#5000000
CHARACTERIZE	V03.00	XARAKTERIZOV A-T,	00A-0646	VK 0P30000	F-	B0B6	2111#0000000
SHORT	A04.00	KRATK-O	00A-0647	AD00000 ? 0	N---------- N----------		0959#0000000
PRINCIPLE	N01.00	PRINTSIP-	00A-0648	MD11M000	N-A-------- M-M---------		1594#0000000
ACTION	N10.00	DEJSTVI-JA	00A-0649	MD11N000	-G----N-A--- -N----N-N---	P4	0481#0000000
LEVIER	N01.00	PRIBOR-A	00A-0650	MD11M000	-G---------- -M----------		1577#0000000

ANALYZED TEXT

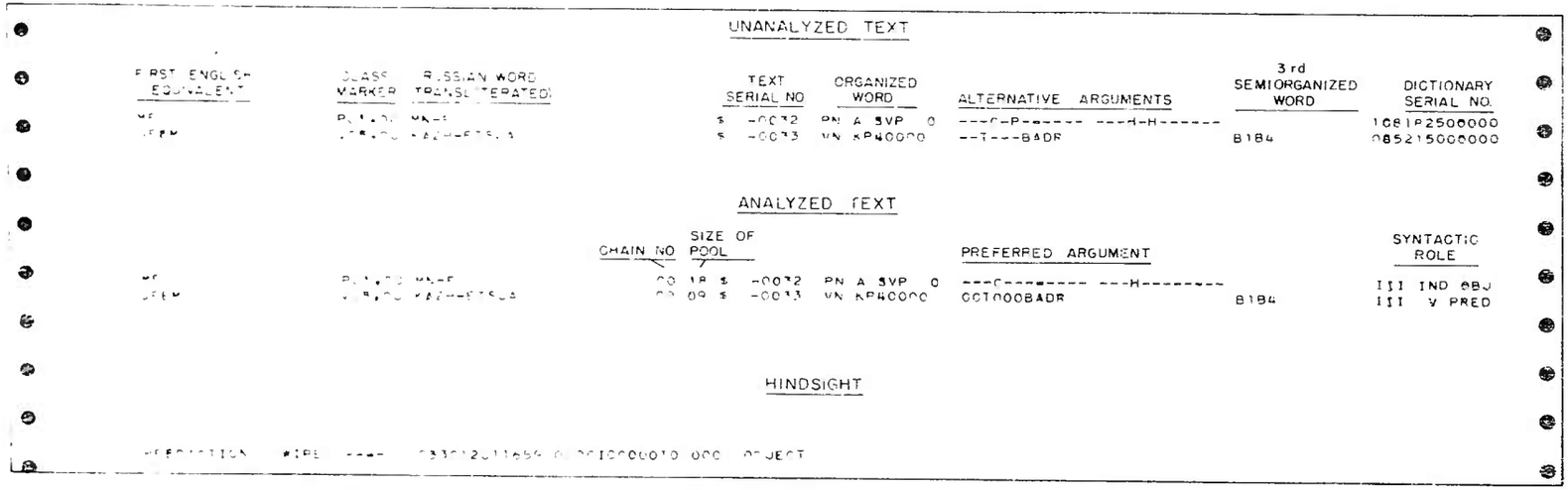
		CHAIN NO	SIZE OF POOL		PREFERRED ARGUMENT		SYNTACTIC ROLE
THAT	101.00 CHTOB-Y	20	18	00A-0645 C		P9	IICK R CONJ
CHARACTERIZE	V03.00 XARAKTERIZOV A-T,	20	15	00A-0646 VK 0P30000	FO	B0B6	645 T PRED
SHORT	A04.00 KRATK-O	20	12	00A-0647 AD00000 ? 0	N---------- N----------		INF ADVB
PRINCIPLE	N01.00 PRINTSIP-	20	12	00A-0648 MD11M000	--A-------- --M---------		646 OBJECT
ACTION	N10.00 DEJSTVI-JA	20	15	00A-0649 MD11N000	-G---------- -N----------	R4	648 N COMP
LEVIER	N01.00 PRIBOR-A	20	19	00A-0650 MD11M000	-G---------- -M----------		649 N COMP

HINDSIGHT

				INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
CHARACTERIZE	V03.00 XARAKTERIZOV A-T,	00A-0646	VK 0P30000	FO	B0B6	645 SUBJCT

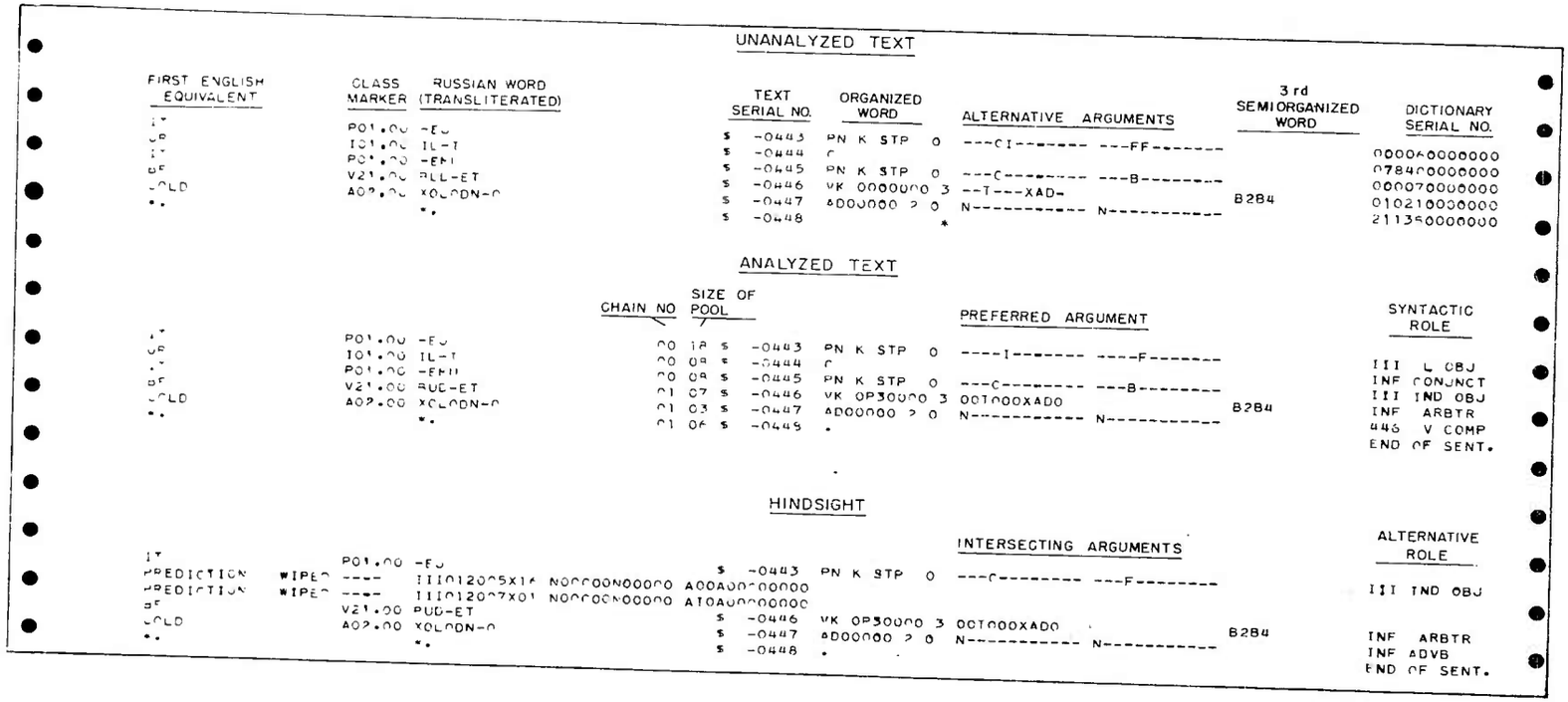
An Infinitive Predicate Head

Figure 61



A "Dative of Reference"

Figure 62



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
IT	P01.00	-EU	$ -0443	PN K STP 0	---CI-------- ---FF--------		000060000000
CB	I01.00	IL-I	$ -0444	C			078400000000
IT	P01.00	-EM	$ -0445	PN K STP 0	---C--------- ---B---------		000070000000
BE	V21.00	BLL-ET	$ -0446	VK 0000000 3	--T---XAD-	B2B4	010210000000
COLD	A02.00	XOLODN-O	$ -0447	ADOOOOOO 2 0	N---------- N----------		211350000000
*.		*.	$ -0448	*			

ANALYZED TEXT

		CHAIN NO / SIZE OF POOL				PREFERRED ARGUMENT		SYNTACTIC ROLE
IT	P01.00 -EU	00 18	$ -0443	PN K STP 0	----I-------- ----F--------			III L OBJ
CB	I01.00 IL-I	00 08	$ -0444	C				INF CONJNCT
IT	P01.00 -EM	00 09	$ -0445	PN K STP 0	---C--------- ---B---------			III IND OBJ
BE	V21.00 BUD-ET	01 07	$ -0446	VK OP30000 3	0010000XAD0	B2B4		INF ARBTR
COLD	A02.00 XOLODN-O	01 03	$ -0447	ADOOOOOO 2 0	N---------- N----------			446 V COMP
*.	*.	01 06	$ -0448	*				END OF SENT.

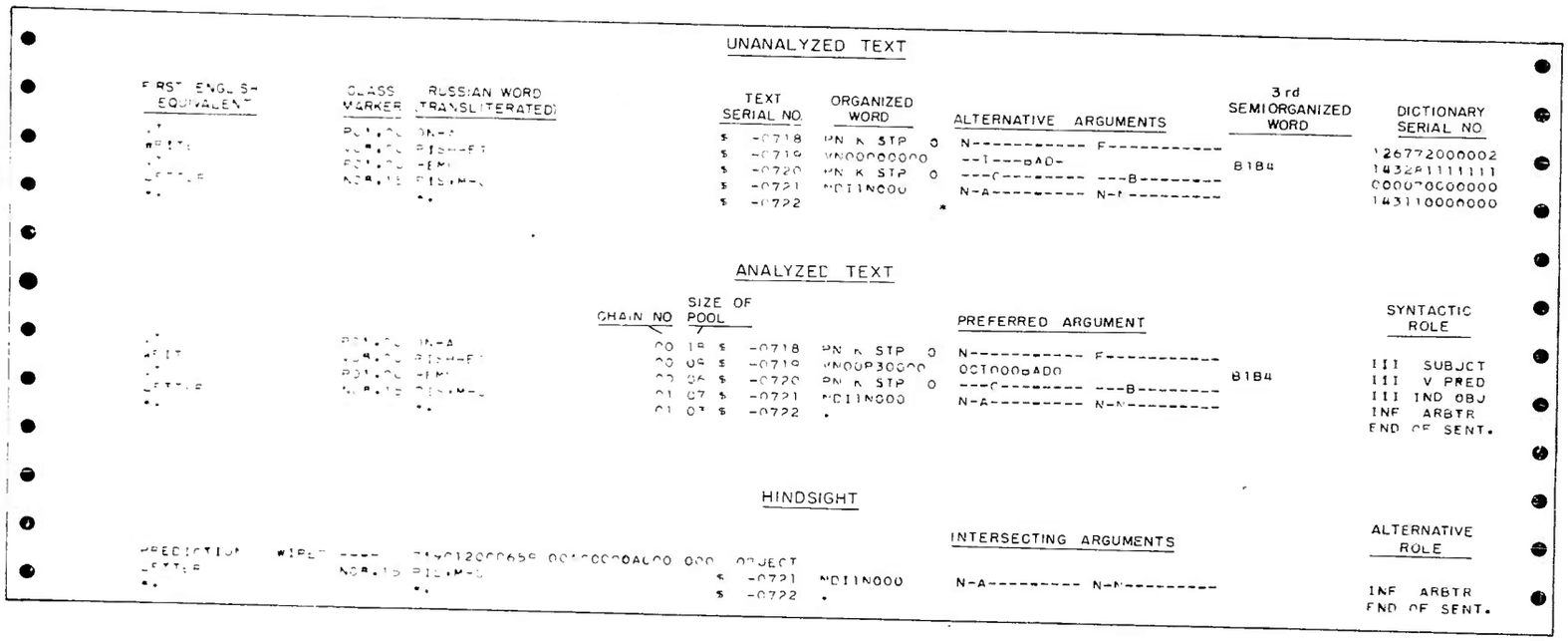
HINDSIGHT

						INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
IT		P01.00 -EU			$ -0443	PN K STP 0	---C--------- ---F---------	
PREDICTION	WIPE0	----	III012005X14	N0CC00N00000	A00A0000000			III IND OBJ
PREDICTION	WIPE0	----	III012007X01	N0CC00N00000	A10A0000000			
BE		V21.00 BUD-ET			$ -0446	VK OP30000 3	0010000XAD0	
COLD		A02.00 XOLODN-O			$ -0447	ADOOOOOO 2 0	N---------- N----------	B2B4
*.		*.			$ -0448	*		

ALTERNATIVE ROLE
INF ARBTR
INF ADVB
END OF SENT.

An Analysis with Left Object – Indirect Object Ambiguity

Figure 63



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
.	POL.PL	DA=A	$ -0718	PN K STP 0	N---------- F----------		126772000002
WRITE	VOB.PL	PISHEET	$ -0719	VN00000000	--I---bAD-	B1B4	143281111111
.	POL.PL	=EM=	$ -0720	PN K STP 0	---C--------- ---B---------		000070000000
LETTER	NOR.IS	PISHM=G	$ -0721	MDIIN000	N-A---------- N-N----------		143110000000
*.		*.	$ -0722	*			

ANALYZED TEXT

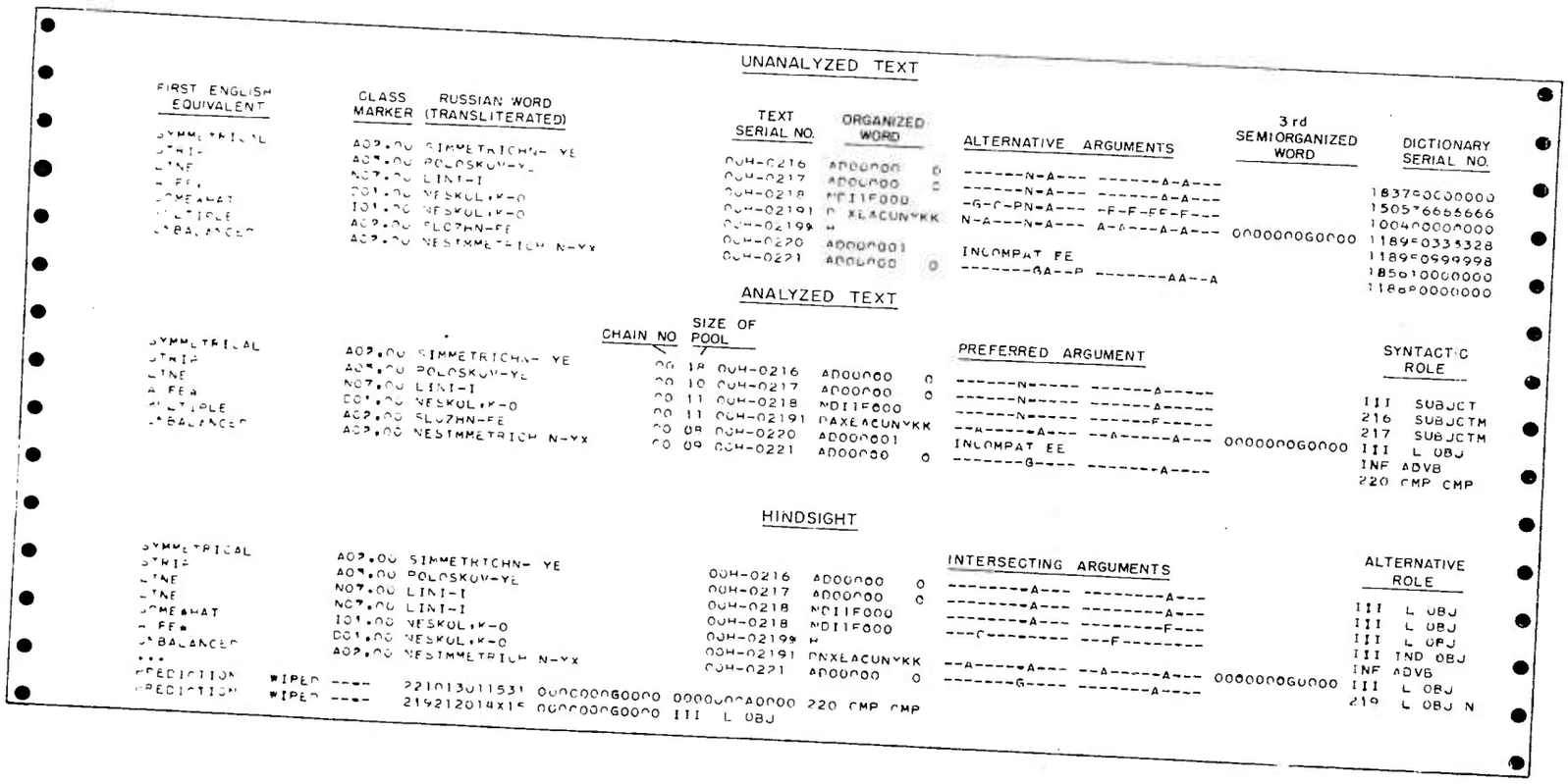
		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
.	POL.PL	DA=A	00	18 $ -0718	PN K STP 0	N---------- F----------		
WRIT	VOB.PL	PISHEET	00	05 $ -0719	VN00P30000	0CI000bADO	B1B4	III SUBJCT
.	POL.PL	=EM=	00	06 $ -0720	PN K STP 0	---C--------- ---B---------		III V PRED
LETTER	NOR.IS	PISHM=G	01	07 $ -0721	MDIIN000	N-A---------- N-N----------		III IND OBJ
*.		*.	01	07 $ -0722	*			INF ARBTR
								END OF SENT.

HINDSIGHT

					INTERSECTING ARGUMENTS	ALTERNATIVE ROLE
PREDICTION	WIPE	----	21x012000650 004000000A000 000	OBJECT		
LETTER	NOR.IS	PISHM=G	$ -0721	MDIIN000	N-A---------- N-N----------	
*.		*.	$ -0722	*		INF ARBTR
						END OF SENT.

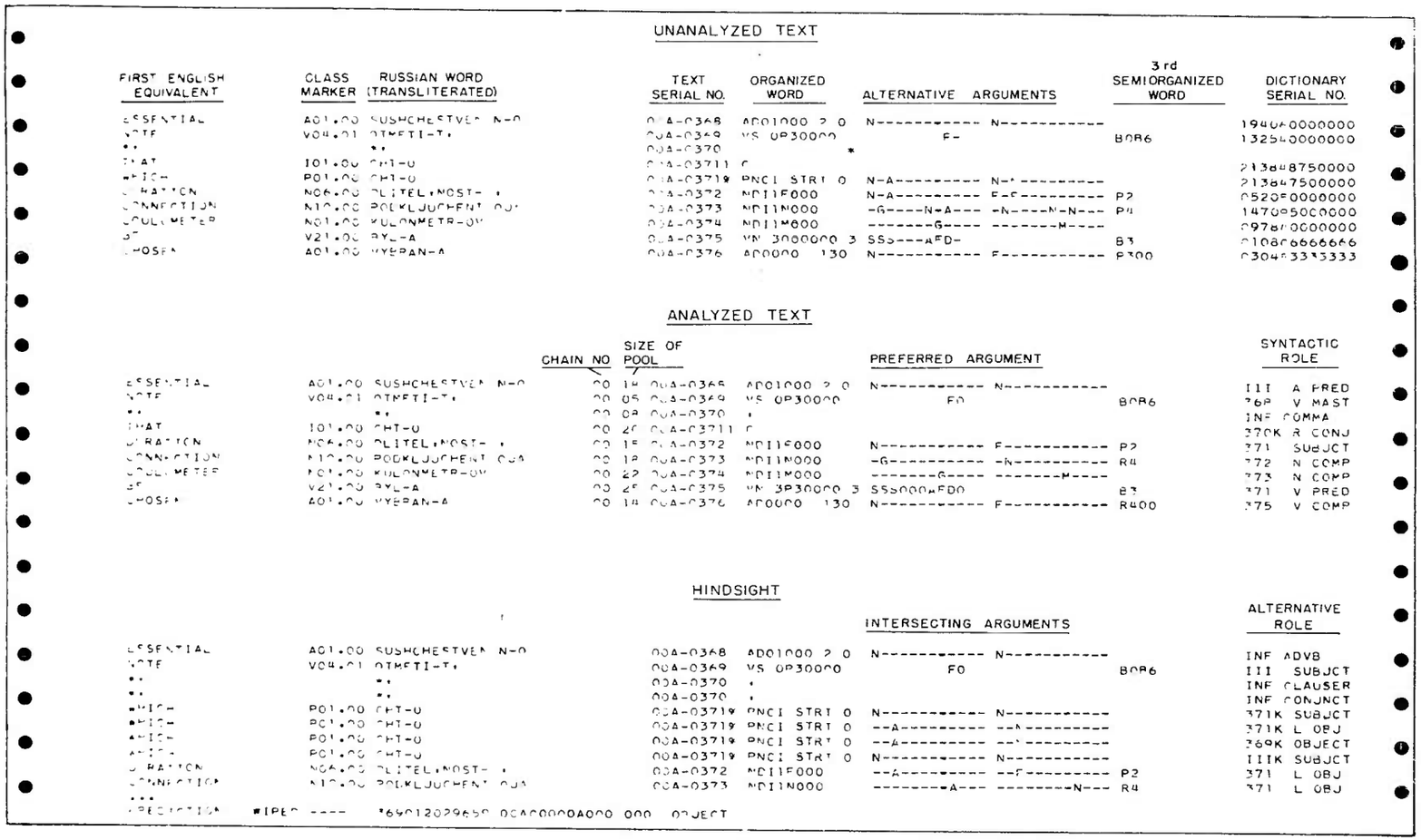
An Indirect Object

Figure 64



A Comparative Adverb Used as a Predicate Head

Figure 65



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
ESSENTIAL	A01.00	SUSHCHESTVEN N-O	00A-0368	AD01000 2 0	N---------- N----------		1940A0000000
NOTE	V04.01	OTMETI-T,	00A-0369	VS 0P30000	F-	B0B6	132540000000
**		*,	00A-0370	*			
THAT	I01.00	CHT-O	00A-03711	C			213848750000
WHICH	P01.00	CHT-O	00A-03719	PNCI STRT 0	N-A---------- N-A----------		213847500000
OPERATION	N06.00	DLITEL,NOST- ,	00A-0372	MD11F000	N-A---------- F-F----------	P2	0520F0000000
CONNECTION	N10.00	PODKLJUCHENI 00A	00A-0373	MD11N000	-G----N-A---- -N----N-N---	R4	1470950C0000
KILOMETER	N01.00	KILOMETR-OV	00A-0374	MD11M000	--------G----- --------M-----		0978A0000000
IF	V21.00	BYL-A	00A-0375	VN 3000000 3	SS----AFD-	B3	0108C6666666
CHOSEN	A01.00	VYBRAN-A	00A-0376	AP0000 130	N---------- F----------	R400	0304B3333333

ANALYZED TEXT

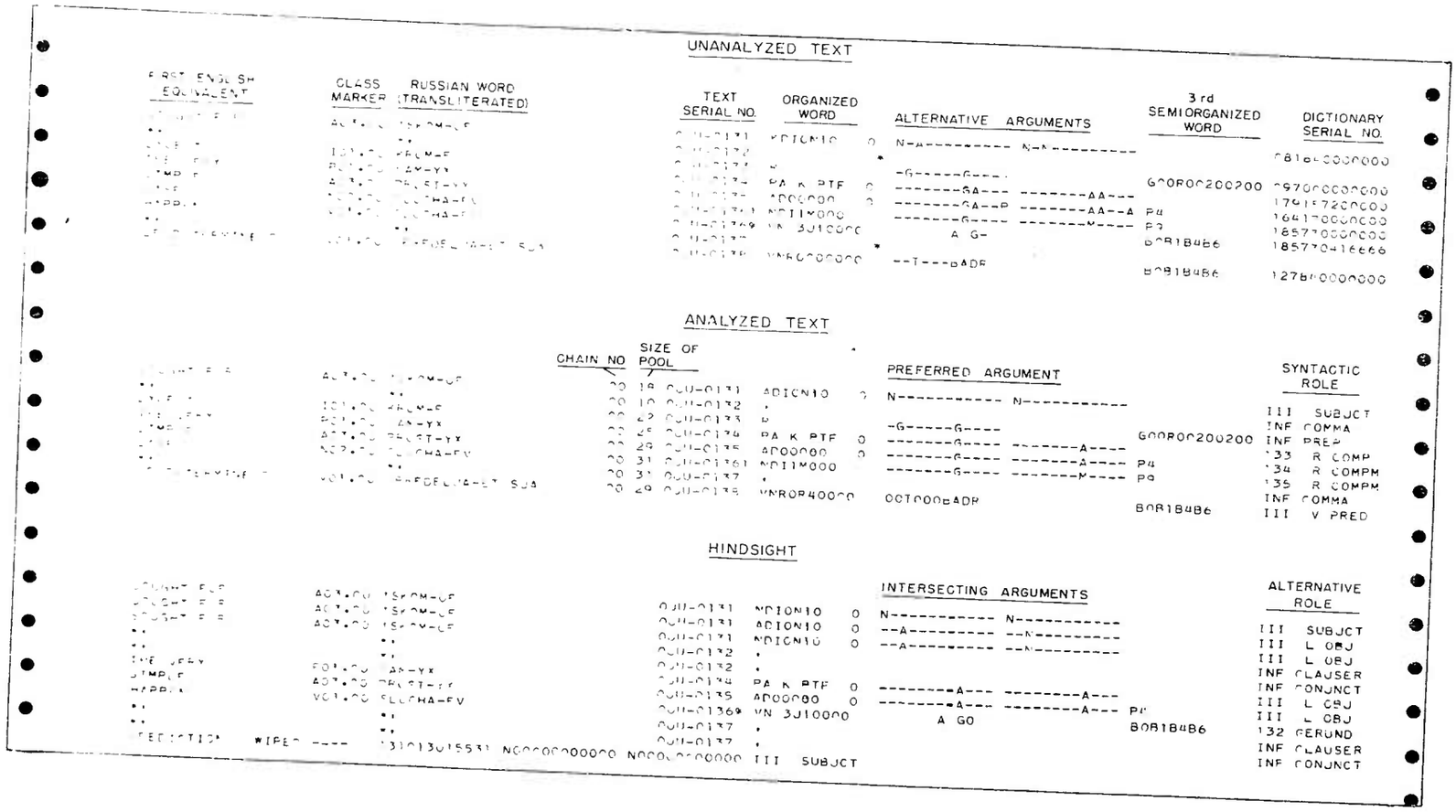
			CHAIN NO	SIZE OF POOL		PREFERRED ARGUMENT			SYNTACTIC ROLE
ESSENTIAL	A01.00	SUSHCHESTVEN N-O	00	14	00A-0368 AD01000 2 0	N---------- N----------			III A PRED
NOTE	V04.01	OTMETI-T,	00	05	00A-0369 VS 0P30000	F0		B0B6	368 V MAST
**		*,	00	08	00A-0370 ,				INF COMMA
THAT	I01.00	CHT-O	00	40	00A-03711 C				370K R CONJ
OPERATION	N06.00	DLITEL,NOST- ,	00	15	00A-0372 MD11F000	N---------- F----------		P2	371 SUBJCT
CONNECTION	N10.00	PODKLJUCHENI 00A	00	18	00A-0373 MD11N000	-G---------- -N----------		R4	372 N COMP
KILOMETER	N01.00	KILOMETR-OV	00	22	00A-0374 MD11M000	--------G----- --------M-----			373 N COMP
IF	V21.00	BYL-A	00	25	00A-0375 VN 3P30000 3	SS5000AFD0		B3	371 V PRED
CHOSEN	A01.00	VYBRAN-A	00	14	00A-0376 AP0000 130	N---------- F----------		R400	375 V COMP

HINDSIGHT

					INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
ESSENTIAL	A01.00	SUSHCHESTVEN N-O	00A-0368	AD01000 2 0	N---------- N----------		INF ADVB
NOTE	V04.01	OTMETI-T,	00A-0369	VS 0P30000	F0	B0B6	III SUBJCT
**		*,	00A-0370	,			INF CLAUSER
**		*,	00A-0370	,			INF CONJNCT
WHICH	P01.00	CHT-O	00A-03719	PNCI STRT 0	N---------- N----------		371K SUBJCT
WHICH	P01.00	CHT-O	00A-03719	PNCI STRT 0	--A---------- --A----------		371K L OBJ
WHICH	P01.00	CHT-O	00A-03719	PNCI STRT 0	--A---------- --A----------		369K OBJECT
WHICH	P01.00	CHT-O	00A-03719	PNCI STRT 0	N---------- N----------		IIIK SUBJCT
OPERATION	N06.00	DLITEL,NOST- ,	00A-0372	MD11F000	--A---------- --F----------	P2	371 L OBJ
CONNECTION	N10.00	PODKLJUCHENI 00A	00A-0373	MD11N000	--------A--- ---------N---	R4	371 L OBJ
***							
PREDICTION	WHICH ----	*6901209650 05AC0000A000 000 OBJECT					

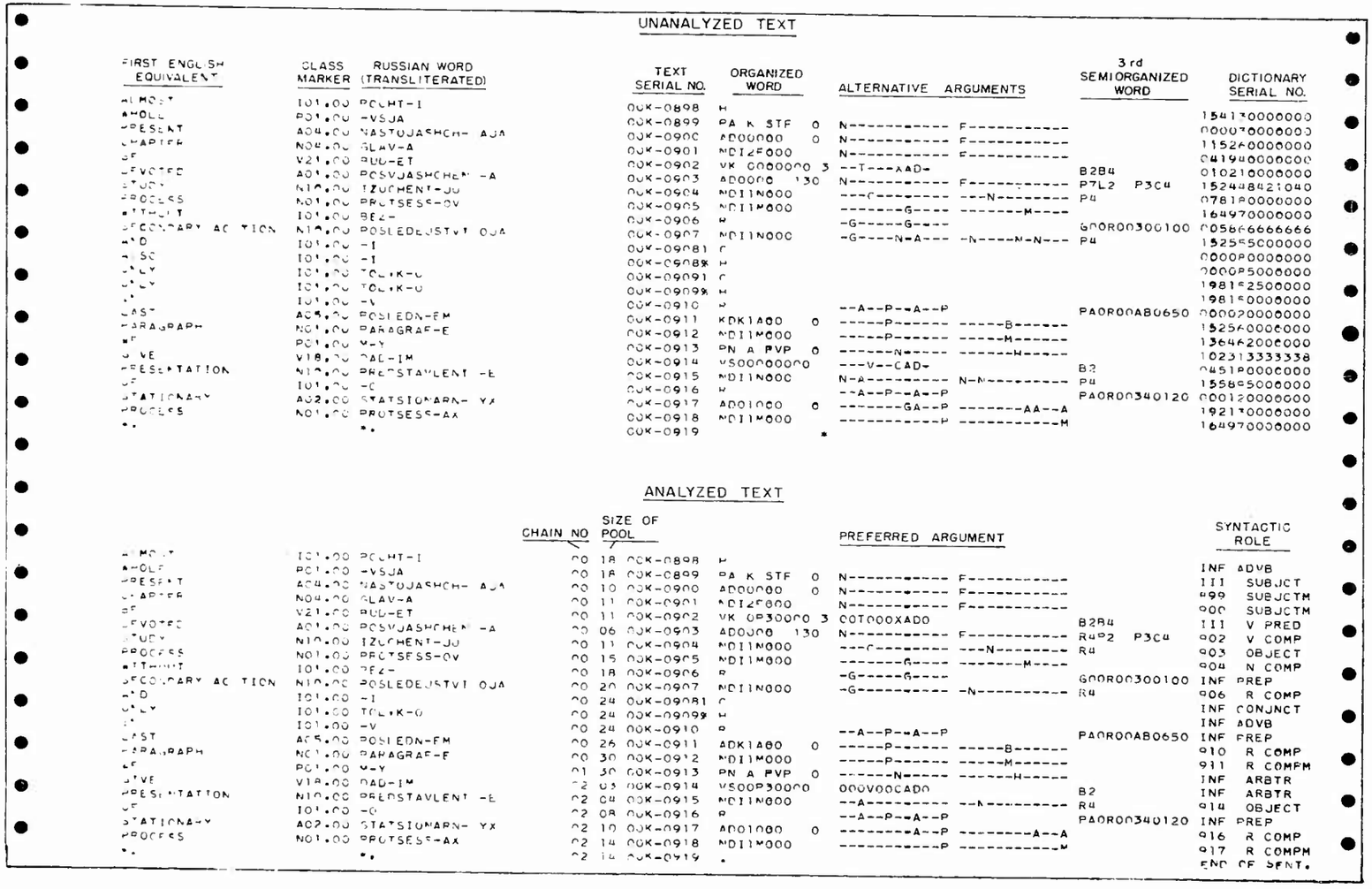
A Clause as an Object of a Verb

Figure 66



A Prepositional Phrase Isolated by Commas

Figure 67



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
ALMOST	I01.00	POCHTI-I	00K-0898	H			1541300000000
A WHOLE	P01.00	-VSJA	00K-0899	PA K STF 0	N---------- F----------		0000700000000
PRESENT	A04.00	NASTOJASHCH- AJA	00K-0900	AD00000 0	N---------- F----------		1152600000000
CHAPTER	N04.00	GLAV-A	00K-0901	NDI2F000	N---------- F----------		0419400000000
OF	V21.00	PUD-ET	00K-0902	VK 0000000 3	--T---AAD-	B2B4	0102100000000
DEVOTED	A01.00	POSVJASHCHEN -A	00K-0903	AD0000 130	N---------- F----------	P7L2 P3C4	1524484210400
STUDY	N10.00	IZUCHENI-JU	00K-0904	NDI1N000	---C------- ---N-------	P4	0781800000000
PROCESS	N01.00	PROTSESS-OV	00K-0905	NDI1M000	-------G---- -------M----		1649700000000
WITHOUT	I01.00	BEZ-	00K-0906	H	-G-----G----	G00R00300100	0056666666666
SECONDARY ACTION	N10.00	POSLEDEJSTVI OJA	00K-0907	NDI1N000	-G----N-A--- -N----N-N---	P4	1525550000000
AND	I01.00	-I	00K-09081	C			0000800000000
ALSO	I01.00	-I	00K-0908%	H			0000850000000
VALV	I01.00	TOLKK-O	00K-09091	C			1981525000000
VALV	I01.00	TOLKK-O	00K-0909%	H			1981500000000
IN	I01.00	-V	00K-0910	P	--A--P--A--P	PA0R00AB0650	0000200000000
LAST	A05.00	POSLEDN-EM	00K-0911	KDK1A00 0	-----P------ -----B------		1525600000000
PARAGRAPH	N01.00	PARAGRAF-E	00K-0912	NDI1M000	-----P------ -----M------		1364620000000
OF	P01.00	M-Y	00K-0913	PN A PVP 0	------N----- ------H-----		1023133333338
GIVE	V18.00	DAL-IM	00K-0914	VS00000000	---V--CAD-	B2	0451800000000
PRESENTATION	N10.00	PREDSTAVLENI -E	00K-0915	NDI1N000	N-A---------- N-N----------	P4	1558650000000
OF	I01.00	-O	00K-0916	H	--A--P--A--P	PA0R00340120	0001200000000
STATIONARY	A02.00	STATSIONARN- YX	00K-0917	AD01000 0	--------GA--P --------AA--A		1921300000000
PROCESS	N01.00	PROTSESS-AX	00K-0918	NDI1M000	----------P ----------M		1649700000000
.		.	00K-0919	.			

ANALYZED TEXT

		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
ALMOST	I01.00 POCHTI-I	00	18	00K-0898	H			INF ADVB
A WHOLE	P01.00 -VSJA	00	18	00K-0899	PA K STF 0	N---------- F----------		III SUBJCT
PRESENT	A04.00 NASTOJASHCH- AJA	00	10	00K-0900	AD00000 0	N---------- F----------		499 SUBJCTM
CHAPTER	N04.00 GLAV-A	00	11	00K-0901	NDI2F000	N---------- F----------		900 SUBJCTM
OF	V21.00 PUD-ET	00	11	00K-0902	VK 0P30000 3	COT000XAD0	B2B4	III V PRED
DEVOTED	A01.00 POSVJASHCHEN -A	00	06	00K-0903	AD0000 130	N---------- F----------	R4P2 P3C4	902 V COMP
STUDY	N10.00 IZUCHENI-JU	00	11	00K-0904	NDI1N000	---C------- ---N-------	R4	903 OBJECT
PROCESS	N01.00 PROTSESS-OV	00	15	00K-0905	NDI1M000	-------G---- -------M----		904 N COMP
WITHOUT	I01.00 BEZ-	00	18	00K-0906	P	-G-----G----	G00R00300100	INF PREP
SECONDARY ACTION	N10.00 POSLEDEJSTVI OJA	00	20	00K-0907	NDI1N000	-G---------- -N----------	R4	906 R COMP
AND	I01.00 -I	00	24	00K-09081	C			INF CONJNCT
ALSO	I01.00 TOLKK-O	00	24	00K-0909%	H			INF ADVB
IN	I01.00 -V	00	24	00K-0910	P	--A--P--A--P	PA0R00AB0650	INF PREP
LAST	A05.00 POSLEDN-EM	00	26	00K-0911	ADK1A00 0	-----P------ -----B------		910 R COMP
PARAGRAPH	N01.00 PARAGRAF-E	00	30	00K-0912	NDI1M000	-----P------ -----M------		911 R COMPM
OF	P01.00 M-Y	01	30	00K-0913	PN A PVP 0	------N----- ------H-----		INF ARBTR
GIVE	V18.00 DAL-IM	02	03	00K-0914	VS00P30000	000V00CAD0	B2	INF ARBTR
PRESENTATION	N10.00 PREDSTAVLENI -E	02	04	00K-0915	NDI1N000	--A---------- --N----------	R4	914 OBJECT
OF	I01.00 -O	02	08	00K-0916	P	--A--P--A--P	PA0R00340120	INF PREP
STATIONARY	A02.00 STATSIONARN- YX	02	10	00K-0917	AD01000 0	--------A--P --------A--A		916 R COMP
PROCESS	N01.00 PROTSESS-AX	02	14	00K-0918	NDI1M000	----------P ----------M		917 R COMPM
.	.	02	14	00K-0919	.			END OF SENT.

A Sentence with Two Clauses Not Separated by Commas

Figure 68

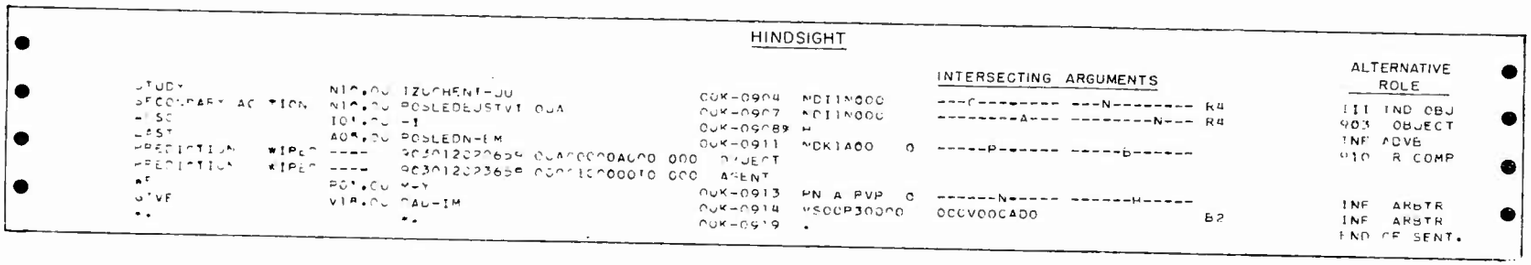
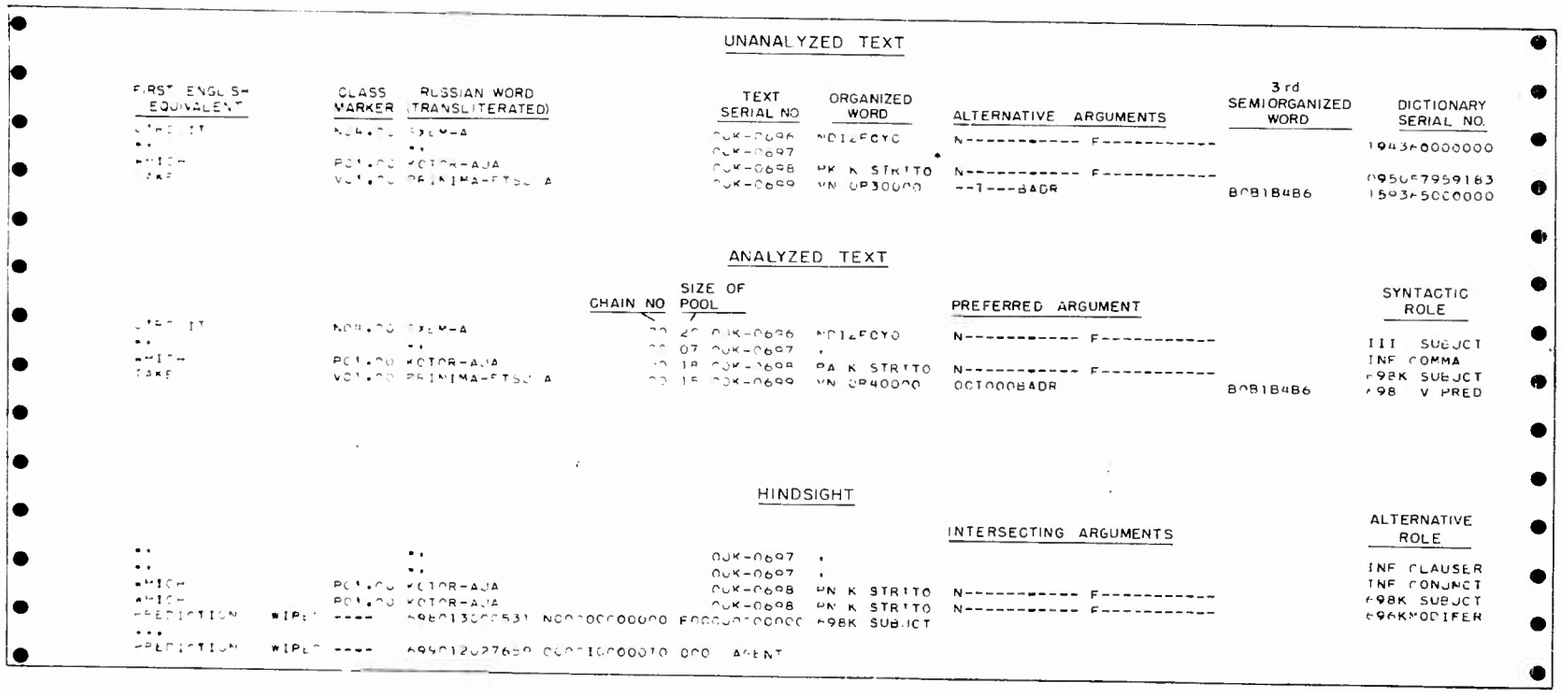


Figure 68 (continued)



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
**		**	00K-0697				
WHICH	PRO.00	KOTOR-AJA	00K-0698	PR K STRITO	N---------- F----------		1943A0000000
TAKE	VB1.00	PRINIMA-FTSA	00K-0699	VN GP30000	--1---BADR	B0B1B4B6	0950E7959183 1593A5000000

ANALYZED TEXT

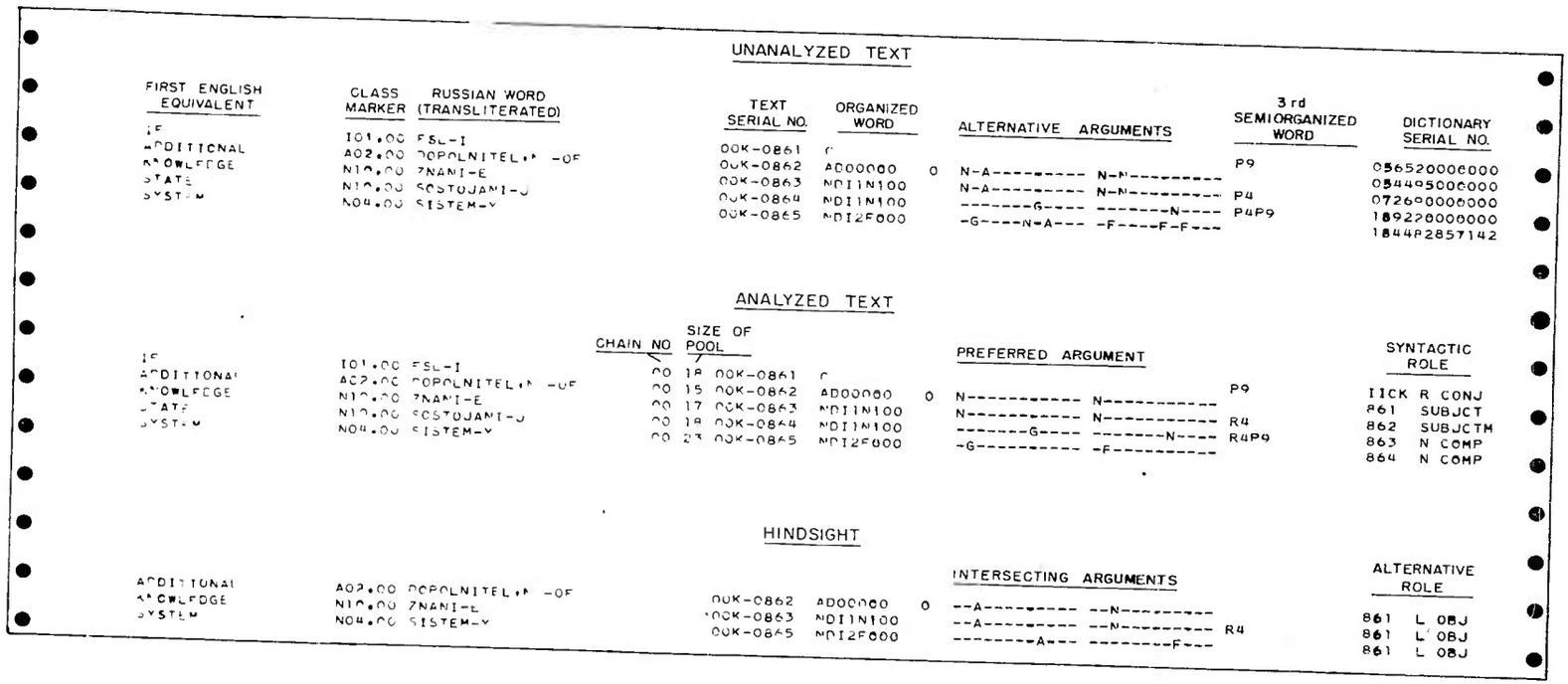
			CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
**		**	00	07	00K-0697	,			INF COMMA
WHICH	PRO.00	KOTOR-AJA	00	18	00K-0698	PR K STRITO	N---------- F----------		698K SUBJCT
TAKE	VB1.00	PRINIMA-FTSA	00	15	00K-0699	VN GP40000	0CT000B4DR	B0B1B4B6	699 V PRED

HINDSIGHT

					INTERSECTING ARGUMENTS	ALTERNATIVE ROLE
**		**	00K-0697	,		INF CLAUSER
**		**	00K-0697	,		INF CONJNCT
WHICH	PRO.00	KOTOR-AJA	00K-0698	PR K STRITO	N---------- F----------	698K SUBJCT
WHICH	PRO.00	KOTOR-AJA	00K-0698	PR K STRITO	N---------- F----------	698KMODIFER
PREDICTION	WIPE	----	A98013000531	N000C00000	F000000C0000	698K SUBJCT
***						
PREDICTION	WIPE	----	A990120276E0	0001C000010	000 AGENT	

A Relative Pronoun Used as a Subject of a Clause

Figure 69



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
IF	I01.00	ESL-I	00K-0861	C				
ADDITIONAL	A02.00	DOPOLNITEL-N -OE	00K-0862	AD00000	0	N-A---------- N-N----------	P9	056520000000
KNOWLEDGE	N10.00	ZNANI-E	00K-0863	NDI1N100		N-A---------- N-N----------	P4	054495000000
STATE	N10.00	SOSTOJANI-O	00K-0864	NDI1N100		--------G----- --------N-----	P4P9	072690000000
SYSTEM	N04.00	SISTEM-Y	00K-0865	ND12F000		-G----N-A--- -F----F-F---		189220000000
								1844P2857142

ANALYZED TEXT

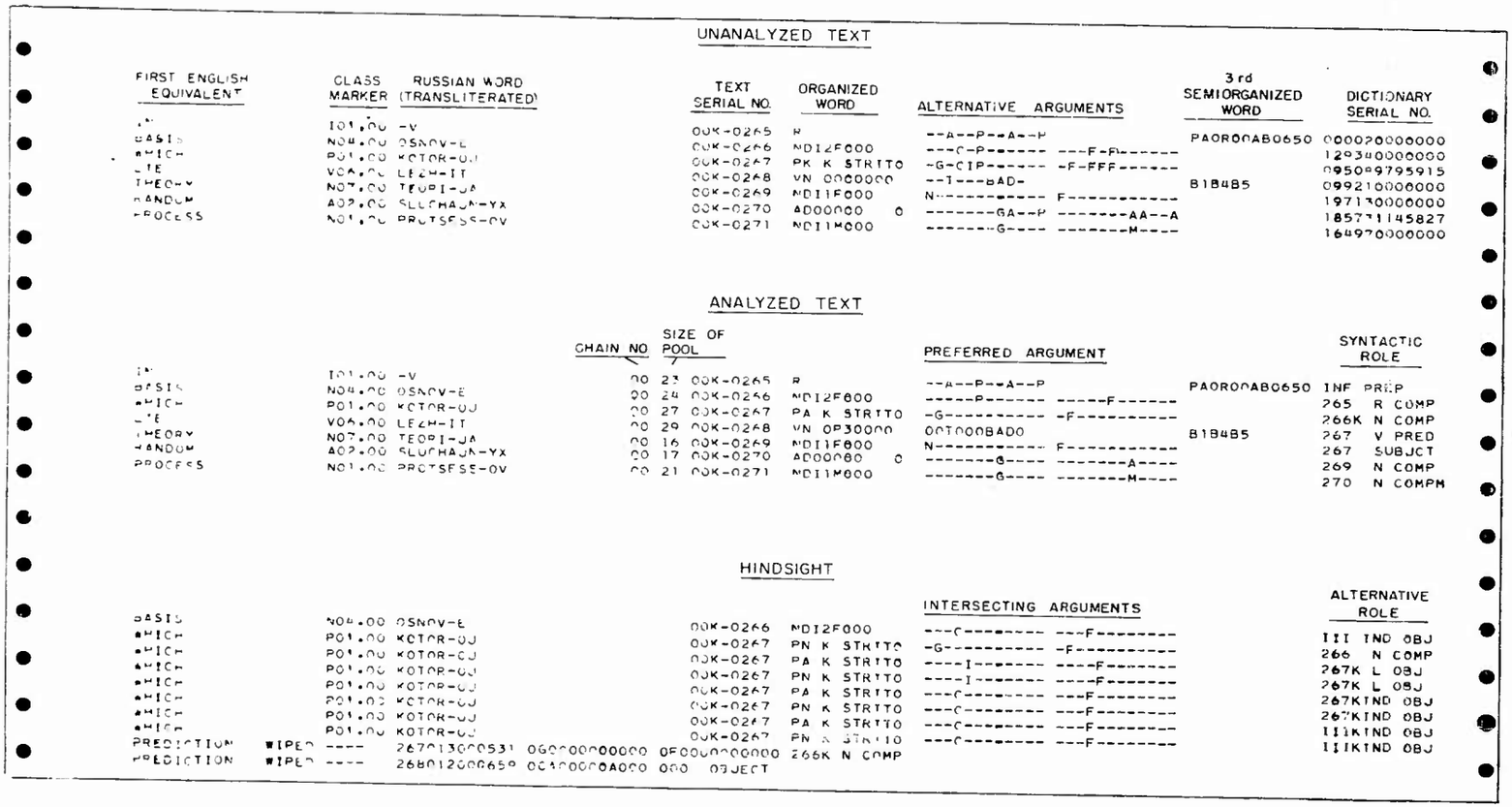
		CHAIN NO	SIZE OF POOL					PREFERRED ARGUMENT			SYNTACTIC ROLE
IF	I01.00 ESL-I	00	18	00K-0861	C						
ADDITIONAL	A02.00 DOPOLNITEL-N -OE	00	15	00K-0862	AD00000	0	N---------- N----------		P9	IICK R CONJ
KNOWLEDGE	N10.00 ZNANI-E	00	17	00K-0863	NDI1N100		N---------- N----------		R4	861 SUBJCT
STATE	N10.00 SOSTOJANI-O	00	18	00K-0864	NDI1N100		--------G----- --------N-----		R4P9	862 SUBJCTM
SYSTEM	N04.00 SISTEM-Y	00	23	00K-0865	ND12F000		-G---------- -F----------			863 N COMP
										864 N COMP

HINDSIGHT

					INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
ADDITIONAL	A02.00 DOPOLNITEL-N -OE	00K-0862	AD00000	0	--A---------- --N----------		
KNOWLEDGE	N10.00 ZNANI-E	00K-0863	NDI1N100		--A---------- --N----------	R4	861 L OBJ
SYSTEM	N04.00 SISTEM-Y	00K-0865	ND12F000		--------A--- --------F---		861 L OBJ
							861 L OBJ

A Clause Introduced by a Conjunction

Figure 70



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
IN	I01.00	-V	00K-0265	R	--A--P--A--P	PA0R00AB0650	000020000000
BASIS	N04.00	OSNOV-E	00K-0266	ND12F000	---C-P------ ---F-F------		129340000000
WHICH	P01.00	KOTOR-OJ	00K-0267	PK K STRITO	-G-CIP------ -F-FFF------		095089795915
LIE	V04.00	LEZH-IT	00K-0268	VN 00000000	--I---BAD-	B1B4B5	099210000000
THEORY	N07.00	TEORI-JA	00K-0269	ND11F000	N---------- F----------		197130000000
RANDOM	A02.00	SLUCHAJN-YX	00K-0270	AD00000 0	-------GA--P -------AA--A		185771145827
PROCESS	N01.00	PROTSESS-OV	00K-0271	ND11M000	-------G---- -------M----		164970000000

ANALYZED TEXT

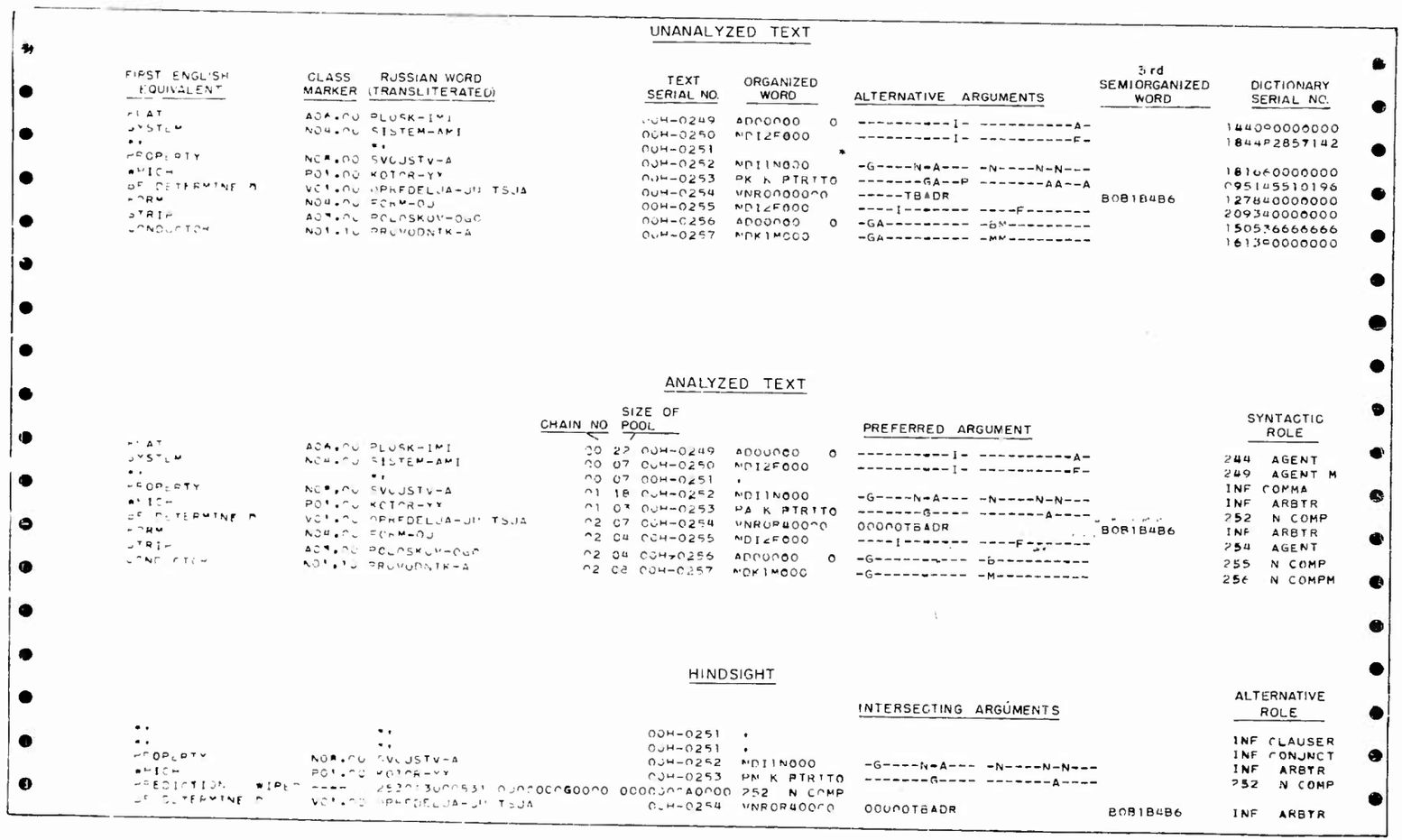
		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
IN	I01.00 -V	00	23	00K-0265	R	--A--P--A--P	PA0R00AB0650	INF PREP
BASIS	N04.00 OSNOV-E	00	24	00K-0266	ND12F000	-----P------ -----F------		265 R COMP
WHICH	P01.00 KOTOR-OJ	00	27	00K-0267	PA K STRITO	-G---------- -F----------		266K N COMP
LIE	V04.00 LEZH-IT	00	29	00K-0268	VN 0P30000	00T000BAD0	B1B4B5	267 V PRED
THEORY	N07.00 TEORI-JA	00	16	00K-0269	ND11F000	N---------- F----------		267 SUBJCT
RANDOM	A02.00 SLUCHAJN-YX	00	17	00K-0270	AD00000 0	-------G---- -------A----		269 N COMP
PROCESS	N01.00 PROTSESS-OV	00	21	00K-0271	ND11M000	-------G---- -------M----		270 N COMPM

HINDSIGHT

					INTERSECTING ARGUMENTS	ALTERNATIVE ROLE
BASIS	N04.00 OSNOV-E		00K-0266	ND12F000		
WHICH	P01.00 KOTOR-OJ		00K-0267	PN K STRITO	---C--------- ---F---------	III IND OBJ
WHICH	P01.00 KOTOR-OJ		00K-0267	PA K STRITO	-G---------- -F----------	266 N COMP
WHICH	P01.00 KOTOR-OJ		00K-0267	PN K STRITO	----I--------- ----F---------	267K L OBJ
WHICH	P01.00 KOTOR-OJ		00K-0267	PA K STRITO	----I--------- ----F---------	267K L OBJ
WHICH	P01.00 KOTOR-OJ		00K-0267	PN K STRITO	---C--------- ---F---------	267KIND OBJ
WHICH	P01.00 KOTOR-OJ		00K-0267	PA K STRITO	---C--------- ---F---------	267KIND OBJ
WHICH	P01.00 KOTOR-OJ		00K-0267	PN K STRITO	---C--------- ---F---------	IIIKIND OBJ
PREDICTION	WIPED ----	267013000531 0000000000000	0F0000000000	266K N COMP	---C--------- ---F---------	IIIKIND OBJ
PREDICTION	WIPED ----	268012000650 0010000A000	000 OBJECT			

A Relative Pronoun Used as a Noun Complement

Figure 71



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
[illegible]	ADA.00	PLOSK-IMI	00H-0249	AD00000	0	----------I- ----------A-		1440000000000
SYSTEM	NOM.00	SISTEM-AMI	00H-0250	MDI2F000		----------I- ----------F-		1844P2857142
,,		,,	00H-0251		*			
PROPERTY	NOR.00	SVOJSTV-A	00H-0252	MDI1N000		-G----N-A--- -N----N-N---		1810600000000
WHICH	POT.00	KOTOR-YY	00H-0253	PR K PTRTTO		-------GA--P -------AA--A		095145510196
BE DETERMINE D	VOT.00	OPREDELJA-JU TSJA	00H-0254	VNR0000000		-----TBADR	B0B1B4B6	127840000000
FORM	NOM.00	FORM-OJ	00H-0255	MDI2F000		----I------- ----F-------		209340000000
STRIP	ADJ.00	POLOSKOV-OGO	00H-0256	AD00000	0	-GA--------- -BM---------		150536666666
CONDUCTOR	NOT.10	PROVODNIK-A	00H-0257	MDK1M000		-GA--------- -MM---------		161360000000

ANALYZED TEXT

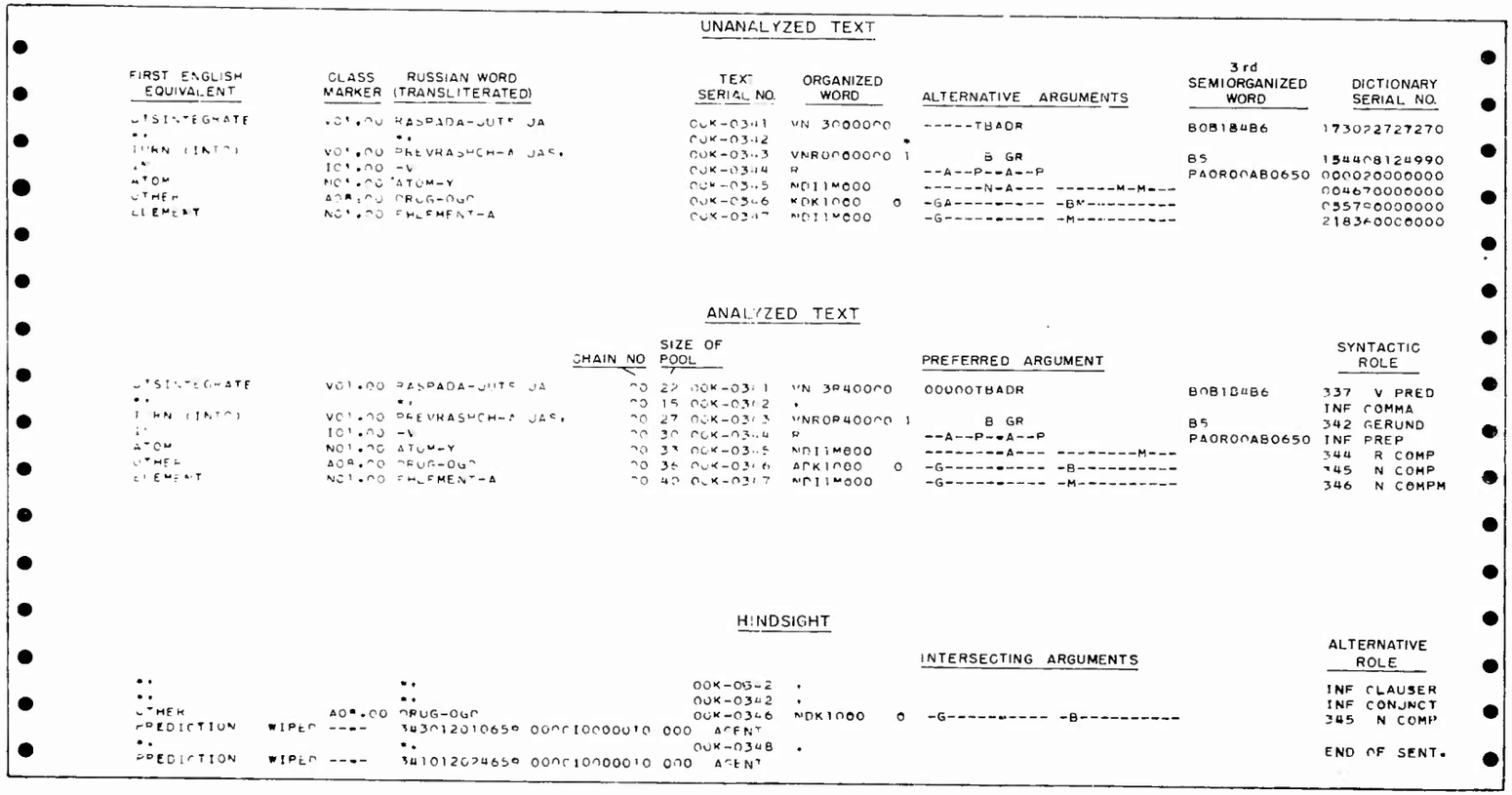
		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
[illegible]	ADA.00 PLOSK-IMI	00	22	00H-0249	AD00000 0	----------I- ----------A-		244 AGENT
SYSTEM	NOM.00 SISTEM-AMI	00	07	00H-0250	MDI2F000	----------I- ----------F-		249 AGENT M
,,	,,	00	07	00H-0251	,			INF COMMA
PROPERTY	NOR.00 SVOJSTV-A	01	18	00H-0252	MDI1N000	-G----N-A--- -N----N-N---		INF ARBTR
WHICH	POT.00 KOTOR-YY	01	03	00H-0253	PR K PTRTTO	-------G---- -------A----		252 N COMP
BE DETERMINE D	VOT.00 OPREDELJA-JU TSJA	02	07	00H-0254	VNR0P40000	00000TBADR	B0B1B4B6	INF ARBTR
FORM	NOM.00 FORM-OJ	02	04	00H-0255	MDI2F000	----I------- ----F-------		254 AGENT
STRIP	ADJ.00 POLOSKOV-OGO	02	04	00H-0256	AD00000 0	-G---------- -B----------		255 N COMP
CONDUCTOR	NOT.10 PROVODNIK-A	02	02	00H-0257	MDK1M000	-G---------- -M----------		256 N COMPM

HINDSIGHT

				INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
,,	,,	00H-0251	,			INF CLAUSER
,,	,,	00H-0251	,			INF CONJNCT
PROPERTY	NOR.00 SVOJSTV-A	00H-0252	MDI1N000	-G----N-A--- -N----N-N---		INF ARBTR
WHICH	POT.00 KOTOR-YY	00H-0253	PR K PTRTTO	-------G---- -------A----		252 N COMP
PREDICTION *WIPE	---- 252013000531 0000000G0000	0000000A0000	252 N COMP			
BE DETERMINE D	VOT.00 OPREDELJA-JU TSJA	00H-0254	VNR0P40000	00000TBADR	B0B1B4B6	INF ARBTR

A Subordinate Clause Not Analyzable by the Present Program

Figure 72



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
DISINTEGRATE	V01.00	RASPADA-JUTS JA	00K-0341	VN 3R00000		-----TBADR	B0B184B6	173022727270
.	.	.	00K-0342	.				
TURN (INTO)	V01.00	PREVRASHCH-A JAS.	00K-0343	VNR0R00000	1	B GR	B5	154408124990
IS	I01.00	-V	00K-0344	R		--A--P--A--P	PA0R00AB0650	000020000000
ATOM	N01.00	ATOM-Y	00K-0345	ND11M000		------N-A--- ------M-M---		004670000000
OTHER	A0R.00	DRUG-OGO	00K-0346	KDK1000	0	-GA---------- -BM----------		055780000000
ELEMENT	N01.00	ELEMENT-A	00K-0347	ND11M000		-G---------- -M----------		218360000000

ANALYZED TEXT

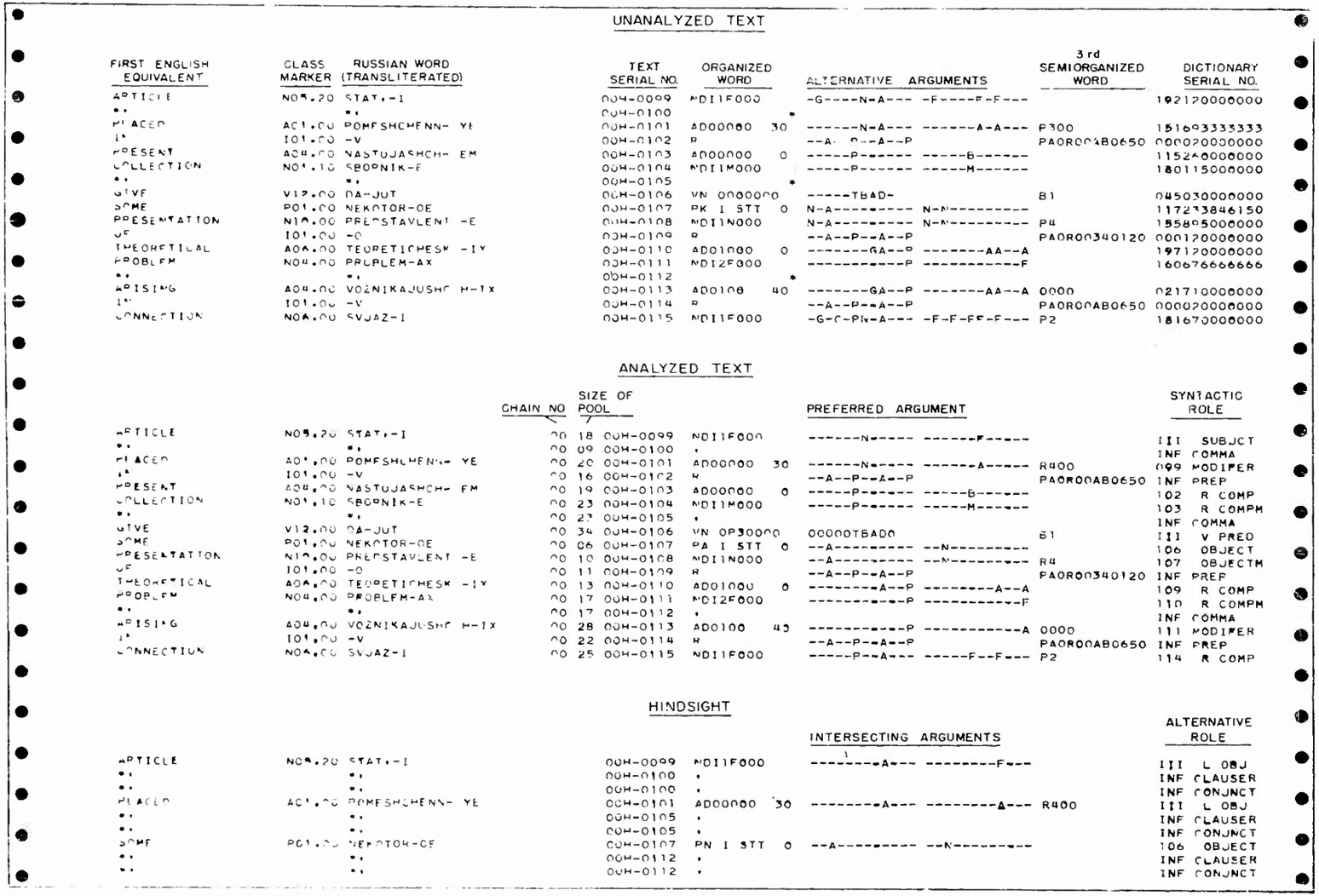
		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
DISINTEGRATE	V01.00 RASPADA-JUTS JA	00	22	00K-0341	VN 3R40000	00000TBADR	B0B184B6	337 V PRED
.	.	00	15	00K-0342	.			INF COMMA
TURN (INTO)	V01.00 PREVRASHCH-A JAS.	00	27	00K-0343	VNR0R40000	1 B GR	B5	342 GERUND
IS	I01.00 -V	00	30	00K-0344	R	--A--P--A--P	PA0R00AB0650	INF PREP
ATOM	N01.00 ATOM-Y	00	33	00K-0345	ND11M800	--------A--- --------M---		344 R COMP
OTHER	A0R.00 DRUG-OGO	00	36	00K-0346	ADK1000	0 -G---------- -B----------		345 N COMP
ELEMENT	N01.00 ELEMENT-A	00	40	00K-0347	ND11M000	-G---------- -M----------		346 N COMPM

HINDSIGHT

							INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
.			.		00K-0342	.			INF CLAUSER
.			.		00K-0342	.			INF CONJNCT
OTHER		A0R.00	DRUG-OGO		00K-0346	NDK1000	0 -G---------- -B----------		345 N COMP
PREDICTION	WIPED	----	3430120106590	000010000010	000	AGENT			
.			.		00K-0348	.			END OF SENT.
PREDICTION	WIPED	----	3410120246590	000010000010	000	AGENT			

A Gerund Phrase

Figure 73



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
ARTICLE	NO9.20	STAT+-I	00H-0099	ND11F000		-G----N-A---	-F----F-F---		192120000000
*,		*,	00H-0100		*				
PLACED	AC1.00	POMESHCHENN- YE	00H-0101	AD00000	30	------N-A---	------A-A---	P300	151693333333
IN	I01.00	-V	00H-0102	R		--A- P--A--P		PA0R00AB0650	000020000000
PRESENT	A04.00	NASTOJASHCH- EM	00H-0103	AD00000	0	-----P------	-----B------		115260000000
COLLECTION	N01.10	SBORNIK-E	00H-0104	ND11M000		-----P------	-----M------		180115000000
*,		*,	00H-0105		*				
GIVE	V12.00	DA-JUT	00H-0106	VN 0000000		-----TBAD-		B1	045030000000
SOME	P01.00	NEKOTOR-OE	00H-0107	PK I STT	0	N-A---------	N-N---------		117233846150
PRESENTATION	N10.00	PREDSTAVLENI -E	00H-0108	ND11N000		N-A---------	N-N---------	P4	155865000000
OF	I01.00	-O	00H-0109	R		--A--P--A--P		PA0R00340120	000120000000
THEORETICAL	A04.00	TEORETICHESK -IY	00H-0110	AD01000	0	-------GA--P	-------AA--A		197120000000
PROBLEM	N04.00	PROBLEM-AX	00H-0111	ND12F000		----------P	----------F		160676666666
*,		*,	00H-0112		*				
ARISING	A04.00	VOZNIKAJUSHC H-IX	00H-0113	AD0100	40	-------GA--P	-------AA--A	0000	021710000000
IN	I01.00	-V	00H-0114	R		--A--P--A--P		PA0R00AB0650	000020000000
CONNECTION	N0A.00	SVJAZ-I	00H-0115	ND11F000		-G-C-PN-A---	-F-F-FF-F---	P2	181670000000

ANALYZED TEXT

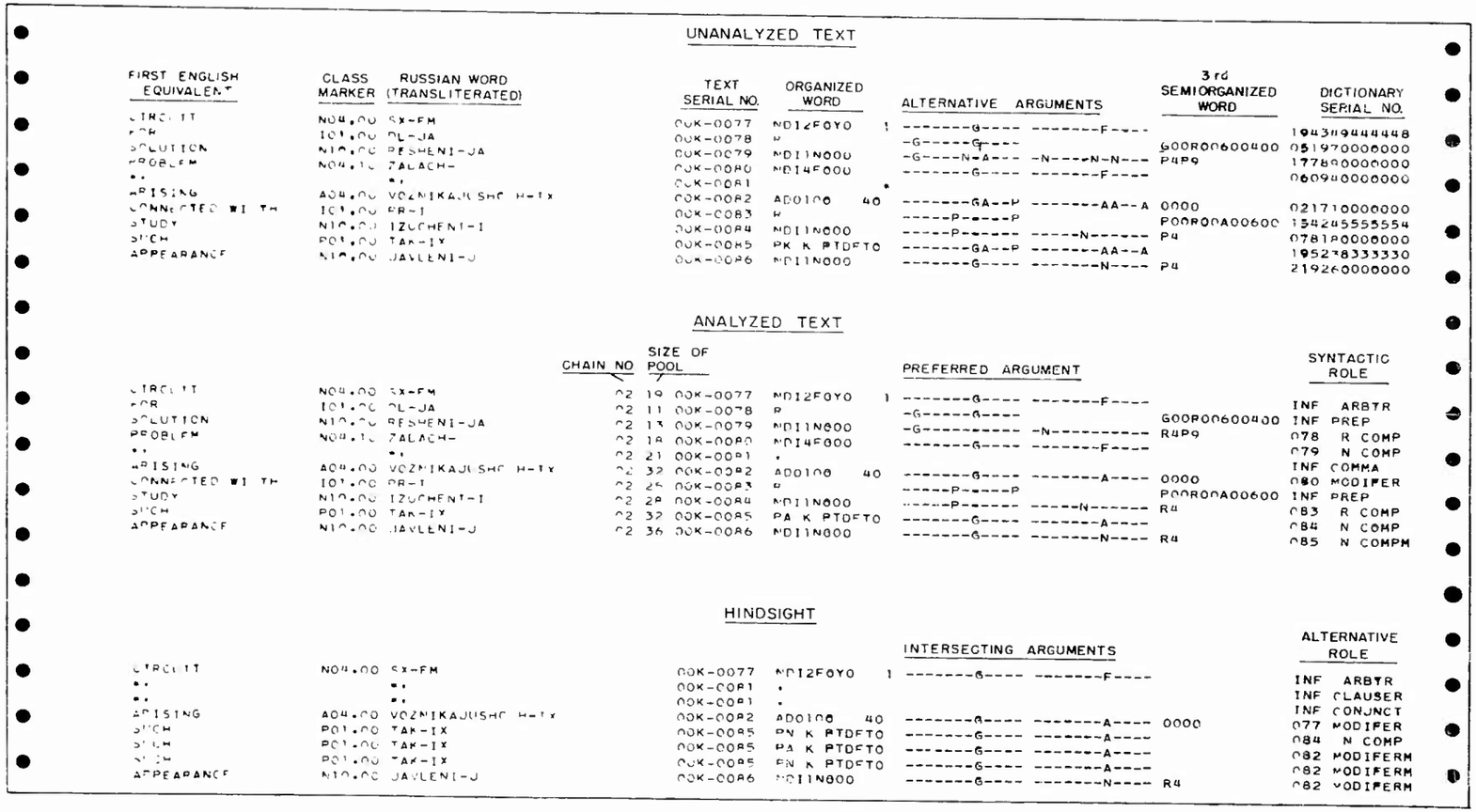
		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE
ARTICLE	NO9.20 STAT+-I	00	18	00H-0099	ND11F000	------N-----	------F-----		III SUBJCT
*,	*,	00	09	00H-0100	*				INF COMMA
PLACED	A01.00 POMESHCHENN- YE	00	20	00H-0101	AD00000 30	------N-----	------A-----	R400	099 MODIFER
IN	I01.00 -V	00	16	00H-0102	R	--A--P--A--P		PA0R00AB0650	INF PREP
PRESENT	A04.00 NASTOJASHCH- EM	00	19	00H-0103	AD00000 0	-----P------	-----B------		102 R COMP
COLLECTION	N01.10 SBORNIK-E	00	23	00H-0104	ND11M000	-----P------	-----M------		103 R COMPM
*,	*,	00	23	00H-0105	*				INF COMMA
GIVE	V12.00 DA-JUT	00	34	00H-0106	VN 0P30000	000007BAD0		B1	III V PRED
SOME	P01.00 NEKOTOR-OE	00	06	00H-0107	PA I STT 0	--A---------	--N---------		106 OBJECT
PRESENTATION	N10.00 PREDSTAVLENI -E	00	10	00H-0108	ND11N000	--A---------	--N---------	R4	107 OBJECTM
OF	I01.00 -O	00	11	00H-0109	R	--A--P--A--P		PA0R00340120	INF PREP
THEORETICAL	A04.00 TEORETICHESK -IY	00	13	00H-0110	AD01000 0	--------A--P	--------A--A		109 R COMP
PROBLEM	N04.00 PROBLEM-AX	00	17	00H-0111	ND12F000	----------P	----------F		110 R COMPM
*,	*,	00	17	00H-0112	*				INF COMMA
ARISING	A04.00 VOZNIKAJUSHC H-IX	00	28	00H-0113	AD0100 40	----------P	----------A	0000	111 MODIFER
IN	I01.00 -V	00	22	00H-0114	R	--A--P--A--P		PA0R00AB0650	INF PREP
CONNECTION	N0A.00 SVJAZ-I	00	25	00H-0115	ND11F000	-----P--A---	-----F--F---	P2	114 R COMP

HINDSIGHT

					INTERSECTING ARGUMENTS			ALTERNATIVE ROLE
ARTICLE	NO9.20 STAT+-I	00H-0099	ND11F000		--------A---	--------F---		III L OBJ
*,	*,	00H-0100	*					INF CLAUSER
*,	*,	00H-0100	*					INF CONJNCT
PLACED	A01.00 POMESHCHENN- YE	00H-0101	AD00000	30	--------A---	--------A---	R400	III L OBJ
*,	*,	00H-0105	*					INF CLAUSER
*,	*,	00H-0105	*					INF CONJNCT
SOME	P01.00 NEKOTOR-OE	00H-0107	PN I STT	0	--A---------	--N---------		106 OBJECT
*,	*,	00H-0112	*					INF CLAUSER
*,	*,	00H-0112	*					INF CONJNCT

Two Participial Phrases

Figure 74



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
CIRCUIT	N04.00	SX-FM	00K-0077	MD12F0Y0 1	-------G----	-------F----		19431944444
FOR	I01.00	DL-JA	00K-0078	P	-G-----G----			0519700000000
SOLUTION	N10.00	RESHENI-JA	00K-0079	MD11N000	-G----N-A---	-N----N-N---	G00R00600400	1778900000000
PROBLEM	N04.10	ZALACH-	00K-00R0	MD14F000	-------G----	-------F----	P4P9	0609400000000
..		..	00K-00R1	.				0217100000000
ARISING	A04.00	VOZNIKAJUSHC H-IX	00K-00R2	AD0100 40	-------GA--P	-------AA--A	0000	1342455555554
CONNECTED WI TH	I01.00	PR-I	00K-00R3	P	-----P-----P		P00R00A00600	0781R0000000
STUDY	N10.00	IZUCHENI-I	00K-00R4	MD11N000	-----P------	-----N------	P4	1952?8333330
SICH	P01.00	TAK-IX	00K-00R5	PK K PTDFTO	-------GA--P	-------AA--A		2192600000000
APPEARANCE	N10.00	JAVLENI-J	00K-00R6	MD11N000	-------G----	-------N----	P4	

ANALYZED TEXT

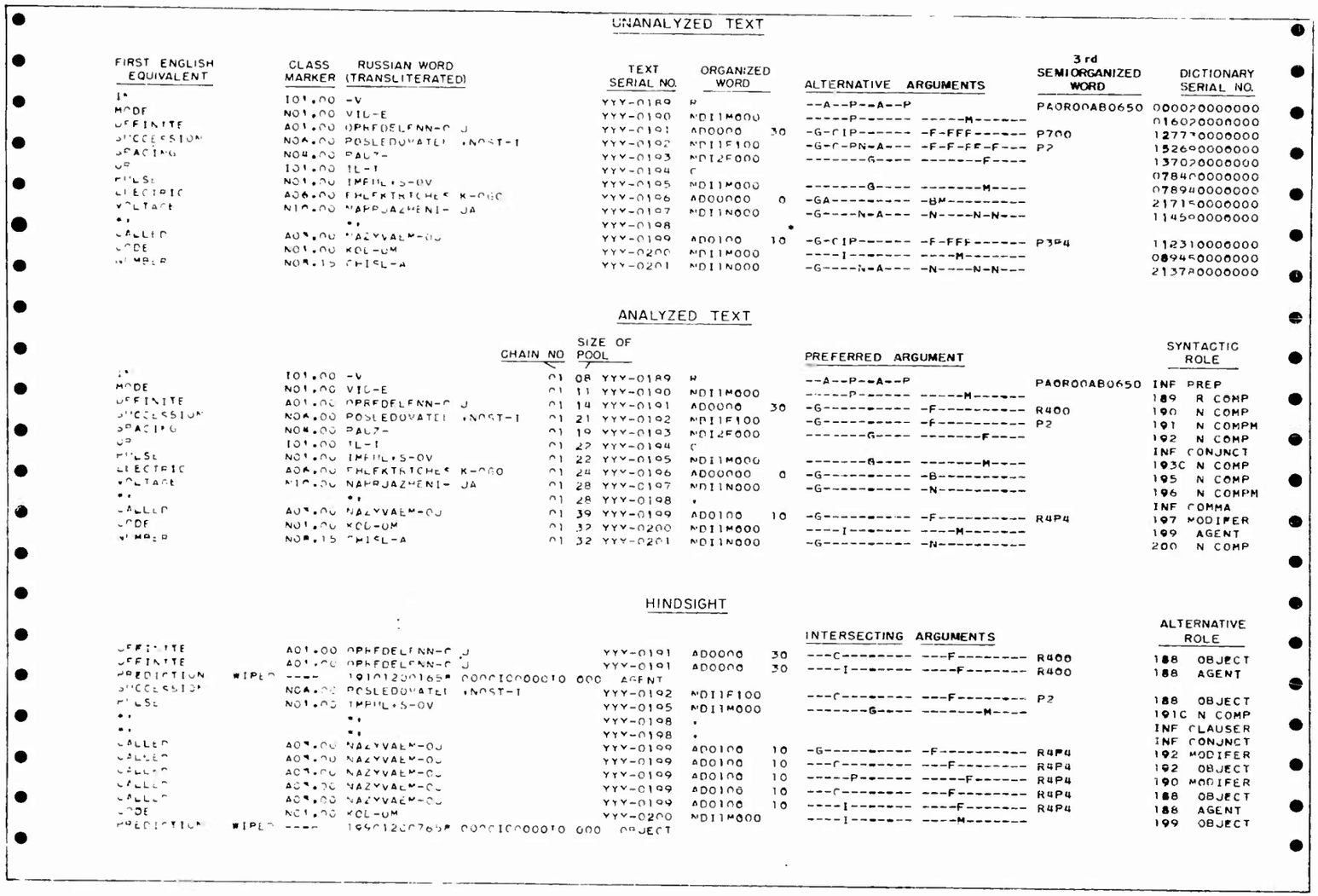
		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE
CIRCUIT	N04.00 SX-FM	02	19	00K-0077	MD12F0Y0 1	-------G----	-------F----		INF ARBTR
FOR	I01.00 DL-JA	02	11	00K-0078	P	-G-----G----			INF PREP
SOLUTION	N10.00 RESHENI-JA	02	13	00K-0079	MD11N000	-G----------	-N----------	G00R00600400	078 R COMP
PROBLEM	N04.10 ZALACH-	02	18	00K-00R0	MD14F000	-------G----	-------F----	R4P9	079 N COMP
..	..	02	21	00K-00R1	.				INF COMMA
ARISING	A04.00 VOZNIKAJUSHC H-IX	02	32	00K-00R2	AD0100 40	-------G----	-------A----	0000	080 MODIFER
CONNECTED WI TH	I01.00 PR-I	02	25	00K-00R3	P	-----P-----P		P00R00A00600	INF PREP
STUDY	N10.00 IZUCHENI-I	02	28	00K-00R4	MD11N000	-----P------	-----N------	R4	083 R COMP
SICH	P01.00 TAK-IX	02	32	00K-00R5	PA K PTDFTO	-------G----	-------A----		084 N COMP
APPEARANCE	N10.00 JAVLENI-J	02	36	00K-00R6	MD11N000	-------G----	-------N----	R4	085 N COMPM

HINDSIGHT

				INTERSECTING ARGUMENTS			ALTERNATIVE ROLE
CIRCUIT	N04.00 SX-FM	00K-0077	MD12F0Y0 1	-------G----	-------F----		INF ARBTR
..	..	00K-00R1	.				INF CLAUSER
..	..	00K-00R1	.				INF CONJNCT
ARISING	A04.00 VOZNIKAJUSHC H-IX	00K-00R2	AD0100 40	-------G----	-------A----	0000	077 MODIFER
SICH	P01.00 TAK-IX	00K-00R5	PN K PTDFTO	-------G----	-------A----		084 N COMP
SICH	P01.00 TAK-IX	00K-00R5	PA K PTDFTO	-------G----	-------A----		082 MODIFERM
SICH	P01.00 TAK-IX	00K-00R5	PN K PTDFTO	-------G----	-------A----		082 MODIFERM
APPEARANCE	N10.00 JAVLENI-J	00K-00R6	MD11N000	-------G----	-------N----	R4	082 MODIFERM

An Analysis of an Ambiguous Modifier

Figure 75



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
I*	I01.00	-V	YYY-0189	P		--A--P--A--P	PA0R00AB0650	000020000000
MODE	N01.00	VID-E	YYY-0190	MDIIM000		-----P------ -----M------		016020000000
DEFINITE	A01.00	OPREDELENN-O J	YYY-0191	AD0000	30	-G-CIP------ -F-FFF------	P700	127730000000
SUCCESSION	N0A.00	POSLEDOVATEL -NOST-I	YYY-0192	MDIIF100		-G-C-PN-A--- -F-F-FF-F---	P2	152690000000
SPACING	N04.00	PAUZ-	YYY-0193	MDI2F000		-------G---- -------F----		137020000000
OR	I01.00	IL-I	YYY-0194	C				078400000000
FILSE	N01.00	IMPIL+S-OV	YYY-0195	MDIIM000		-------G---- -------M----		078940000000
ELECTRIC	A06.00	EHLEKTRICHES K-OGO	YYY-0196	AD00000	0	-GA---------- -BM----------		217150000000
VOLTAGE	N10.00	NAPRJAZHENI- JA	YYY-0197	MDIIN000		-G----N-A--- -N----N-N---		114590000000
*,		*,	YYY-0198	*				
CALLED	A09.00	NAZYVAEM-OJ	YYY-0199	AD0100	10	-G-CIP------ -F-FFF------	P3P4	112310000000
CODE	N01.00	KOL-UM	YYY-0200	MDIIM000		----I------- ----M-------		089450000000
NUMBER	N0B.15	CHISL-A	YYY-0201	MDIIN000		-G----N-A--- -N----N-N---		213780000000

ANALYZED TEXT

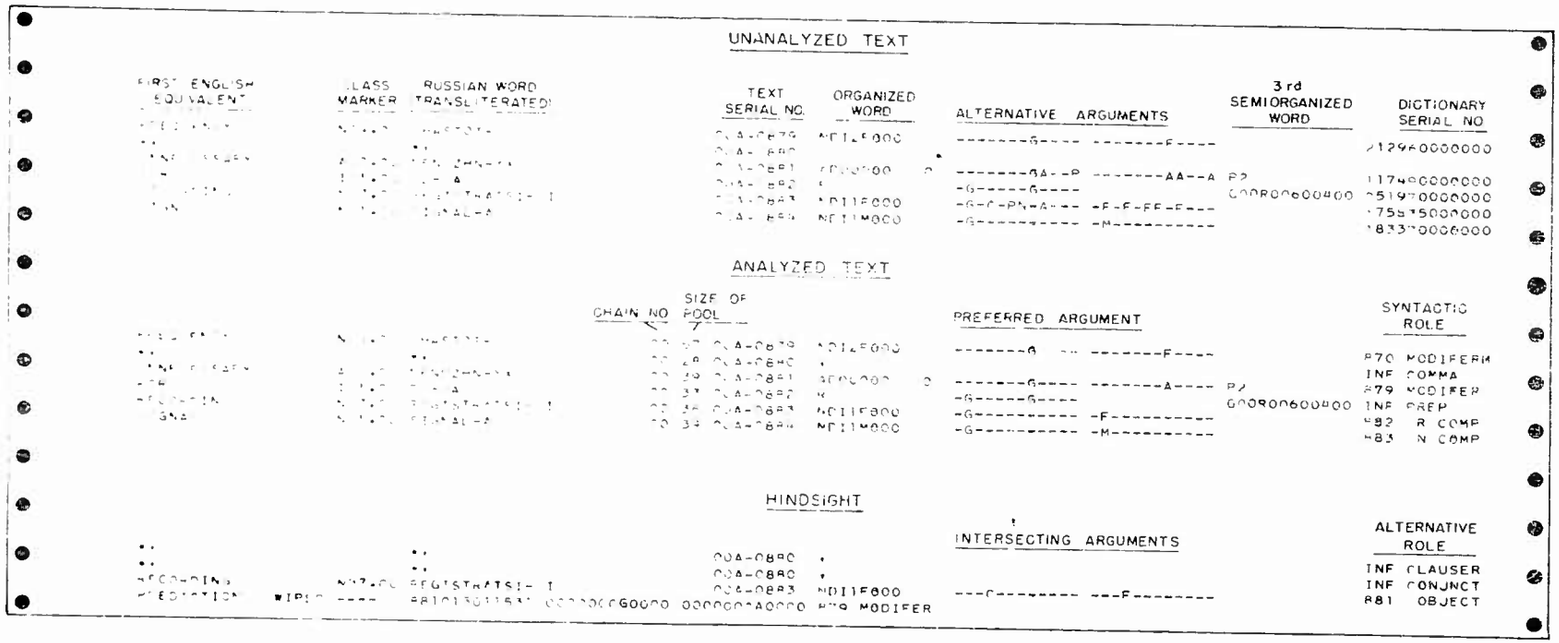
			CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
I*	I01.00	-V	01	08	YYY-0189	P	--A--P--A--P	PA0R00AB0650	INF PREP
MODE	N01.00	VID-E	01	11	YYY-0190	MDIIM000	-----P------ -----M------		189 R COMP
DEFINITE	A01.00	OPREDELENN-O J	01	14	YYY-0191	AD0000 30	-G---------- -F----------	R400	190 N COMP
SUCCESSION	N0A.00	POSLEDOVATEL -NOST-I	01	21	YYY-0192	MDIIF100	-G---------- -F----------	P2	191 N COMPM
SPACING	N04.00	PAUZ-	01	19	YYY-0193	MDI2F000	-------G---- -------F----		192 N COMP
OR	I01.00	IL-I	01	22	YYY-0194	C			INF CONJNCT
FILSE	N01.00	IMPIL+S-OV	01	22	YYY-0195	MDIIM000	-------G---- -------M----		193C N COMP
ELECTRIC	A06.00	EHLEKTRICHES K-OGO	01	24	YYY-0196	AD00000 0	-G---------- -B----------		195 N COMP
VOLTAGE	N10.00	NAPRJAZHENI- JA	01	28	YYY-0197	MDIIN000	-G---------- -N----------		196 N COMPM
*,		*,	01	28	YYY-0198	*			INF COMMA
CALLED	A09.00	NAZYVAEM-OJ	01	39	YYY-0199	AD0100 10	-G---------- -F----------	R4P4	197 MODIFER
CODE	N01.00	KOL-UM	01	32	YYY-0200	MDIIM000	----I------- ----M-------		199 AGENT
NUMBER	N0B.15	CHISL-A	01	32	YYY-0201	MDIIN000	-G---------- -N----------		200 N COMP

HINDSIGHT

						INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
DEFINITE		A01.00 OPREDELENN-O J	YYY-0191	AD0000	30	---C--------- ---F---------	R400	188 OBJECT
DEFINITE		A01.00 OPREDELENN-O J	YYY-0191	AD0000	30	----I-------- ----F--------	R400	188 AGENT
PREDICTION	WIPED	---- 19101200165* 000C1C000010 000 AGENT						
SUCCESSIO		N0A.00 POSLEDOVATEL -NOST-I	YYY-0192	MDIIF100		---C--------- ---F---------	P2	188 OBJECT
FILSE		N01.00 IMPIL+S-OV	YYY-0195	MDIIM000		-------G---- -------M----		191C N COMP
*,		*,	YYY-0198	*				INF CLAUSER
*,		*,	YYY-0198	*				INF CONJNCT
CALLED		A09.00 NAZYVAEM-OJ	YYY-0199	AD0100	10	-G---------- -F----------	R4P4	192 MODIFER
CALLED		A09.00 NAZYVAEM-OJ	YYY-0199	AD0100	10	---C--------- ---F---------	R4P4	192 OBJECT
CALLED		A09.00 NAZYVAEM-OJ	YYY-0199	AD0100	10	-----P------ -----F-------	R4P4	190 MODIFER
CALLED		A09.00 NAZYVAEM-OJ	YYY-0199	AD0100	10	---C--------- ---F---------	R4P4	188 OBJECT
CALLED		A09.00 NAZYVAEM-OJ	YYY-0199	AD0100	10	----I-------- ----F--------	R4P4	188 AGENT
CODE		N01.00 KOL-UM	YYY-0200	MDIIM000		----I------- ----M-------		199 OBJECT
PREDICTION	WIPED	---- 19901200765* 000C1C000010 000 OBJECT						

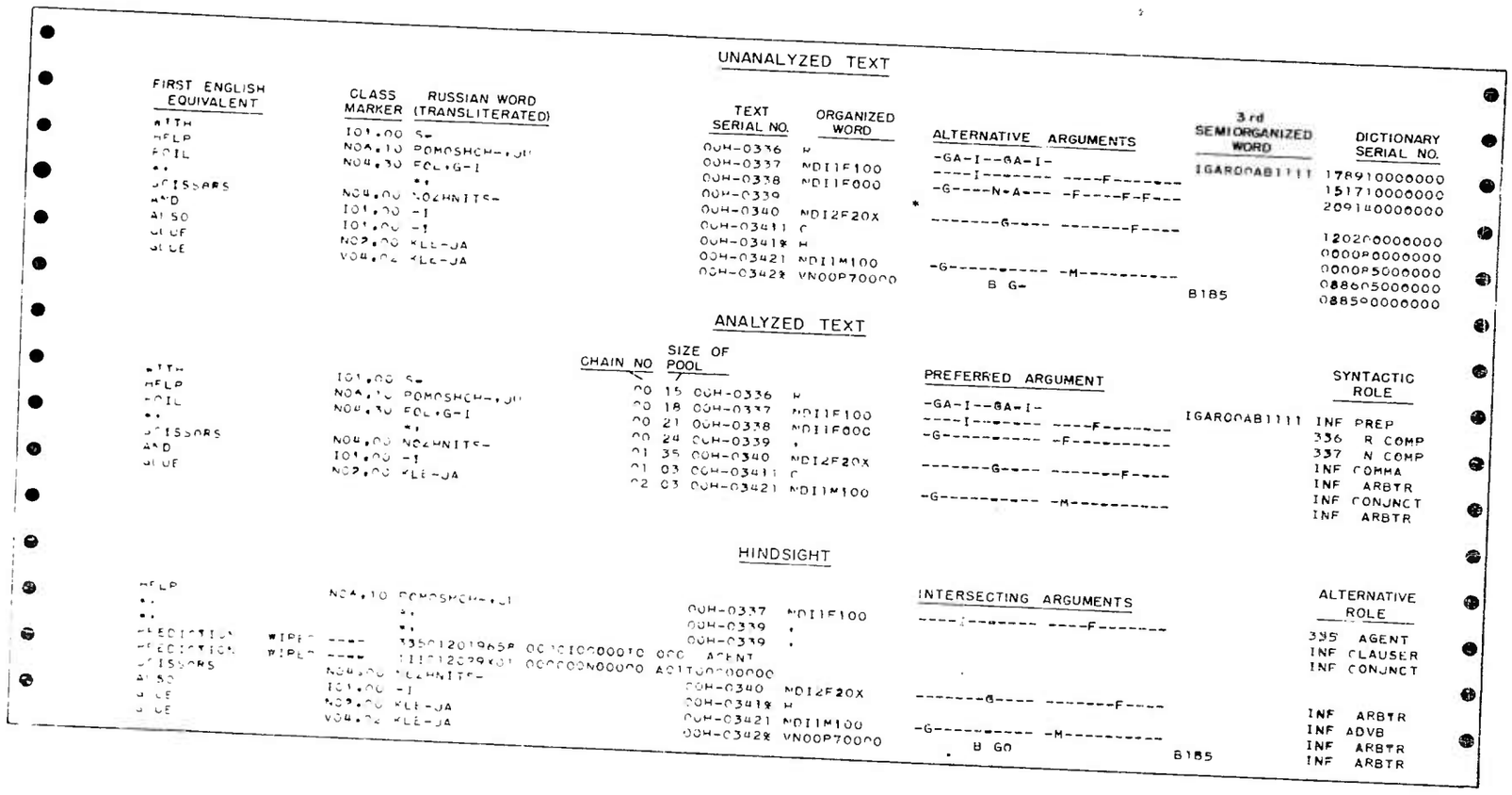
An Incomplete Analysis of an Ambiguous Modifier

Figure 76



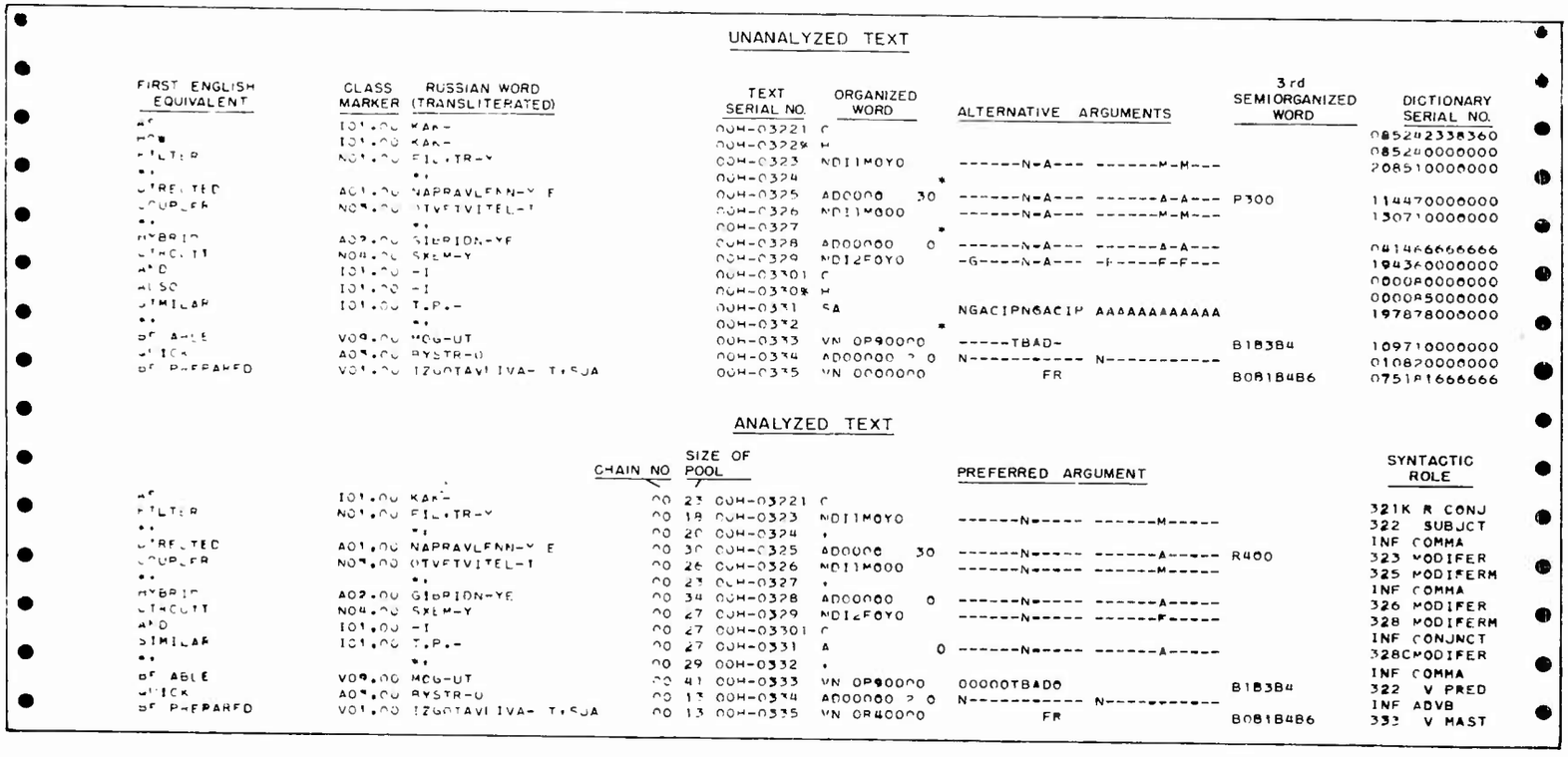
An Appositive as a Modifier

Figure 77



A Series

Figure 78



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
AF	I01.00	KAK-	00H-03221	C					085242338360
AFB	I01.00	KAK-	00H-03229	H					085240000000
FILTER	N01.00	FIL+TR-Y	00H-0323	NDIIM0Y0		------N-A---	------M-M---		208510000000
**		**	00H-0324		*				
CIRCUITED	A01.00	NAPRAVLENN-Y E	00H-0325	AD0000	30	------N-A---	------A-A---	P300	114470000000
COUPLER	N09.00	OTVETVITEL-I	00H-0326	NDIIM000		------N-A---	------M-M---		130710000000
**		**	00H-0327		*				
HYBRID	A09.00	GIBRIDN-YE	00H-0328	AD00000	0	------N-A---	------A-A---		041466666666
CIRCUIT	N04.00	SXEM-Y	00H-0329	NDI2F0Y0		-G----N-A---	-I----F-F---		194360000000
AND	I01.00	-I	00H-03301	C					000080000000
ALSO	I01.00	-I	00H-0330*	H					000085000000
SIMILAR	I01.00	T.P.-	00H-0331	SA		NGACIPN6ACIP	AAAAAAAAAAAA		197878000000
**		**	00H-0332		*				
BE ABLE	V09.00	MOG-UT	00H-0333	VN 0P90000		-----TBAD-		B1B3B4	109710000000
QUICK	A09.00	BYSTR-O	00H-0334	AD00000 2 0		N----------	N----------		010820000000
BE PREPARED	V01.00	IZGOTAVLIVA- T+SJA	00H-0335	VN 0000000		FR		B0B1B4B6	0751B1666666

ANALYZED TEXT

		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE
AF	I01.00	KAK-	00 23	00H-03221	C				321K R CONJ
FILTER	N01.00	FIL+TR-Y	00 18	00H-0323	NDIIM0Y0	------N-----	------M-----		322 SUBJCT
**		**	00 20	00H-0324	*				INF COMMA
CIRCUITED	A01.00	NAPRAVLENN-Y E	00 30	00H-0325	AD0000 30	------N-----	------A-----	R400	323 MODIFER
COUPLER	N09.00	OTVETVITEL-I	00 26	00H-0326	NDIIM000	------N-----	------M-----		325 MODIFERM
**		**	00 23	00H-0327	*				INF COMMA
HYBRID	A09.00	GIBRIDN-YE	00 34	00H-0328	AD00000 0	------N-----	------A-----		326 MODIFER
CIRCUIT	N04.00	SXEM-Y	00 27	00H-0329	NDI2F0Y0	------N-----	------F-----		328 MODIFERM
AND	I01.00	-I	00 27	00H-03301	C				INF CONJNCT
SIMILAR	I01.00	T.P.-	00 27	00H-0331	A 0	------N-----	------A-----		328CMODIFER
**		**	00 29	00H-0332	*				INF COMMA
BE ABLE	V09.00	MOG-UT	00 41	00H-0333	VN 0P90000	00000TBAD0		B1B3B4	322 V PRED
QUICK	A09.00	BYSTR-O	00 13	00H-0334	AD00000 2 0	N----------	N----------		INF ADVB
BE PREPARED	V01.00	IZGOTAVLIVA- T+SJA	00 13	00H-0335	VN 0R40000	FR		B0B1B4B6	333 V MAST

A Series

Figure 79

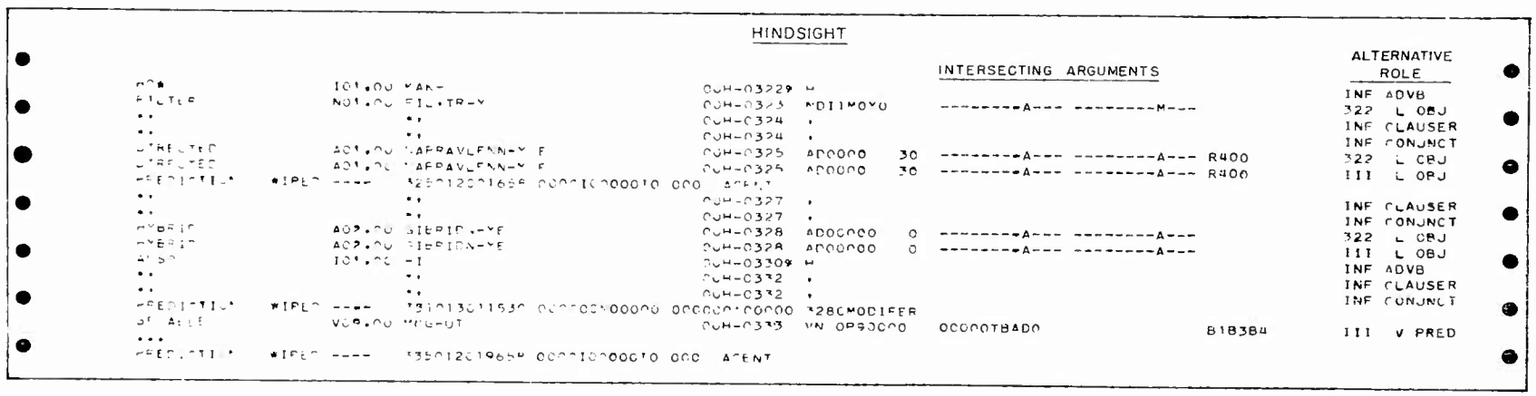
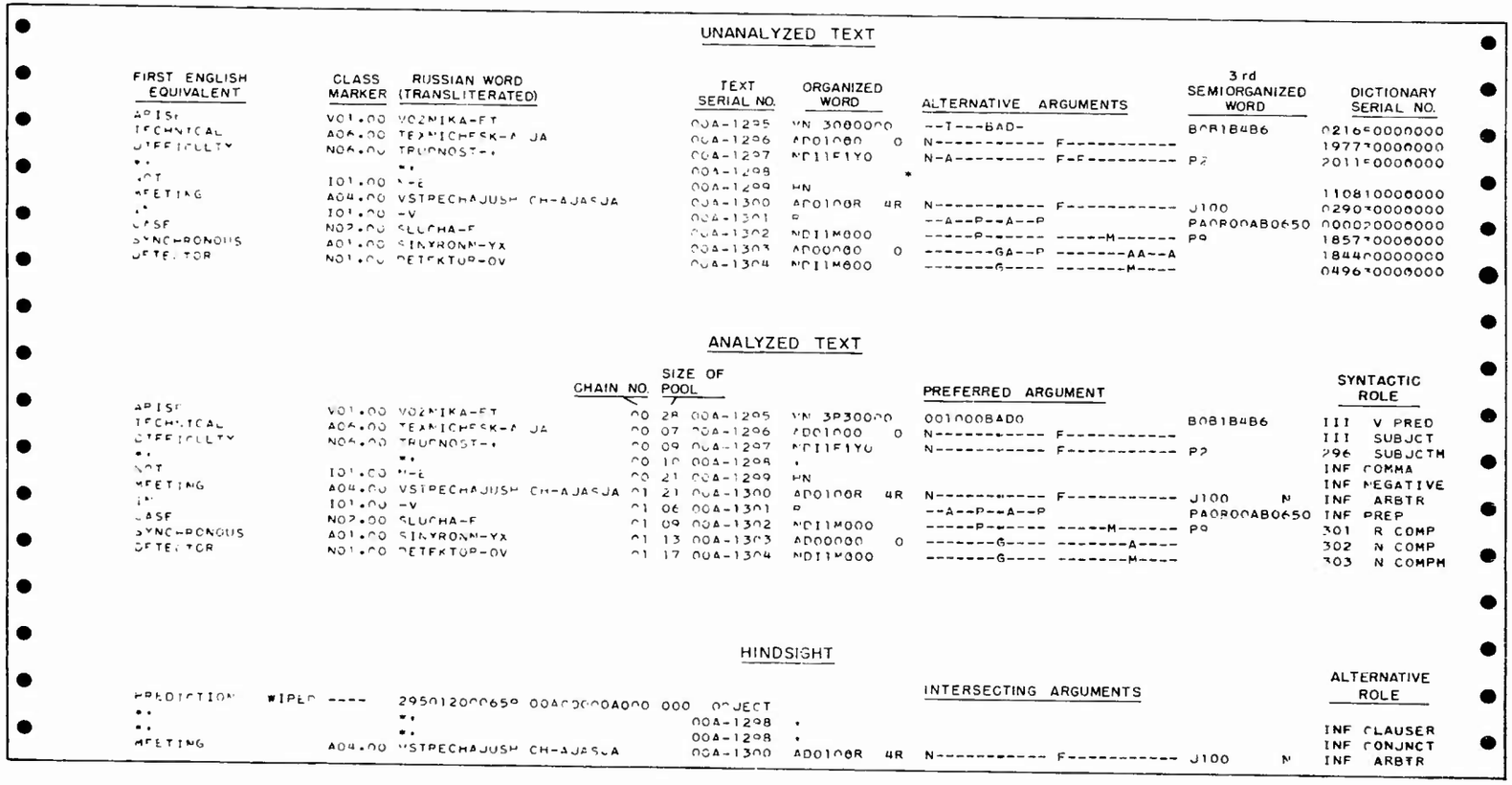


Figure 79 (continued)



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
APISE	V01.00	VOZMIKA-ET	00A-1295	VN 3080000		--I---BAD-		B0B1B4B6	0216*0000000
TECHNICAL	A04.00	TEXNICHESK-A JA	00A-1296	AD01000	0	N----------	F----------		1977*0000000
DIFFICULTY	N04.00	TRUDNOST-+	00A-1297	ND11E1Y0		N-A--------	F-F--------	P2	2011*0000000
*.		*.	00A-1298		*				
NOT	I01.00	N-E	00A-1299	HN					
MEETING	A04.00	VSTRECHAJUSH CH-AJASJA	00A-1300	AD0100R	4R	N----------	F----------	J100	1108100000000
IN	I01.00	-V	00A-1301	P		--A--P--A--P		PA0R00AB0650	0290*0000000
CASE	N02.00	SLUCHA-F	00A-1302	ND11M000		-----P------	-----M------	P9	0000*0000000
SYNCHRONOUS	A01.00	SINXRONN-YX	00A-1303	AD00000	0	-------GA--P	-------AA--A		1857*0000000
DETECTOR	N01.00	DETEKTOR-OV	00A-1304	ND11M000		-------G----	-------M----		1844*0000000
									0496*0000000

ANALYZED TEXT

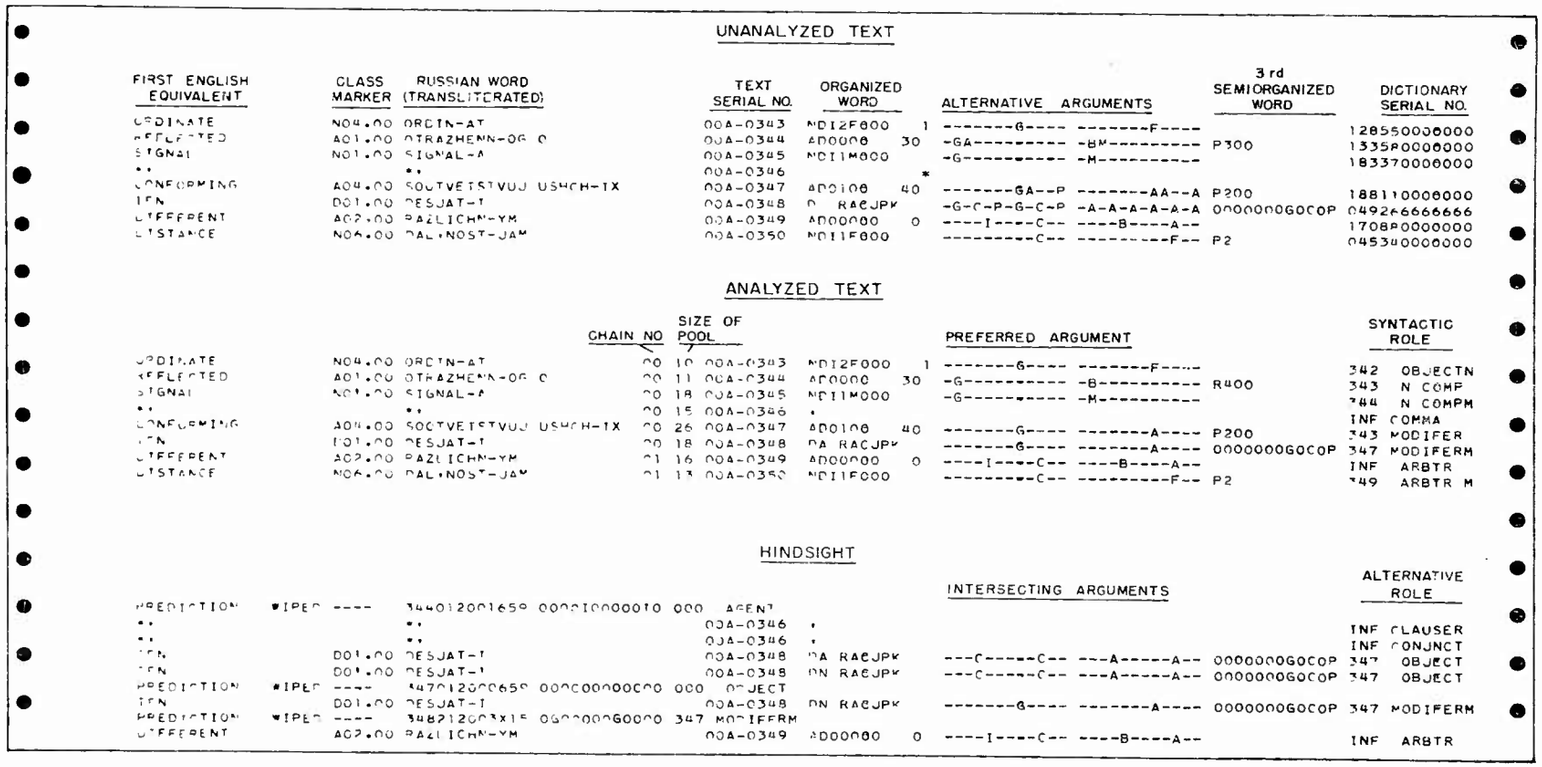
			CHAIN NO.	SIZE OF POOL				PREFERRED ARGUMENT			SYNTACTIC ROLE
APISE	V01.00	VOZMIKA-ET	00	28	00A-1295	VN 3P30000		001000BAD0		B0B1B4B6	III V PRED
TECHNICAL	A04.00	TEXNICHESK-A JA	00	07	00A-1296	AD01000	0	N----------	F----------		III SUBJCT
DIFFICULTY	N04.00	TRUDNOST-+	00	09	00A-1297	ND11E1Y0		N----------	F----------	P2	296 SUBJCTM
*.		*.	00	10	00A-1298	*					INF COMMA
NOT	I01.00	N-E	00	21	00A-1299	HN					INF NEGATIVE
MEETING	A04.00	VSTRECHAJUSH CH-AJASJA	01	21	00A-1300	AD0100R	4R	N----------	F----------	J100 N	INF ARBTR
IN	I01.00	-V	01	06	00A-1301	P		--A--P--A--P		PA0R00AB0650	INF PREP
CASE	N02.00	SLUCHA-F	01	09	00A-1302	ND11M000		-----P------	-----M------	P9	301 R COMP
SYNCHRONOUS	A01.00	SINXRONN-YX	01	13	00A-1303	AD00000	0	-------G----	-------A----		302 N COMP
DETECTOR	N01.00	DETEKTOR-OV	01	17	00A-1304	ND11M000		-------G----	-------M----		303 N COMPM

HINDSIGHT

								INTERSECTING ARGUMENTS			ALTERNATIVE ROLE
PREDICTION	WIPED	----	29501200065*	00A0000A000	000	OBJECT					
*.			*.			00A-1298	.				
*.			*.			00A-1298	.				INF CLAUSER
MEETING		A04.00	VSTRECHAJUSH CH-AJASJA			00A-1300	AD0100R 4R	N----------	F----------	J100 N	INF CONJNCT
											INF ARBTR

The Effect of a Negative on the Analysis of a Modifier

Figure 80



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
ORDINATE	N04.00	ORDIN-AT	00A-0343	ND12F000	1	-------G---- -------F----		128550000000
REFLECTED	A01.00	OTRAZHENN-OE O	00A-0344	AD0000	30	-GA---------- -BM----------	P300	1335P0000000
SIGNAL	N01.00	SIGNAL-A	00A-0345	ND11M000		-G---------*---- -M----------		183370000000
**		**	00A-0346		*			
CONFORMING	A04.00	SOOTVETSTVUJ USHCH-IX	00A-0347	AD0100	40	-------GA--P -------AA--A	P200	188110000000
IEN	D01.00	DESJAT-I	00A-0348	D RAEJPK		-G-C-P-G-C-P -A-A-A-A-A-A	0000000G0C0P	0492A6666666
DIFFERENT	A02.00	RAZLICHN-YM	00A-0349	AD00000	0	----I----C-- ----B----A--		1708P0000000
DISTANCE	N04.00	RAL'NOST-JAM	00A-0350	ND11F000		---------C-- ---------F--	P2	0453A0000000

ANALYZED TEXT

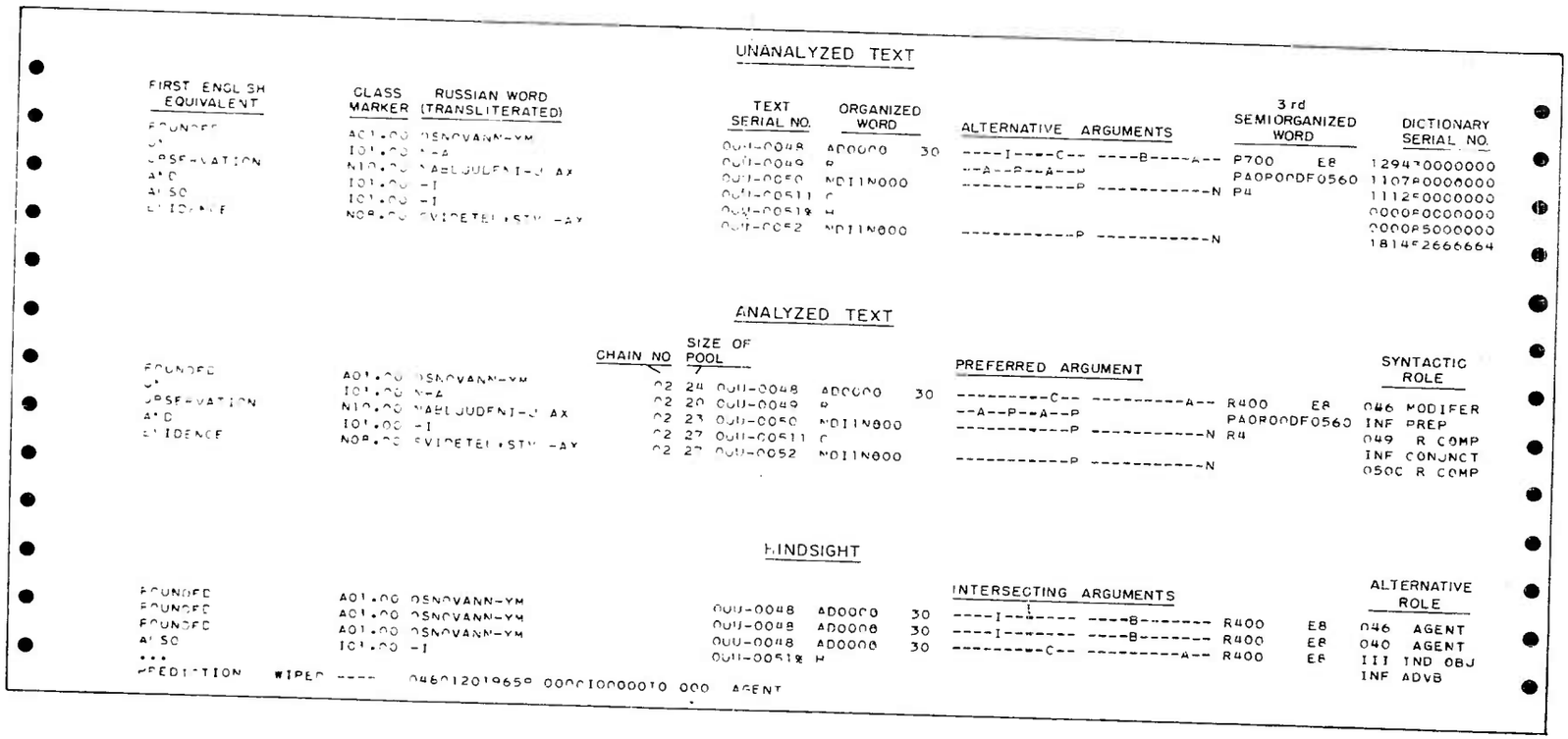
			CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
ORDINATE	N04.00	ORDIN-AT	00	10	00A-0343	ND12F000 1	-------G---- -------F----		342 OBJECTN
REFLECTED	A01.00	OTRAZHENN-OE O	00	11	00A-0344	AD0000 30	-G---------- -B----------	R400	343 N COMP
SIGNAL	N01.00	SIGNAL-A	00	18	00A-0345	ND11M000	-G---------*---- -M----------		344 N COMPM
**		**	00	15	00A-0346	*			INF COMMA
CONFORMING	A04.00	SOOTVETSTVUJ USHCH-IX	00	26	00A-0347	AD0100 40	-------G---- -------A----	P200	343 MODIFER
IEN	D01.00	DESJAT-I	00	18	00A-0348	DA RAEJPK	-------G---- -------A----	0000000G0C0P	347 MODIFERM
DIFFERENT	A02.00	RAZLICHN-YM	01	16	00A-0349	AD00000 0	----I----C-- ----B----A--		INF ARBTR
DISTANCE	N04.00	RAL'NOST-JAM	01	13	00A-0350	ND11F000	---------C-- ---------F--	P2	349 ARBTR M

HINDSIGHT

					INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
PREDICTION	*IPED	----	344012001650 0000100000I0 000	AGENT			
**		**		00A-0346 *			INF CLAUSER
**		**		00A-0346 *			INF CONJNCT
IEN	D01.00	DESJAT-I		00A-0348 DA RAEJPK	---C-----C-- ---A-----A--	0000000G0C0P	347 OBJECT
IEN	D01.00	DESJAT-I		00A-0348 DN RAEJPK	---C-----C-- ---A-----A--	0000000G0C0P	347 OBJECT
PREDICTION	*IPED	----	347012000650 0000000000C0 000	OBJECT			
IEN	D01.00	DESJAT-I		00A-0348 DN RAEJPK	-------G---- -------A----	0000000G0C0P	347 MODIFERM
PREDICTION	*IPED	----	348212003X15 0000000G0000 347	MODIFERM			
DIFFERENT	A02.00	RAZLICHN-YM		00A-0349 AD00000 0	----I----C-- ----B----A--		INF ARBTR

An Analysis with a Master-object Ambiguity

Figure 81



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	GLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD		DICTIONARY SERIAL NO.
FOUNDED	A01.00	OSNOVANN-YM	000-0048	AD0000	30	----I-----C--	----B-----A--	P700	E8	1294?0000000
OF	I01.00	-A	000-0049	P		--A--P--A--P		PA0P00DF0560		1107?0006000
OBSERVATION	N10.00	NABLJUDENI-J AX	000-0050	NDIIN000		----------P	----------N	P4		1112?0000000
AND	I01.00	-I	000-0051	C						0000?0000000
ALSO	I01.00	-I	000-0051	M						0000?5000000
EVIDENCE	N08.00	SVIDETEL'STV -AX	000-0052	NDIIN000		----------P	----------N			1814?2666664

ANALYZED TEXT

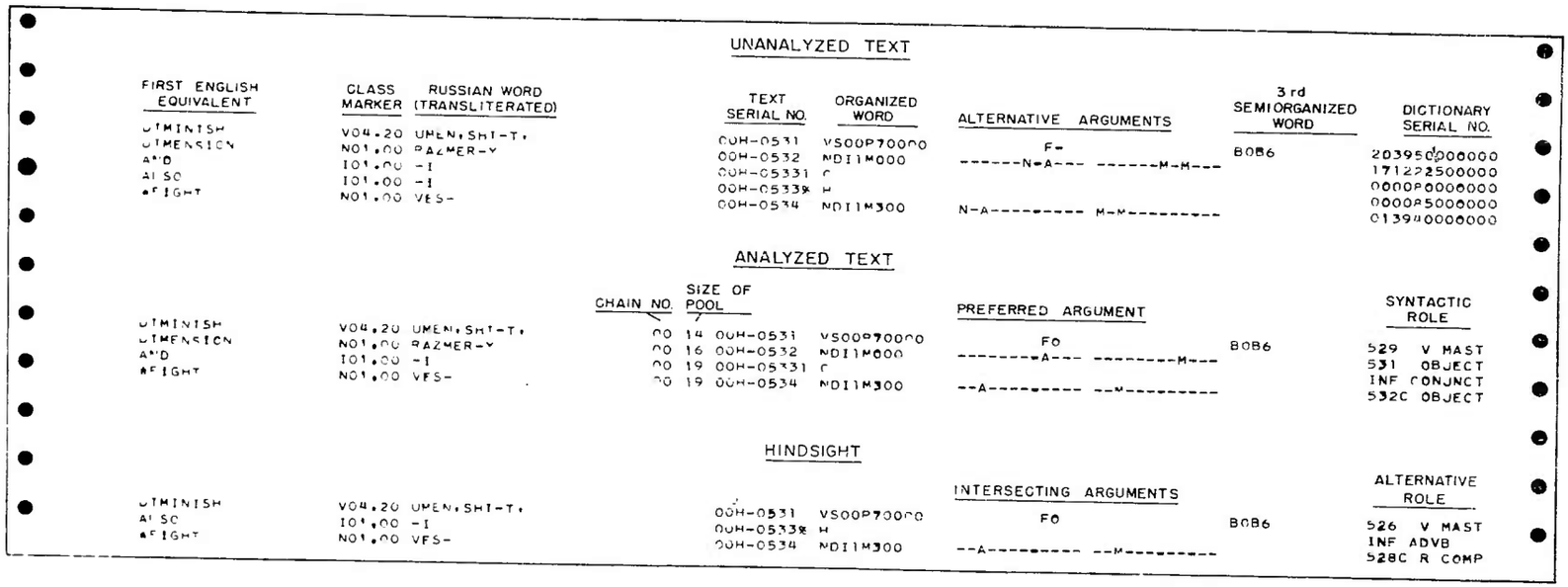
		CHAIN NO	SIZE OF POOL				PREFERRED ARGUMENT				SYNTACTIC ROLE
FOUNDED	A01.00 OSNOVANN-YM	02	24	000-0048	AD0000	30	----------C--	----------A--	R400	E8	046 MODIFER
OF	I01.00 N-A	02	20	000-0049	P		--A--P--A--P		PA0P00DF0560		INF PREP
OBSERVATION	N10.00 NABLJUDENI-J AX	02	23	000-0050	NDIIN000		----------P	----------N	P4		049 R COMP
AND	I01.00 -I	02	27	000-0051	C						INF CONJNCT
EVIDENCE	N08.00 SVIDETEL'STV -AX	02	27	000-0052	NDIIN000		----------P	----------N			050C R COMP

HINDSIGHT

					INTERSECTING ARGUMENTS				ALTERNATIVE ROLE
FOUNDED	A01.00 OSNOVANN-YM	000-0048	AD0000	30	----I-----1-----	----B--------	R400	E8	046 AGENT
FOUNDED	A01.00 OSNOVANN-YM	000-0048	AD0000	30	----I----------	----B--------	R400	E8	040 AGENT
FOUNDED	A01.00 OSNOVANN-YM	000-0048	AD0000	30	----------C--	----------A--	R400	E8	III IND OBJ
ALSO	I01.00 -I	000-0051	M						INF ADVB
...									
PREDICTION WIPED ----	046012019650 0000100000?0 000 AGENT								

A Compound Prepositional Complement

Figure 82



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
DIMINISH	V04.20	UMEN,SHI-T,	00H-0531	VS00P70000	F=	B0B6	20395@000000
DIMENSION	N01.00	RAZMER-Y	00H-0532	ND11M000	------N=A--- ------M-M---		171222500000
AND	I01.00	-I	00H-05331	C			0000P0000000
ALSO	I01.00	-I	00H-0533%	H			0000P5000000
WEIGHT	N01.00	VES-	00H-0534	ND11M300	N-A--------- M-M---------		01394000000

ANALYZED TEXT

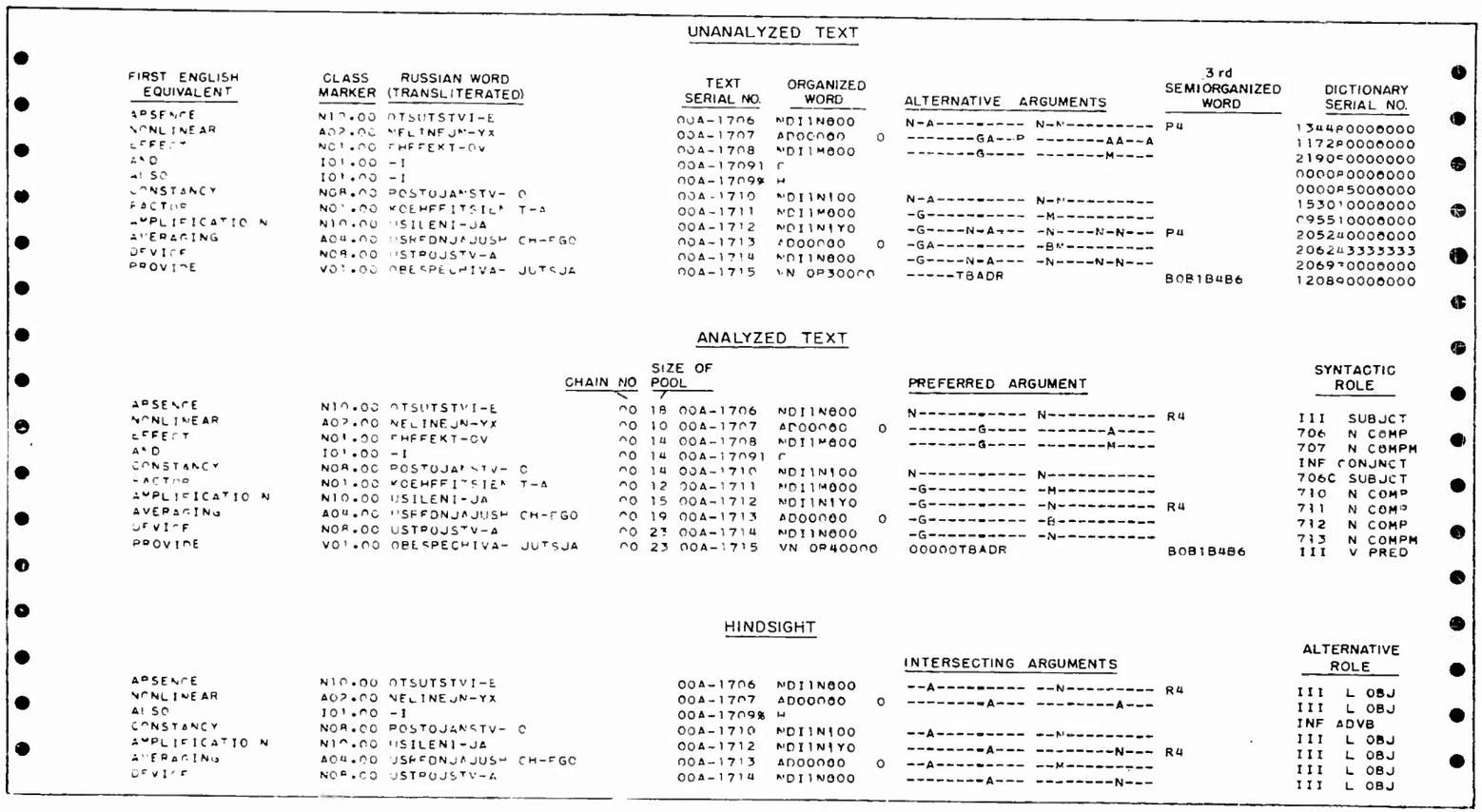
		CHAIN NO.	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
DIMINISH	V04.20 UMEN,SHI-T,	00	14	00H-0531	VS00P70000	F0	B0B6	529 V MAST
DIMENSION	N01.00 RAZMER-Y	00	16	00H-0532	ND11M000	--------A--- --------M---		531 OBJECT
AND	I01.00 -I	00	19	00H-05331	C			INF CONJNCT
WEIGHT	N01.00 VES-	00	19	00H-0534	ND11M300	--A--------- --M---------		532C OBJECT

HINDSIGHT

					INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
DIMINISH	V04.20 UMEN,SHI-T,	00H-0531	VS00P70000		F0	B0B6	526 V MAST
ALSO	I01.00 -I	00H-0533%	H				INF ADVB
WEIGHT	N01.00 VES-	00H-0534	ND11M300		--A--------- --M---------		528C R COMP

A Compound Object

Figure 83



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
ABSENCE	N10.00	OTSUTSTVI-E	00A-1706	ND11N800		N-A----------	N-N----------	P4	1344P0000000
NONLINEAR	A02.00	NELINEJN-YX	00A-1707	AD00000	0	--------GA--P	--------AA--A		1172P0000000
EFFECT	N01.00	EHFFEKT-OV	00A-1708	ND11M800		--------G-----	--------M-----		2190F0000000
AND	I01.00	-I	00A-17091	C					0000P0000000
ALSO	I01.00	-I	00A-1709%	H					0000P5000000
CONSTANCY	N08.00	POSTOJANSTV- O	00A-1710	ND11N100		N-A----------	N-N----------		153010000000
FACTOR	N01.00	KOEHFFITSIEN T-A	00A-1711	ND11M800		-G----------	-M----------		095510000000
AMPLIFICATIO N	N10.00	USILENI-JA	00A-1712	ND11N1YO		-G----N-A----	-N----N-N----	P4	2052400000000
AVERAGING	A04.00	USREDNJAJUSH CH-EGO	00A-1713	AD00000	0	-GA----------	-BM----------		206243333333
DEVICE	N08.00	USTROJSTV-A	00A-1714	ND11N800		-G----N-A----	-N----N-N----		2069T0000000
PROVIDE	V01.00	OBESPECHIVA- JUTSJA	00A-1715	VN 0P30000		-----TBADR		B0B1B4B6	1208900000000

ANALYZED TEXT

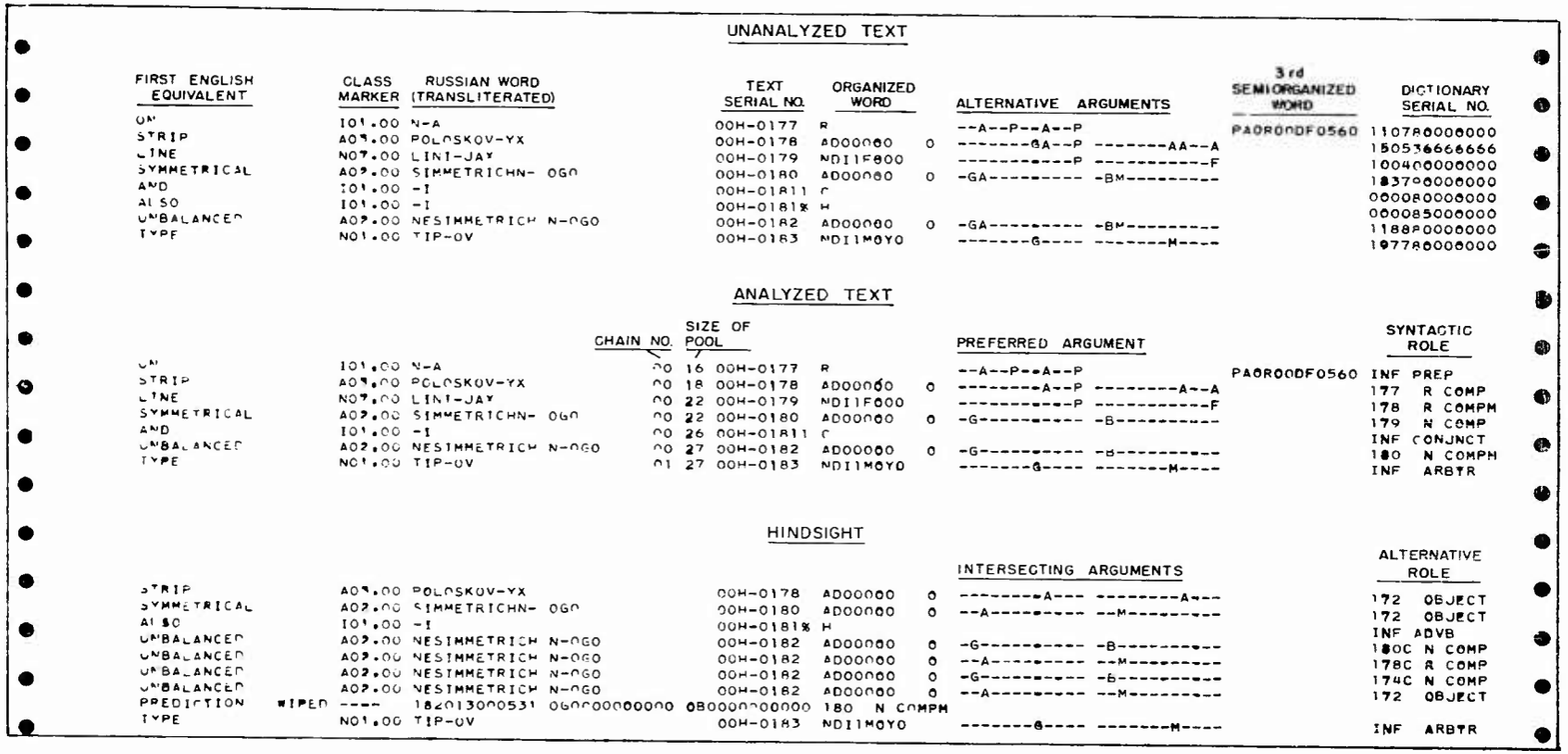
			CHAIN NO	SIZE OF POOL				PREFERRED ARGUMENT			SYNTACTIC ROLE
ABSENCE	N10.00	OTSUTSTVI-E	00	18	00A-1706	ND11N800		N----------	N----------	R4	III SUBJCT
NONLINEAR	A02.00	NELINEJN-YX	00	10	00A-1707	AD00000	0	-------G-----	--------A----		706 N COMP
EFFECT	N01.00	EHFFEKT-OV	00	14	00A-1708	ND11M800		-------G-----	--------M----		707 N COMPM
AND	I01.00	-I	00	14	00A-17091	C					INF CONJNCT
CONSTANCY	N08.00	POSTOJANSTV- O	00	14	00A-1710	ND11N100		N----------	N----------		706C SUBJCT
FACTOR	N01.00	KOEHFFITSIEN T-A	00	12	00A-1711	ND11M800		-G----------	-M----------		710 N COMP
AMPLIFICATIO N	N10.00	USILENI-JA	00	15	00A-1712	ND11N1YO		-G----------	-N----------	R4	711 N COMP
AVERAGING	A04.00	USREDNJAJUSH CH-EGO	00	19	00A-1713	AD00000	0	-G----------	-B----------		712 N COMP
DEVICE	N08.00	USTROJSTV-A	00	23	00A-1714	ND11N800		-G----------	-N----------		713 N COMPM
PROVIDE	V01.00	OBESPECHIVA- JUTSJA	00	23	00A-1715	VN 0P40000		00000TBADR		B0B1B4B6	III V PRED

HINDSIGHT

					INTERSECTING ARGUMENTS			ALTERNATIVE ROLE
ABSENCE	N10.00	OTSUTSTVI-E	00A-1706	ND11N800	--A----------	--N----------	R4	III L OBJ
NONLINEAR	A02.00	NELINEJN-YX	00A-1707	AD00000	0 --------A---	---------A---		III L OBJ
ALSO	I01.00	-I	00A-1709%	H				INF ADVB
CONSTANCY	N08.00	POSTOJANSTV- O	00A-1710	ND11N100	--A----------	--N----------		III L OBJ
AMPLIFICATIO N	N10.00	USILENI-JA	00A-1712	ND11N1YO	--------A---	---------N---	R4	III L OBJ
AVERAGING	A04.00	USREDNJAJUSH CH-EGO	00A-1713	AD00000	0 --A----------	--M----------		III L OBJ
DEVICE	N08.00	USTROJSTV-A	00A-1714	ND11N800	--------A---	---------N---		III L OBJ

A Compound Subject

Figure 84



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
ON	101.00	N-A	00H-0177	R		--A--P--A--P	PA0R00DF0560	110780000000
STRIP	A09.00	POLOSKOV-YX	00H-0178	AD00000	0	--------GA--P --------AA--A		150536666656
LINE	N07.00	LINI-JAY	00H-0179	ND11F800		----------P ----------F		100400000000
SYMMETRICAL	A02.00	SIMMETRICHN- OGO	00H-0180	AD00000	0	-GA---------- -BM----------		183700000000
AND	101.00	-I	00H-01811	C				000080000000
ALSO	101.00	-I	00H-01815	H				000085000000
UNBALANCED	A02.00	NESIMMETRICH N-OGO	00H-0182	AD00000	0	-GA---------- -BM----------		118820000000
TYPE	N01.00	TIP-OV	00H-0183	ND11M0Y0		-------G----- -------M-----		197780000000

ANALYZED TEXT

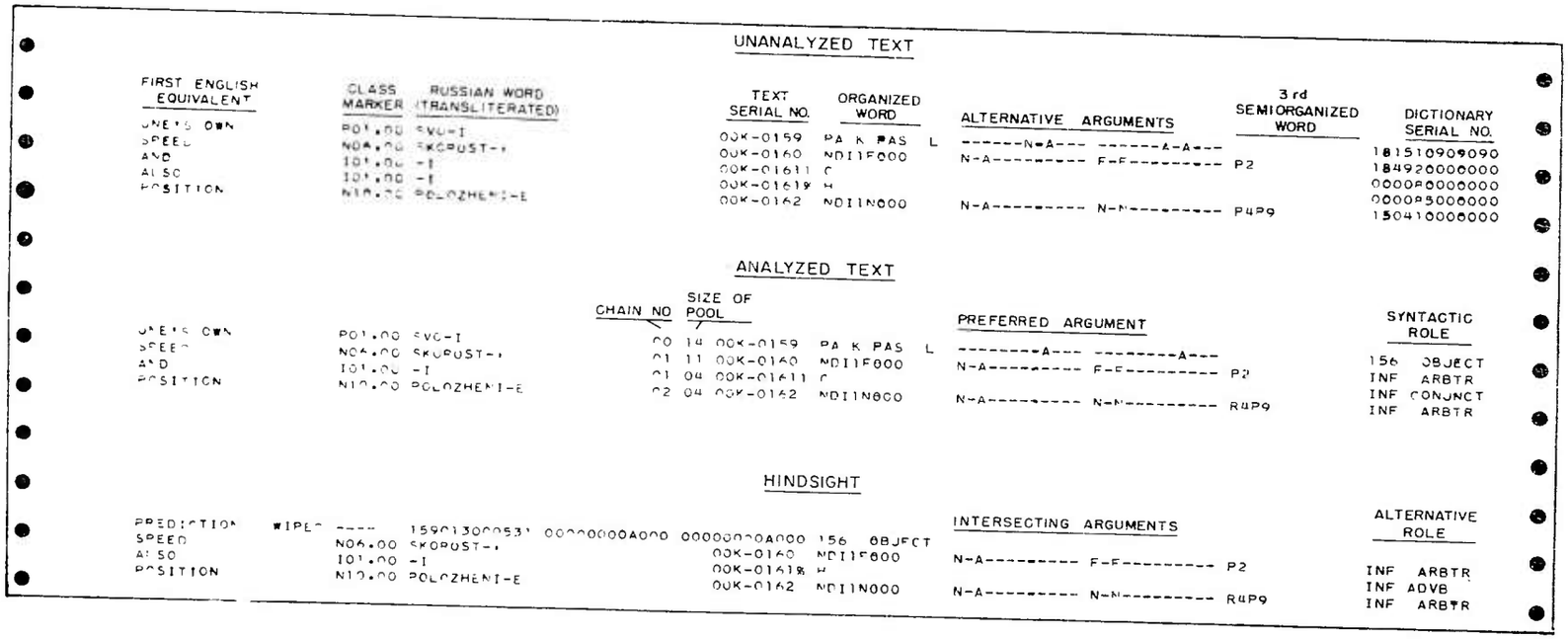
		CHAIN NO.	SIZE OF POOL				PREFERRED ARGUMENT		SYNTACTIC ROLE
ON	101.00	N-A	00	16	00H-0177	R	--A--P--A--P	PA0R00DF0560	INF PREP
STRIP	A09.00	POLOSKOV-YX	00	18	00H-0178	AD00000 0	--------A--P --------A--A		177 R COMP
LINE	N07.00	LINI-JAY	00	22	00H-0179	ND11F800	----------P ----------F		178 R COMPM
SYMMETRICAL	A02.00	SIMMETRICHN- OGO	00	22	00H-0180	AD00000 0	-G---------- -B----------		179 N COMP
AND	101.00	-I	00	26	00H-01811	C			INF CONJNCT
UNBALANCED	A02.00	NESIMMETRICH N-OGO	00	27	00H-0182	AD00000 0	-G---------- -B----------		180 N COMPH
TYPE	N01.00	TIP-OV	01	27	00H-0183	ND11M0Y0	-------G----- -------M-----		INF ARBTR

HINDSIGHT

						INTERSECTING ARGUMENTS	ALTERNATIVE ROLE
STRIP	A09.00	POLOSKOV-YX	00H-0178	AD00000	0	--------A--- --------A---	172 OBJECT
SYMMETRICAL	A02.00	SIMMETRICHN- OGO	00H-0180	AD00000	0	--A---------- --M----------	172 OBJECT
ALSO	101.00	-I	00H-01815	H			INF ADVB
UNBALANCED	A02.00	NESIMMETRICH N-OGO	00H-0182	AD00000	0	-G---------- -B----------	180C N COMP
UNBALANCED	A02.00	NESIMMETRICH N-OGO	00H-0182	AD00000	0	--A---------- --M----------	178C R COMP
UNBALANCED	A02.00	NESIMMETRICH N-OGO	00H-0182	AD00000	0	-G---------- -B----------	174C N COMP
UNBALANCED	A02.00	NESIMMETRICH N-OGO	00H-0182	AD00000	0	--A---------- --M----------	172 OBJECT
PREDICTION WIPED	----	182013000531	0600000000000	0B0000000000	180 N COMPM		
TYPE	N01.00	TIP-OV	00H-0183	ND11M0Y0		-------G----- -------M-----	INF ARBTR

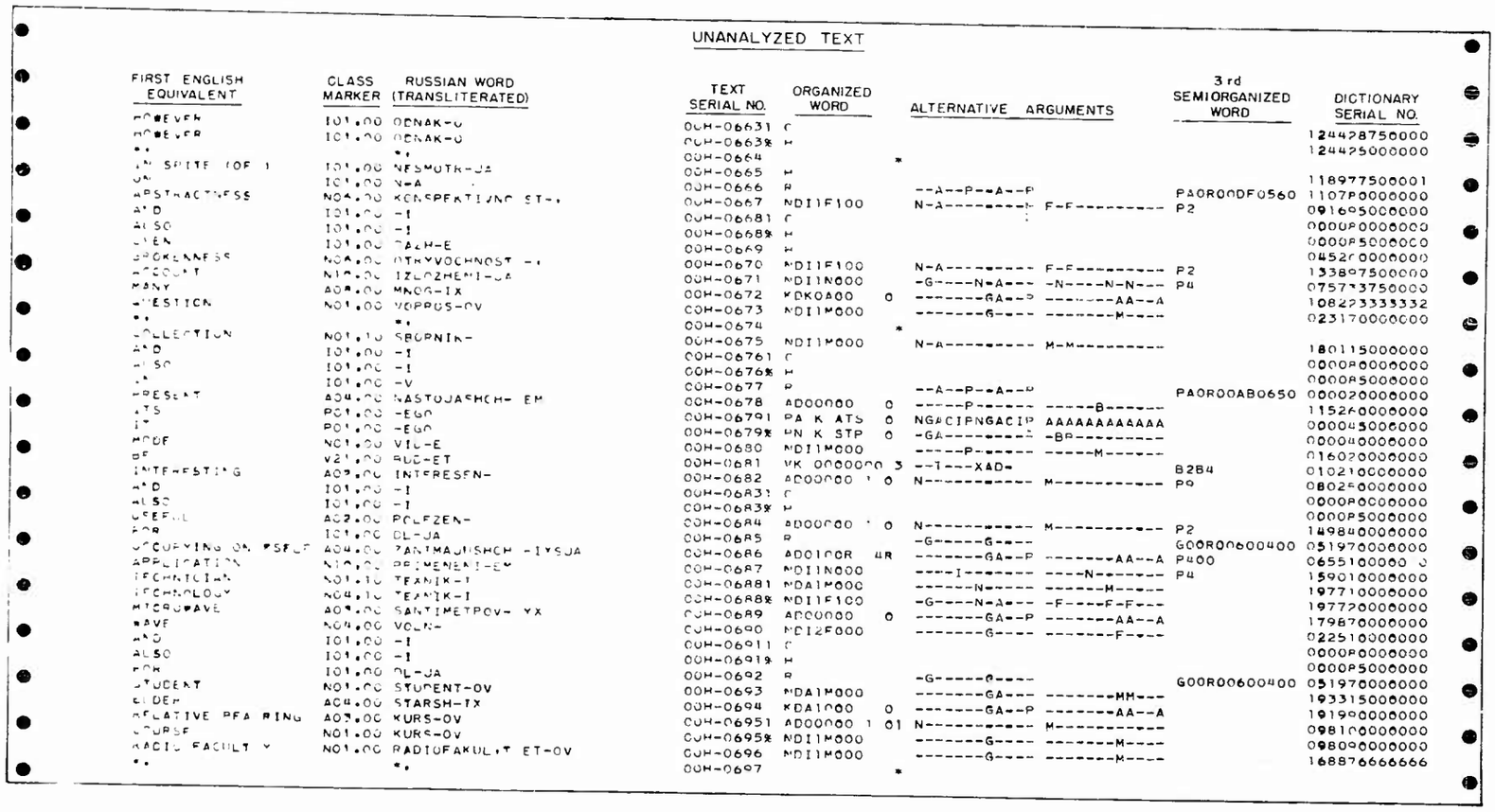
Two Compound Singular Adjectives with One Plural Master

Figure 85



A Plural Adjective with Compound Singular Masters

Figure 86



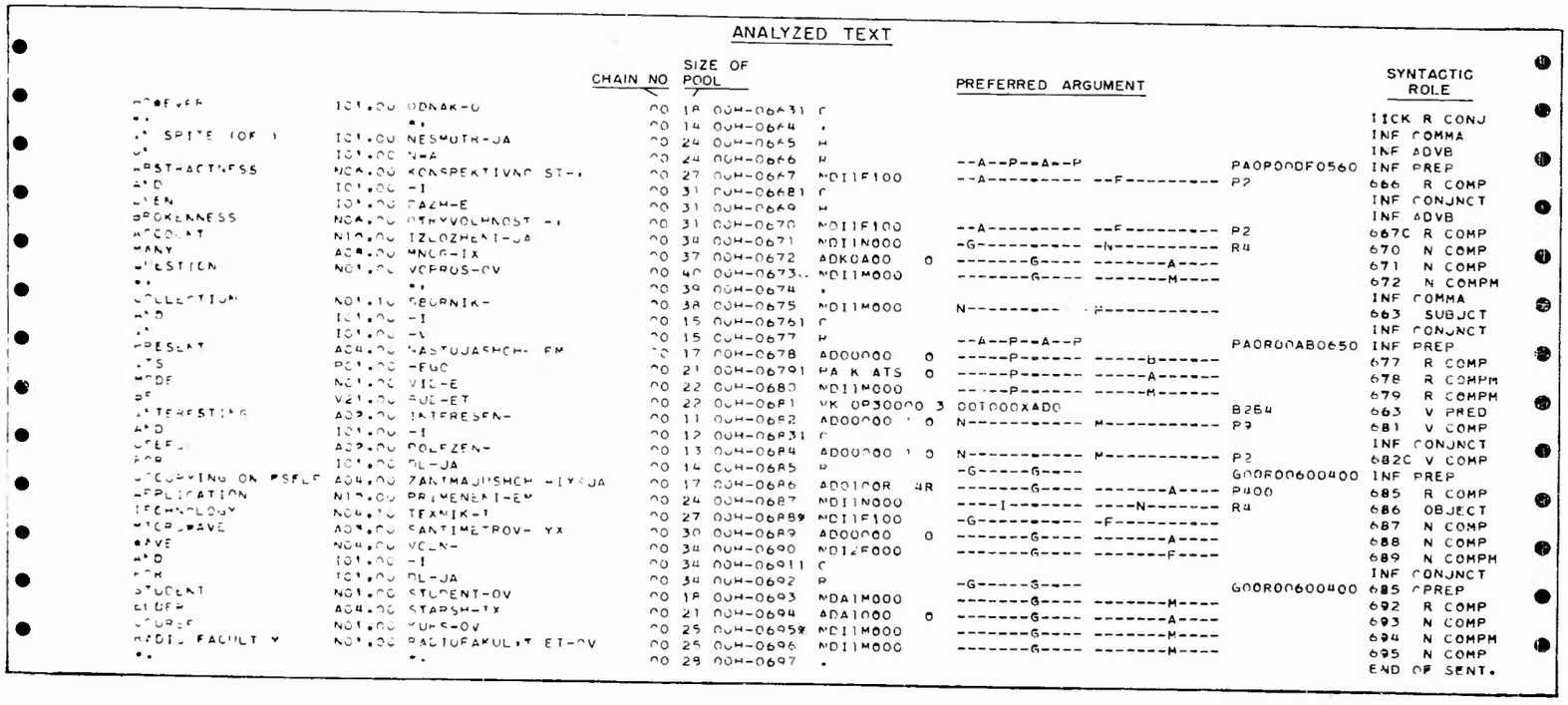
UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)
HOWEVER	I01.00	ODNAK-O
HOWEVER	I01.00	ODNAK-O
*.		*.
IN SPITE (OF)	I01.00	NESMOTR-JA
IN	I01.00	V-A
ABSTRACTNESS	N04.00	KONSPEKTIVNO ST-.
AND	I01.00	-I
ALSO	I01.00	-I
AVEN	I01.00	DAZH-E
BROKENNESS	N04.00	OTRYVOCHNOST -.
ACCOUNT	N10.00	IZLOZHEMI-JA
MANY	A08.00	MNOG-IX
QUESTION	N01.00	VOPROS-OV
*.		*.
COLLECTION	N01.10	SBORNIK-
AND	I01.00	-I
ALSO	I01.00	-I
AN	I01.00	-V
PRESENT	A04.00	NASTOJASHCH- EM
ATS	P01.00	-EGO
IT	P01.00	-EGO
MODE	N01.00	VID-E
BE	V21.00	BUD-ET
INTERESTING	A09.00	INTERESEN-
AND	I01.00	-I
ALSO	I01.00	-I
USEFUL	A02.00	POLEZEN-
FOR	I01.00	DL-JA
OCCUPYING ON ESELF	A04.00	ZANIMAJUSHCH -IYSJA
APPLICATION	N10.00	PRIMENENI-EM
TECHNICIAN	N01.10	TEKNIK-I
TECHNOLOGY	N04.10	TEKNIK-I
MICROWAVE	A09.00	SANTIMETROV- YX
WAVE	N04.00	VOLN-
AND	I01.00	-I
ALSO	I01.00	-I
FOR	I01.00	DL-JA
STUDENT	N01.00	STUDENT-OV
ELDER	A04.00	STARSH-IX
RELATIVE PFA RING	A09.00	KURS-OV
COURSE	N01.00	KURS-OV
RADIO FACULT Y	N01.00	RADIOFAKUL.T ET-OV
*.		*.

TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
00H-06631	C					124428750000
00H-06638	H					124425000000
00H-0664		*				
00H-0665	H					118977500001
00H-0666	R		--A--P--A--P		PA0R00DF0560	1107P0000000
00H-0667	NDIIF100		N-A----------	F-F----------	P2	091695000000
00H-06681	C					0000P0000000
00H-0668%	H					0000P5000000
00H-0669	H					04526000000
00H-0670	NDIIF100		N-A----------	F-F----------	P2	133897500000
00H-0671	NDIIN000		-G-----N-A----	-N-----N-N---	P4	075733750000
00H-0672	KDKOA00	0	-------GA--P	-------AA--A		108233333332
00H-0673	NDIIM000		-------G-----	-------M-----		023170000000
00H-0674		*				
00H-0675	NDIIM000		N-A----------	M-M----------		180115000000
00H-06761	C					0000P0000000
00H-0676%	H					0000P5000000
00H-0677	R		--A--P--A--P		PA0R00AB0650	000020000000
00H-0678	AD00000	0	-----P------	-----B------		115260000000
00H-06791	PA K ATS	0	NGACIPNGACIP	AAAAAAAAAAAA		000045000000
00H-0679%	PN K STP	0	-GA----------	-BP----------		000040000000
00H-0680	NDIIM000		-----P------	-----M------		016020000000
00H-0681	VK 0000000	3	--I---XAD-		B2B4	010210000000
00H-0682	AD00000	0	N----------	M----------	P0	080250000000
00H-06831	C					0000P0000000
00H-0683%	H					0000P5000000
00H-0684	AD00000	0	N----------	M----------	P2	149840000000
00H-0685	R		-G-----G----		G00R00600400	051970000000
00H-0686	AD0100R	4R	-------GA--P	-------AA--A	P400	065510000000
00H-0687	NDIIN000		----I-------	-----N------	P4	159010000000
00H-06881	NDAIM000		------N-----	------M-----		197710000000
00H-0688%	NDIIF100		-G----N-A----	-F----F-F---		197720000000
00H-0689	AD00000	0	-------GA--P	-------AA--A		179870000000
00H-0690	NDI2F000		-------G-----	-------F-----		022510000000
00H-06911	C					0000P0000000
00H-0691%	H					0000P5000000
00H-0692	R		-G-----G----		G00R00600400	051970000000
00H-0693	NDAIM000		-------GA----	-------MM----		193315000000
00H-0694	KDA1000	0	-------GA--P	-------AA--A		191900000000
00H-06951	AD00000	01	N----------	M----------		098100000000
00H-0695%	NDIIM000		-------G-----	-------M-----		098090000000
00H-0696	NDIIM000		-------G-----	-------M-----		168876666666
00H-0697		*				

A Sentence with Four Infinite Conjunctions

Figure 87



ANALYZED TEXT

		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE
[illegible]	IC1.OC ODNAK-O	00	1A	00H-0643	C				
.,	.,	00	14	00H-0644	.				IICK R CONJ
.* SPITE (OF)	IC1.OC NESMOTR-JA	00	24	00H-0645	H				INF COMMA
,*	IC1.OC N-A	00	24	00H-0646	P	--A--P--A--P			INF ADVB
ABSTRACTNESS	NCA.OC KONSPEKTIVNOST-I	00	27	00H-0647	NDIIF100	--A----------	--F----------	PA0P00DF0560	INF PREP
AND	IC1.OC -I	00	31	00H-06481	C			P2	646 R COMP
EVEN	IC1.OC DAZH-E	00	31	00H-0649	H				INF CONJNCT
BROKENNESS	NCA.OC OTKRYVOLENNOST -I	00	31	00H-0670	NDIIF100	--A----------	--F----------	P2	INF ADVB
ACCENT	N1P.OC IZLOZHENI-JA	00	34	00H-0671	NDIIN000	-G----------	-N----------	R4	667C R COMP
MANY	AC#.OC MNOG-IX	00	37	00H-0672	ADK0A00 0	-------G----	--------A----		670 N COMP
QUESTION	NC1.OC VOPROS-OV	00	40	00H-0673	NDIIM000	-------G----	--------M----		671 N COMP
.,	.,	00	39	00H-0674	.				672 N COMPM
COLLECTION	NC1.1C SBORNIK-	00	3A	00H-0675	NDIIM000	N----------	P----------		INF COMMA
AND	IC1.OC -I	00	15	00H-06761	C				663 SUBJCT
,*	IC1.OC -N	00	15	00H-0677	H				INF CONJNCT
PRESENT	AC4.OC NASTOJASHCH- EM	00	17	00H-0678	AD00000 0	--A--P--A--P		PA0R00AB0650	INF PREP
,*S	PC1.OC -EGO	00	21	00H-06791	PA K ATS 0	-----P------	-----b------		677 R COMP
MODE	NC1.OC VID-E	00	22	00H-0680	NDIIM000	-----P------	-----A------		678 R COMPM
OF	V2I.OC BUD-ET	00	22	00H-0681	VK OP30000 3	-----P------	-----M------		679 R COMPM
INTERESTING	AC?.OC INTERESN-	00	11	00H-0682	AD00000 0	00T000XAD0		B264	663 V PRED
AND	IC1.OC -I	00	12	00H-06831	C	N----------	M----------	P?	681 V COMP
USEFUL	AC?.OC POLEZEN-	00	13	00H-0684	AD00000 0	N----------	M----------	P2	INF CONJNCT
FOR	IC1.OC DL-JA	00	14	00H-0685	P	-G-----G----		G00R00600400	682C V COMP
OCCUPYING ON PSELF	AC4.OC ZANIMAJUSHCH -IYSJA	00	17	00H-0686	AD01C0R 4R	-------G----	--------A----	P400	INF PREP
APPLICATION	N1P.OC PRIMENENI-EM	00	24	00H-0687	NDIIN000	----I-------	----N-------	R4	685 R COMP
TECHNOLOGY	NC4.1C TEXNIK-I	00	27	00H-0688	NDIIF100	-G----------	-F----------		686 OBJECT
MICROWAVE	AC?.OC SANTIMETROV- YX	00	30	00H-0689	AD00000 0	-------G----	--------A----		687 N COMP
WAVE	NC4.OC VOLN-	00	34	00H-0690	NDIFF000	-------G----	--------F----		688 N COMP
AND	IC1.OC -I	00	34	00H-0691	C				689 N COMPM
FOR	IC1.OC DL-JA	00	34	00H-0692	P	-G-----G----		G00R00600400	INF CONJNCT
STUDENT	NC1.OC STUDENT-OV	00	1A	00H-0693	NDA1M000	-------G----	--------M----		685 PREP
READER	AC4.OC STARSH-IX	00	21	00H-0694	ADA1000 0	-------G----	--------A----		692 R COMP
COURSE	NC1.OC KURS-OV	00	25	00H-0695	NDIIM000	-------G----	--------M----		693 N COMP
RADIO FACULTY	NC1.OC RADIOFAKUL'T ET-OV	00	25	00H-0696	NDIIM000	-------G----	--------M----		694 N COMPM
.,	.,	00	28	00H-0697	.				695 N COMP
									END OF SENT.

Figure 87 (continued)

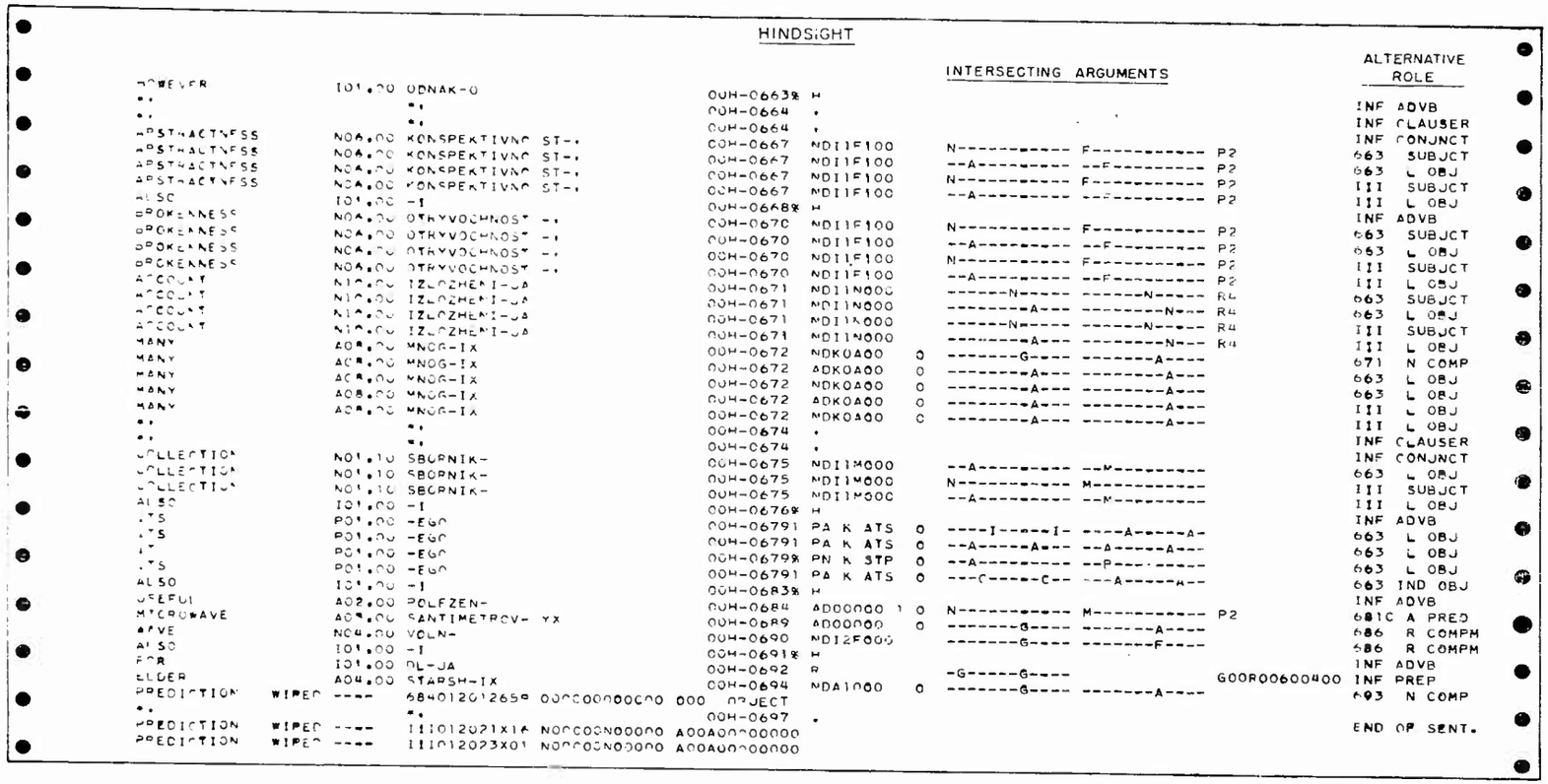
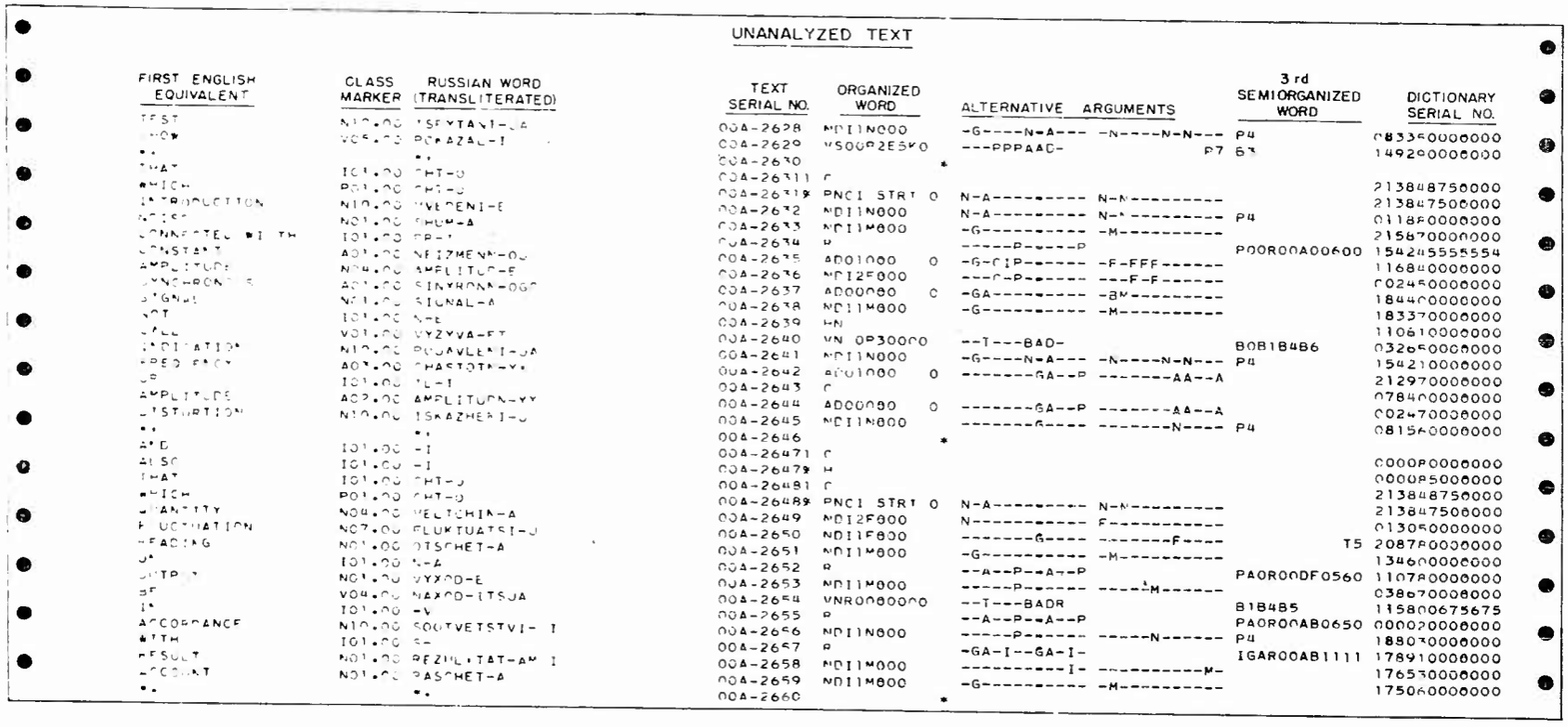


Figure 87 (continued)



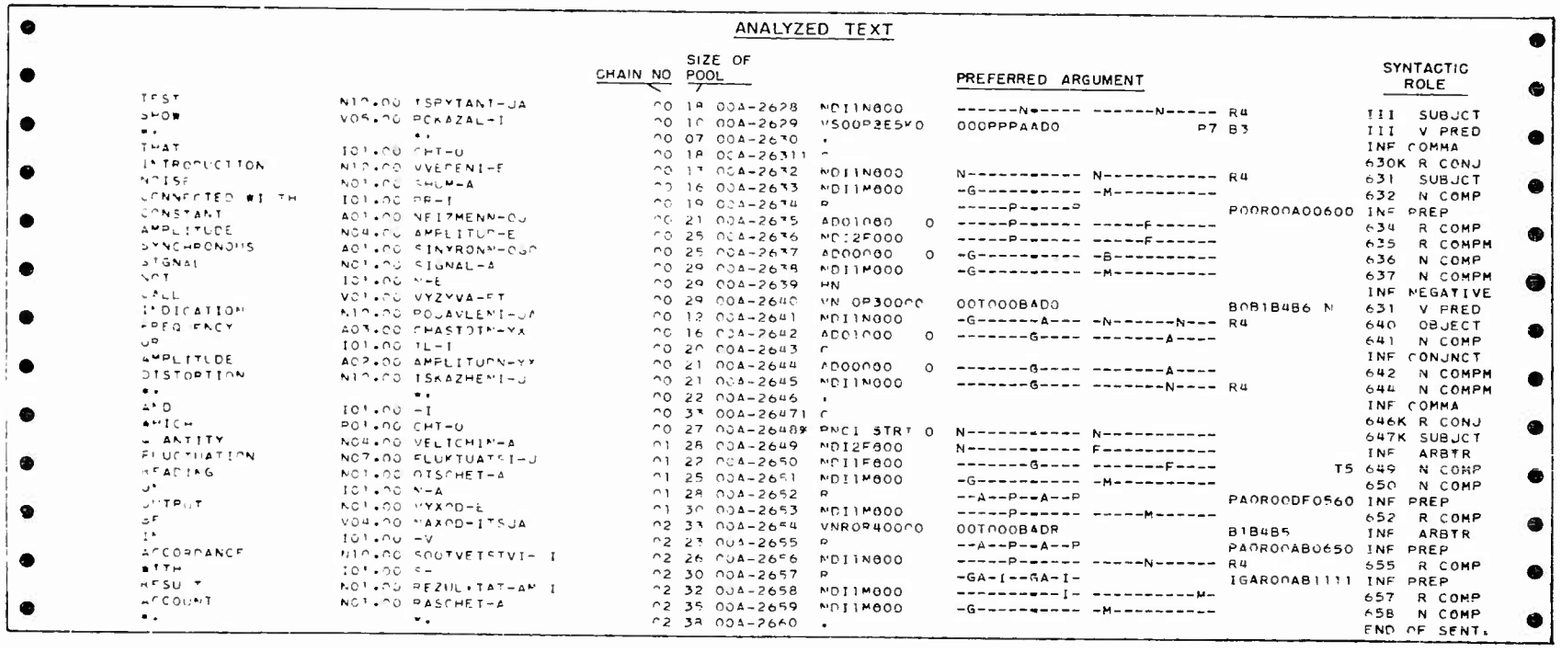
UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)
TEST	N10.00	TSEYTANI-A
[illegible]	V05.03	PORAZAL-I
,,		,,
THAT	I01.00	CHT-O
WHICH	P01.00	CHT-O
INTRODUCTION	N10.00	VVEDENI-E
[illegible]	N01.00	CHUM-A
CONNECTED WITH	I01.00	SV-I
CONSTANT	A01.00	NEIZMENN-OJ
AMPLITUDE	N04.00	AMPLITUD-E
SYNCHRONIZE	A01.00	SINKHRONN-OGO
SIGNAL	N01.00	SIGNAL-A
NOT	I01.00	NE
CALL	V01.00	VYZYVA-ET
MODULATION	N10.00	MODULYATSI-JA
SPEED RATE	A01.00	CHASTOTN-YY
US	I01.00	NAS-I
AMPLITUDE	A02.00	AMPLITUDN-YY
DISTORTION	N10.00	ISKAZHENI-E
,,		,,
AND	I01.00	-I
ALSO	I01.00	-I
THAT	I01.00	CHT-O
WHICH	P01.00	CHT-O
QUANTITY	N04.00	KOLICHIN-A
FLUCTUATION	N07.00	FLUKTUATSI-JA
HEADING	N01.00	OTSCHET-A
OF	I01.00	S-A
OUTPUT	N01.00	VYKHOD-E
BY	V04.00	NAKHOD-ITSJA
IN	I01.00	-V
ACCORDANCE	N10.00	SOOTVETSTVI- I
WITH	I01.00	S-
RESULT	N01.00	REZUL'TAT-AM I
ACCOUNT	N01.00	RASCHET-A
,,		,,

TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
00A-2628	MDI1N000		-G----N-A---	-N----N-N---	P4	083560000000
00A-2629	VS00P2ES00		---PPPAAD-	P7	B3	149290006000
00A-2630		*				
00A-26311	C					213848750000
00A-26319	PNCI STRT	0	N-A----------	N-N----------		213847500000
00A-2632	MDI1N000		N-A----------	N-N----------	P4	011850000000
00A-2633	MDI1M000		-G----------	-M----------		215870000000
00A-2634	P		-----P-----P		P00R00A00600	154245555554
00A-2635	ADD1000	0	-G-CIP------	-F-FFF------		116840000000
00A-2636	MDI2F000		---C-P------	---F-F------		002450000000
00A-2637	ADD0080	C	-GA----------	-BM----------		184400000000
00A-2638	MDI1M000		-G----------	-M----------		183370000000
00A-2639	HN					110610000000
00A-2640	VN 0P30000		--I---BAD-		B0B1B4B6	032650000000
00A-2641	MDI1N000		-G----N-A---	-N----N-N---	P4	154210000000
00A-2642	ADD1000	0	-------GA--P	-------AA--A		212970000000
00A-2643	C					078400000000
00A-2644	ADD0080	0	-------GA--P	-------AA--A		002470000000
00A-2645	MDI1N000		-------G----	-------N----	P4	081560000000
00A-2646		*				
00A-26471	C					0000P0000000
00A-26479	H					000085000000
00A-26481	C					213848750000
00A-26489	PNCI STRT	0	N-A----------	N-N----------		213847500000
00A-2649	MDI2F000		N----------	F----------		013050000000
00A-2650	MDI1F000		-------G----	-------F----	T5	208780000000
00A-2651	MDI1M000		-G----------	-M----------		134600000000
00A-2652	P		--A--P--A--P		PA0R00DF0560	110780000000
00A-2653	MDI1M000		-----P------	-----M------		038670000000
00A-2654	VNR0080000		--I---BADR		B1B4B5	115800675675
00A-2655	P		--A--P--A--P		PA0R00AB0650	000020000000
00A-2656	MDI1N000		-----P------	-----N------	P4	188070000000
00A-2657	P		-GA-I--GA-I-		IGAR00AB1111	178910000000
00A-2658	MDI1M000		----------I-	----------M-		176530000000
00A-2659	MDI1M000		-G----------	-M----------		175060000000
00A-2660		*				

A Compound Relative Conjunction

Figure 88



ANALYZED TEXT

		CHAIN NO	SIZE OF POOL		PREFERRED ARGUMENT		SYNTACTIC ROLE
TEST	N10.00 ISPYTANI-JA	00	18 00A-2628	MDI1N000	------N----- ------N-----	R4	III SUBJCT
SHOW	V05.00 POKAZAL-I	00	10 00A-2629	VS00P3E5K0	000PPPAAD0 P7	B3	III V PRED
,,	,,	00	07 00A-2630	,			INF COMMA
THAT	I01.00 CHT-O	00	18 00A-26311	C			630K R CONJ
INTRODUCTION	N10.00 VVEDENI-E	00	13 00A-2632	MDI1N000	N---------- N----------	R4	631 SUBJCT
NOISE	N01.00 SHUM-A	00	16 00A-2633	MDI1M000	-G--------- -M---------		632 N COMP
CONNECTED WITH	I01.00 SV-I	00	19 00A-2634	P	-----P-----P	P00R00A00600	INF PREP
CONSTANT	A01.00 NEIZMENN-OJ	00	21 00A-2635	AD01000 0	-----P------ -----F------		634 R COMP
AMPLITUDE	N04.00 AMPLITUD-E	00	25 00A-2636	MD12F000	-----P------ -----F------		635 R COMPM
SYNCHRONOUS	A01.00 SINXRONN-OSC	00	25 00A-2637	AD00000 0	-G--------- -B---------		636 N COMP
SIGNAL	N01.00 SIGNAL-A	00	29 00A-2638	MDI1M000	-G--------- -M---------		637 N COMPM
NOT	I01.00 N-E	00	29 00A-2639	HN			INF NEGATIVE
CALL	V01.00 VYZYVA-ET	00	29 00A-2640	VN 0P30000	00T000BAD0	B0B1B4B6 N	631 V PRED
INDICATION	N10.00 POKAZYENI-JA	00	12 00A-2641	MDI1N000	-G------A--- -N------N---	R4	640 OBJECT
FREQUENCY	A03.00 CHASTOTN-YX	00	16 00A-2642	AD01000 0	-------G---- -------A----		641 N COMP
OR	I01.00 IL-I	00	20 00A-2643	C			INF CONJNCT
AMPLITUDE	A02.00 AMPLITUDN-YX	00	21 00A-2644	AD00000 0	-------G---- -------A----		642 N COMPM
DISTORTION	N10.00 ISKAZHENI-J	00	21 00A-2645	MDI1N000	-------G---- -------N----	R4	644 N COMPM
,,	,,	00	22 00A-2646	,			INF COMMA
AND	I01.00 -I	00	33 00A-26471	C			646K R CONJ
WHICH	P01.00 CHT-O	00	27 00A-26489	PNC1 STRT 0	N---------- N----------		647K SUBJCT
= ANTITY	N04.00 VELICHIN-A	01	28 00A-2649	MDI2F000	N---------- F----------		INF ARBTR
FLUCTUATION	N07.00 FLUKTUATSI-J	01	22 00A-2650	MDI1F000	-------G---- -------F----	T5	649 N COMP
READING	N01.00 OTSCHET-A	01	25 00A-2651	MDI1M000	-G--------- -M---------		650 N COMP
OF	I01.00 V-A	01	28 00A-2652	P	--A--P--A--P	PA0R00DF0560	INF PREP
OUTPUT	N01.00 VYXOD-E	01	30 00A-2653	MDI1M000	-----P------ -----M------		652 R COMP
OF	V04.00 VAXOD-ITSJA	02	33 00A-2654	VNR0P40000	00T000BADR	B1B4B5	INF ARBTR
IN	I01.00 -V	02	23 00A-2655	P	--A--P--A--P	PA0R00AB0650	INF PREP
ACCORDANCE	N10.00 SOOTVETSTVI- I	02	26 00A-2656	MDI1N000	-----P------ -----N------	R4	655 R COMP
WITH	I01.00 S-	02	30 00A-2657	P	-GA-I--GA-I-	IGAR00AB1111	INF PREP
RESULT	N01.00 REZUL'TAT-AM I	02	32 00A-2658	MDI1M000	----------I- ----------M-		657 R COMP
ACCOUNT	N01.00 RASCHET-A	02	35 00A-2659	MDI1M000	-G--------- -M---------		658 N COMP
,,	,,	02	38 00A-2660	,			END OF SENT.

Figure 88 (continued)

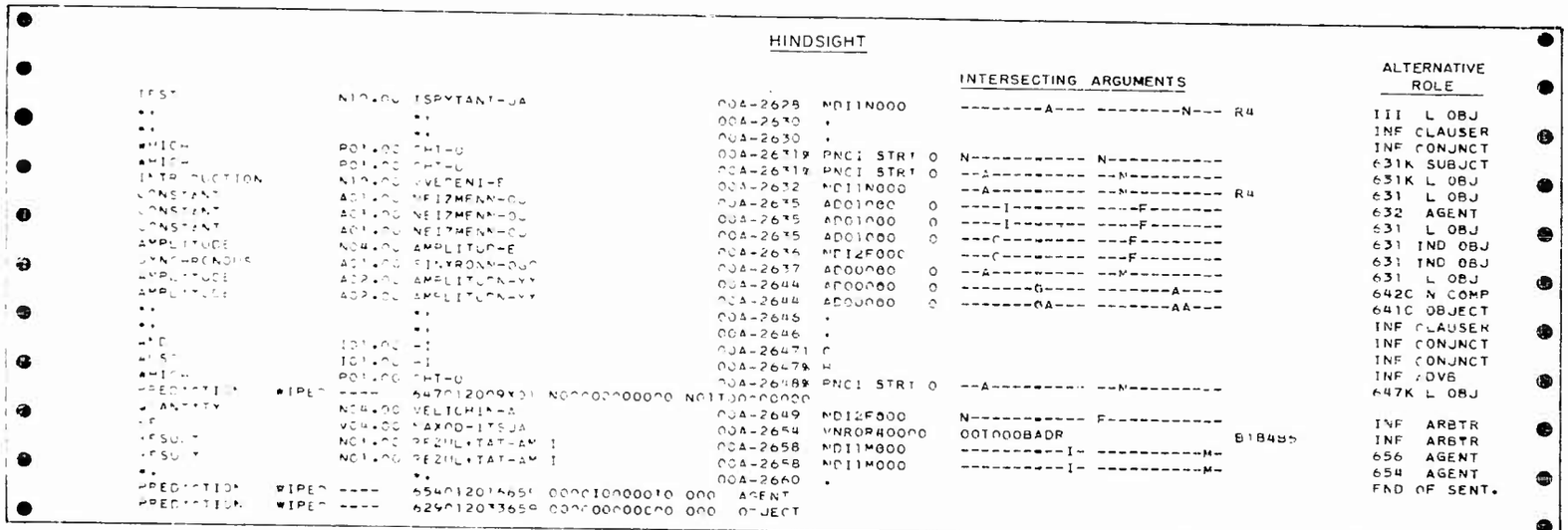
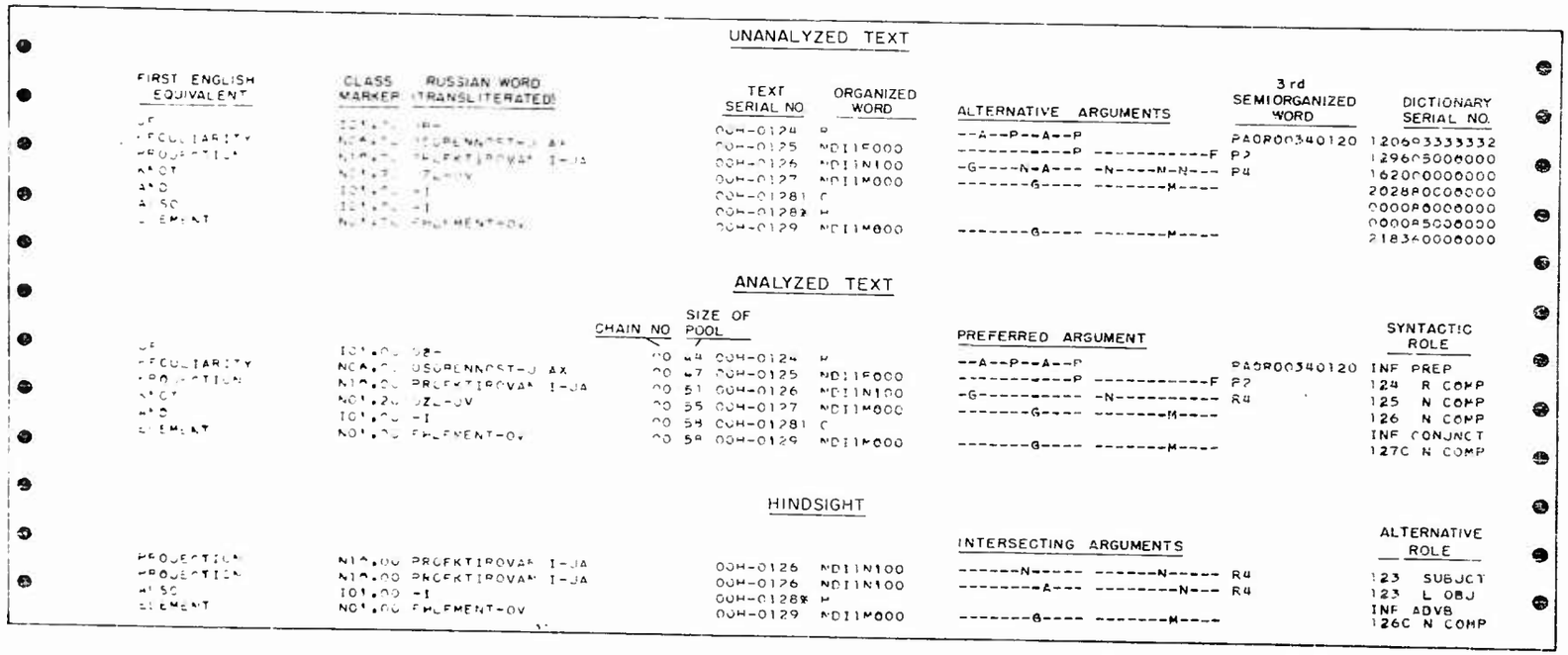


Figure 88 (continued)



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
OF	[illegible]	-R-	00H-0124	R	--A--P--A--P	PA0R00340120	120603333332
PECULIARITY	NCA.00	OSOBENNOST-J AX	00H-0125	ND11F000	----------P ----------F	P2	129605000000
PROJECTION	N1A.00	PROEKTIROVAN I-JA	00H-0126	ND11N100	-G----N-A--- -N----N-N---	P4	162000000000
NOT	NO1.20	UZL-OV	00H-0127	ND11M000	-------G----- -------M-----		202800000000
AND	IO1.00	-I	00H-01281	C			000080000000
ALSO	IE1.00	-I	00H-01282	R			000050000000
ELEMENT	NO1.00	EMLEMENT-OV	00H-0129	ND11M000	-------G----- -------M-----		218360000000

ANALYZED TEXT

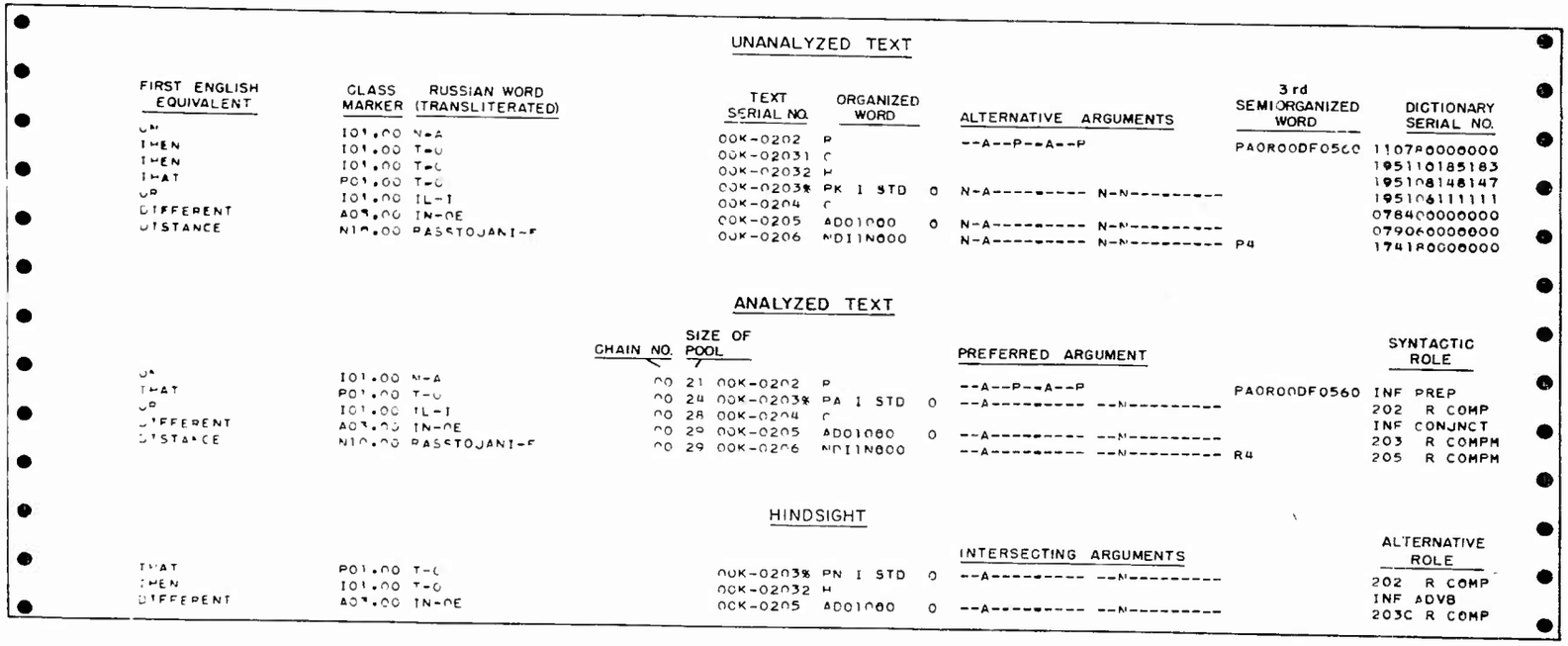
		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
OF	IO1.00 -R-	00	44	00H-0124	R	--A--P--A--P	PA0R00340120	INF PREP
PECULIARITY	NCA.00 OSOBENNOST-J AX	00	47	00H-0125	ND11F000	----------P ----------F	P2	124 R COMP
PROJECTION	N1A.00 PROEKTIROVAN I-JA	00	51	00H-0126	ND11N100	-G----------- -N----------	R4	125 N COMP
NOT	NO1.20 UZL-OV	00	55	00H-0127	ND11M000	-------G----- -------M-----		126 N COMP
AND	IO1.00 -I	00	58	00H-01281	C			INF CONJNCT
ELEMENT	NO1.00 EMLEMENT-OV	00	59	00H-0129	ND11M000	-------G----- -------M-----		127C N COMP

HINDSIGHT

				INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
PROJECTION	N1A.00 PROEKTIROVAN I-JA	00H-0126	ND11N100	------N------ ------N------	R4	123 SUBJCT
PROJECTION	N1A.00 PROEKTIROVAN I-JA	00H-0126	ND11N100	--------A---- --------N---	R4	123 L OBJ
ALSO	IO1.00 -I	00H-01282	R			INF ADVB
ELEMENT	NO1.00 EMLEMENT-OV	00H-0129	ND11M000	-------G----- -------M-----		126C N COMP

A Compound Noun Complement

Figure 89



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
UP	I01.00 N-A		00K-0202	P		--A--P--A--P	PA0R00DF0560	1107A0000000
THEN	I01.00 T-C		00K-02031	C				195110185183
THEN	I01.00 T-C		00K-02032	H				195108148147
THAT	P01.00 T-C		00K-0203%	PK I STD	0	N-A---------- N-N----------		195106111111
UP	I01.00 IL-I		00K-0204	C				078400000000
DIFFERENT	A03.00 IN-DE		00K-0205	AD01000	0	N-A---------- N-N----------		079060000000
DISTANCE	N10.00 PASSTOJANI-E		00K-0206	ND11N000		N-A---------- N-N----------	P4	174180000000

ANALYZED TEXT

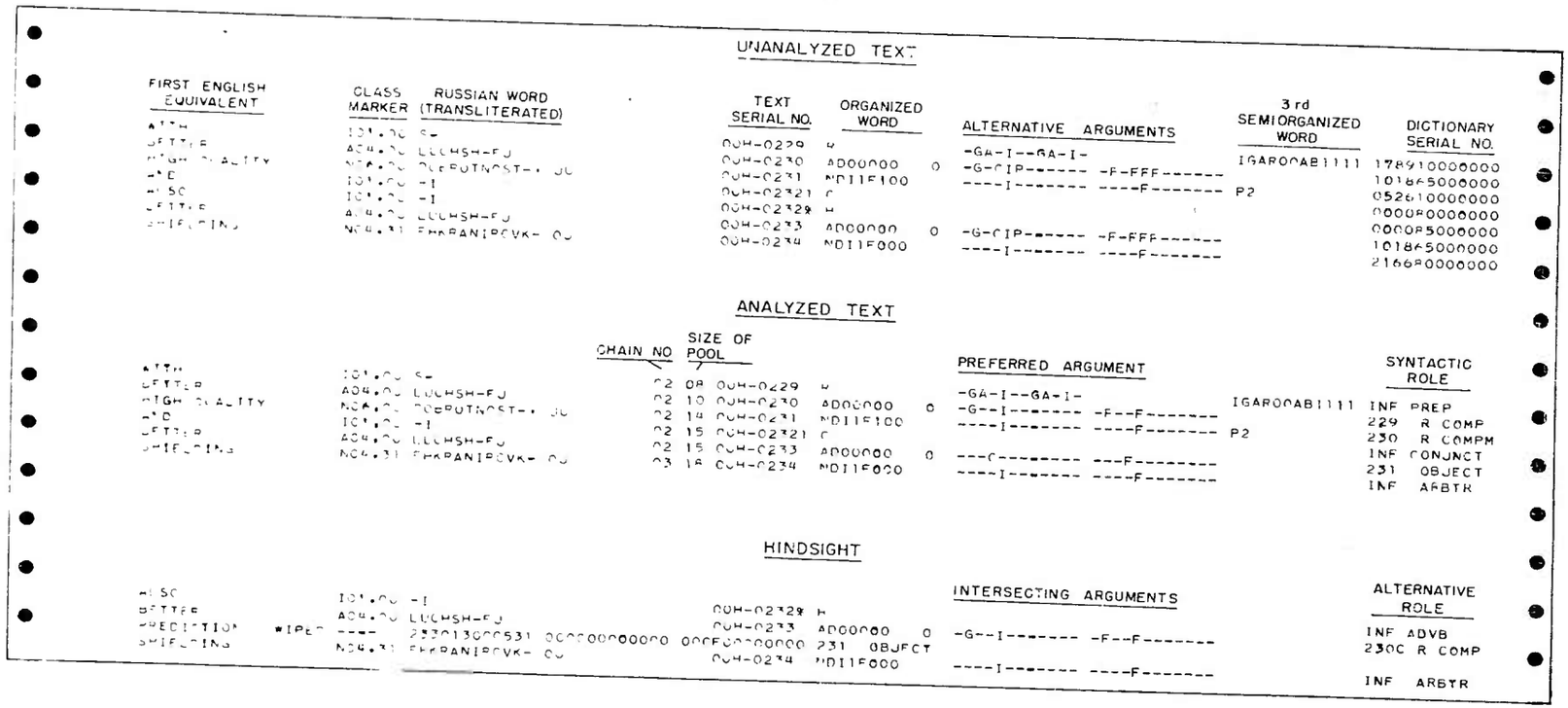
		CHAIN NO.	SIZE OF POOL				PREFERRED ARGUMENT		SYNTACTIC ROLE
UP	I01.00 N-A	00	21	00K-0202	P		--A--P--A--P	PA0R00DF0560	INF PREP
THAT	P01.00 T-C	00	24	00K-0203%	PA I STD	0	--A---------- --N----------		202 R COMP
UP	I01.00 IL-I	00	28	00K-0204	C				INF CONJNCT
DIFFERENT	A03.00 IN-DE	00	29	00K-0205	AD01000	0	--A---------- --N----------		203 R COMPM
DISTANCE	N10.00 PASSTOJANI-E	00	29	00K-0206	ND11N000		--A---------- --N----------	R4	205 R COMPM

HINDSIGHT

					INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
THAT	P01.00 T-C	00K-0203%	PN I STD	0	--A---------- --N----------		202 R COMP
THEN	I01.00 T-C	00K-02032	H				INF ADVB
DIFFERENT	A03.00 IN-DE	00K-0205	AD01000	0	--A---------- --N----------		203C R COMP

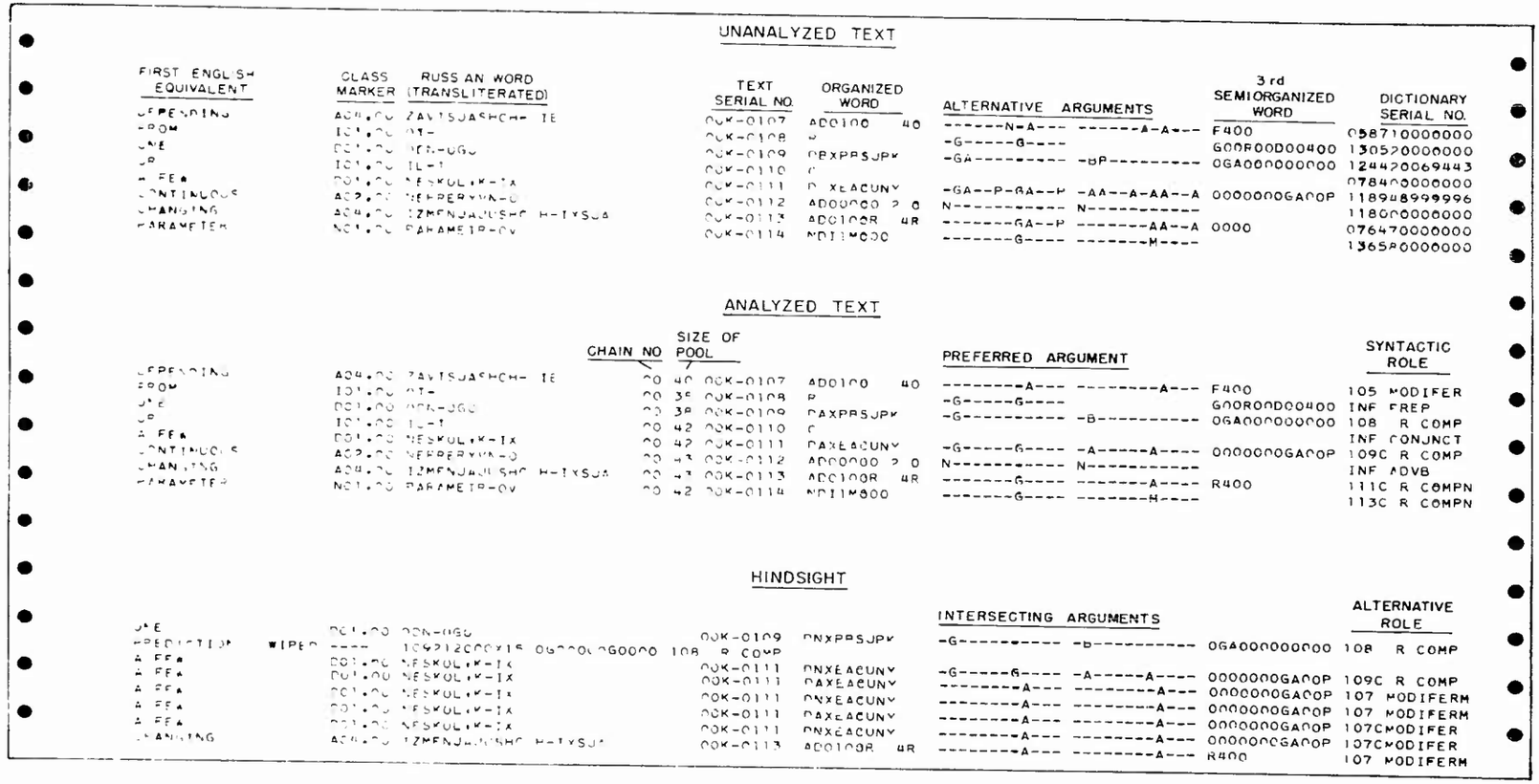
An Analysis with Master – Compound Preposition Complement Ambiguity

Figure 90



An Analysis with Object – Compound Preposition Complement Ambiguity

Figure 91



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
DEPENDING	A04.00	ZAVISIMOSHCH- IE	00K-0107	ADO100 40	------N-A---	------A-A---	F400	058710000000
FROM	I01.00	OT-	00K-0108	P	-G-----G----		G00R00D00400	130520000000
ONE	D01.00	ODN-OGO	00K-0109	DPXPRSJPY	-GA----------	-BP---------	0GA0000000000	124420069443
OF	I01.00	IZ-	00K-0110	C				078400000000
A FEW	D01.00	NESKOL'KO-IX	00K-0111	D XEACUNY	-GA--P-GA--P	-AA--A-AA--A	0000000GA0OP	118948999996
CONTINUOUS	A02.00	NEPRERYVNO-	00K-0112	ADO0000 2 0	N----------	N----------		118000000000
CHANGING	A04.00	IZMENJAJUSHCH- H-IXSJA	00K-0113	ADO100R 4R	-------GA--P	-------AA--A	0000	076470000000
PARAMETER	N01.00	PARAMETR-OV	00K-0114	NDIIM000	-------G----	-------H----		136580000000

ANALYZED TEXT

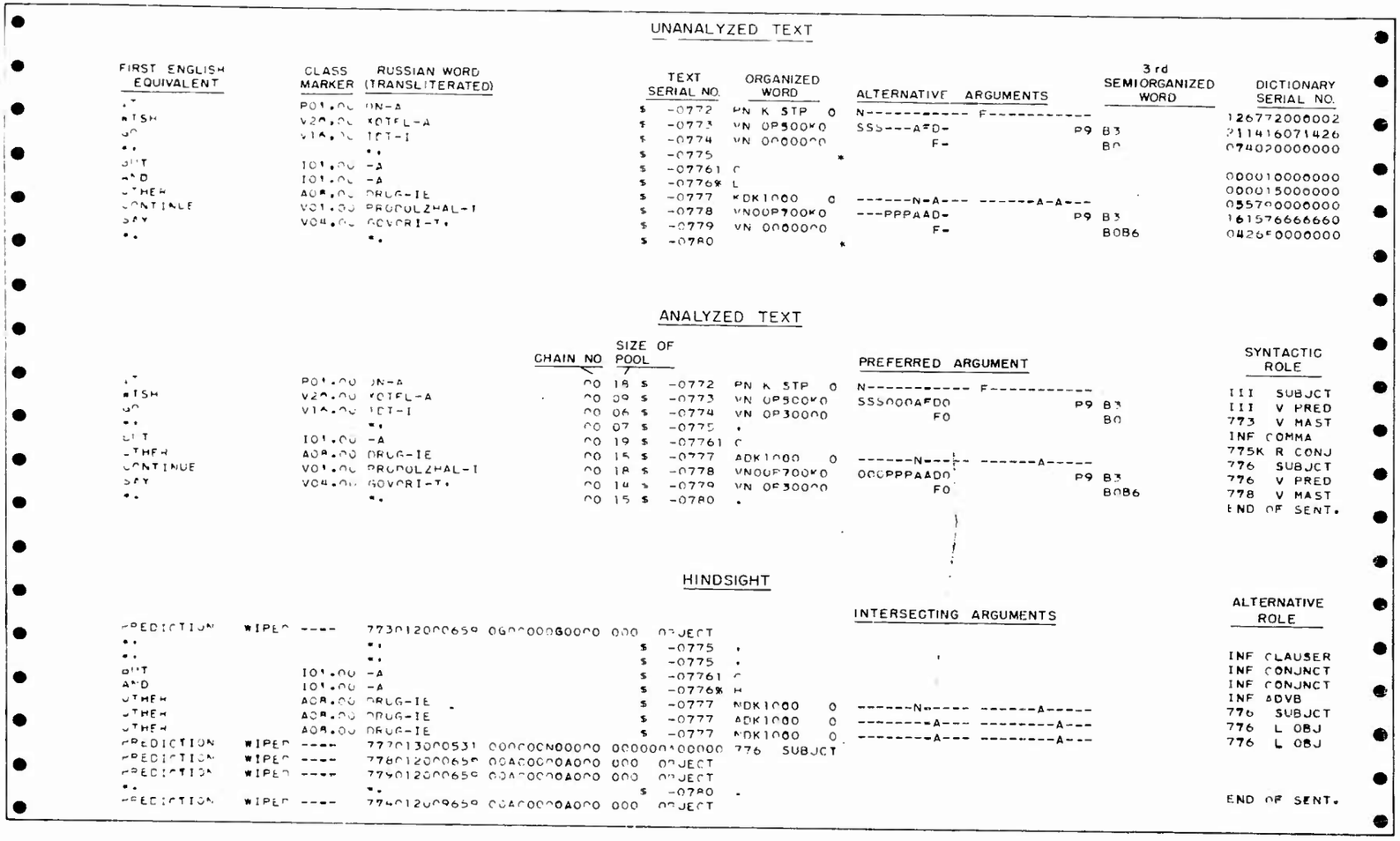
			CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE
DEPENDING	A04.00	ZAVISIMOSHCH- IE	00	40	00K-0107	ADO100 40	--------A---	--------A---	F400	105 MODIFER
FROM	I01.00	OT-	00	36	00K-0108	P	-G-----G----		G00R00D00400	INF PREP
ONE	D01.00	ODN-OGO	00	38	00K-0109	DPXPRSJPY	-G----------	-B----------	0GA0000000000	108 R COMP
OF	I01.00	IZ-	00	42	00K-0110	C				INF CONJNCT
A FEW	D01.00	NESKOL'KO-IX	00	42	00K-0111	DAXEACUNY	-G-----G----	-A-----A----	0000000GA0OP	109C R COMP
CONTINUOUS	A02.00	NEPRERYVNO-	00	43	00K-0112	ADO0000 2 0	N----------	N----------		INF ADVB
CHANGING	A04.00	IZMENJAJUSHCH- H-IXSJA	00	43	00K-0113	ADO100R 4R	-------G----	-------A----	R400	111C R COMPN
PARAMETER	N01.00	PARAMETR-OV	00	42	00K-0114	NDIIM000	-------G----	-------H----		113C R COMPN

HINDSIGHT

						INTERSECTING ARGUMENTS			ALTERNATIVE ROLE
ONE		D01.00 ODN-OGO							
PREDICTION	WIPED	---- 1092120000X1S 0G0000G0000	108	R COMP	00K-0109 DPXPRSJPY	-G----------	-B----------	0GA0000000000	108 R COMP
A FEW		D01.00 NESKOL'KO-IX			00K-0111 DAXEACUNY	-G-----G----	-A-----A----	0000000GA0OP	109C R COMP
A FEW		D01.00 NESKOL'KO-IX			00K-0111 DAXEACUNY	--------A---	--------A---	0000000GA0OP	107 MODIFERM
A FEW		D01.00 NESKOL'KO-IX			00K-0111 DAXEACUNY	--------A---	--------A---	0000000GA0OP	107 MODIFERM
A FEW		D01.00 NESKOL'KO-IX			00K-0111 DAXEACUNY	--------A---	--------A---	0000000GA0OP	107CMODIFER
A FEW		D01.00 NESKOL'KO-IX			00K-0111 DAXEACUNY	--------A---	--------A---	0000000GA0OP	107CMODIFER
CHANGING		A04.00 IZMENJAJUSHC H-IXSJA			00K-0113 ADO100R 4R	--------A---	--------A---	R400	107 MODIFERM

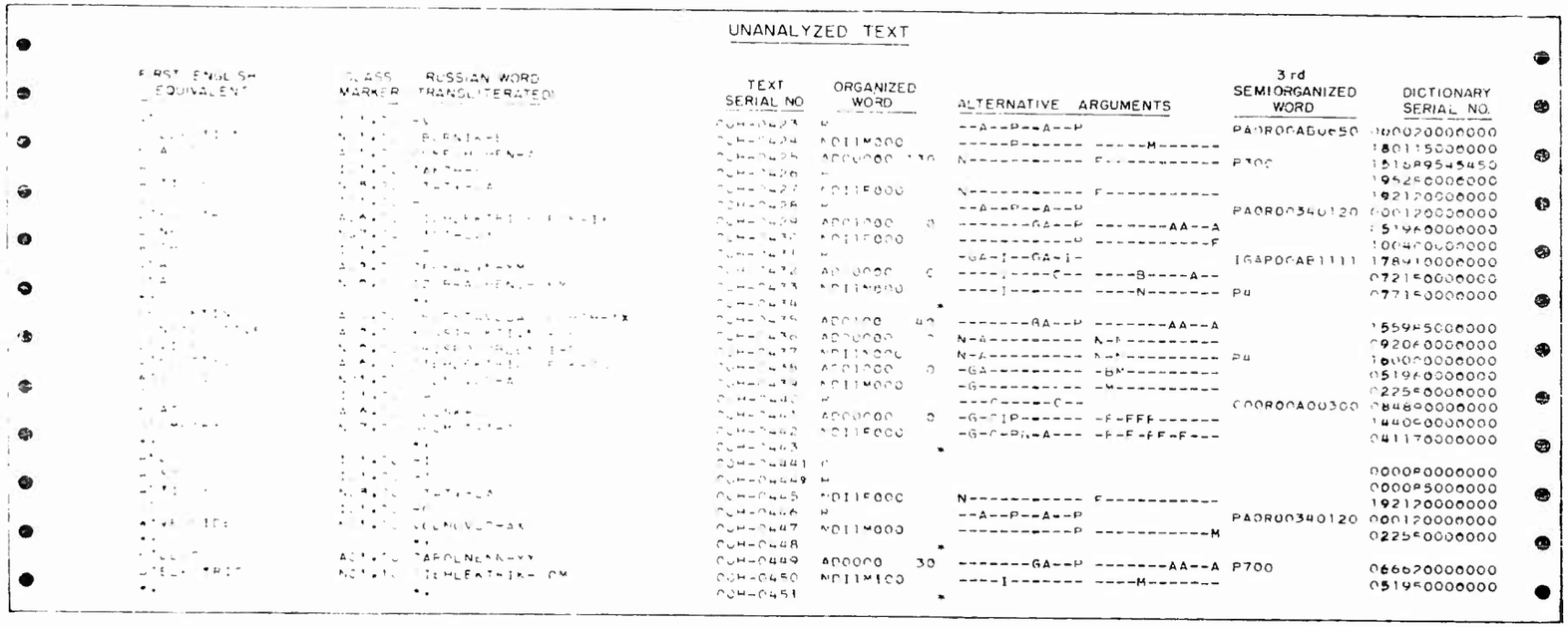
A Compounded Adjective

Figure 92



An Analysis with Infinite Conjunction – Relative Conjunction Ambiguity

Figure 93



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD TRANSLITERATED	TEXT SERIAL NO	ORGANIZED WORD		ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
			0GH-0423	B		--A--B--A--B			
			0GH-0424	ADIIM300		-----B------	-----M------		1801150000000
			0GH-0425	ADC0000	130	N----------	F----------	P700	1515895454550
			0GH-0426						1952560000000
			0GH-0427	ADIIE000		N----------	F----------		1921200000000
			0GH-0428			--A--B--A--B		PA0R00340120	0001200000000
			0GH-0429	ADC1000	0	-------GA--B	-------AA--A		0519600000000
			0GH-0430	ADIIE000		----------B	----------F		1004800000000
			0GH-0431	B		-GA-I--GA-I-		IGAP0CAB1111	1784100000000
			0GH-0432	AD 0000	0	----I----C--	----B----A--		0721500000000
			0GH-0433	ADIIM000		----I-------	----N-------	P4	0771500000000
			0GH-0434		*				
			0GH-0435	ADC100	40	-------BA--B	-------AA--A		1559850000000
			0GH-0436	ADC0000	0	N-A---------	N-B---------		0920400000000
			0GH-0437	ADIIM000		N-A---------	N-B---------	P4	1600000000000
			0GH-0438	ADC1000	0	-GA---------	-BM---------		0519600000000
			0GH-0439	ADIIM000		-G----------	-M----------		0225600000000
			0GH-0440	B		---C-----C--		C00R00A00300	0848800000000
			0GH-0441	ADC0000	0	-G--CIP------	-E-EFF------		1440600000000
			0GH-0442	ADIIE000		-G--C-B--A---	-E-E-EE-E---		0411700000000
			0GH-0443		*				
			0GH-0444	C					0000P0000000
			0GH-0445	B					0000P5000000
			0GH-0446	ADIIE000		N----------	F----------		1921200000000
			0GH-0447	B		--A--B--A--B		PA0R00340120	0001200000000
			0GH-0448	ADIIM000		----------B	----------M		0225600000000
			0GH-0449		*				
			0GH-0450	AD0000	30	-------GA--B	-------AA--A	P700	0666200000000
			0GH-0451	ADIIM100		----I-------	----M-------		0519500000000
					*				

An Analysis with Infinite Conjunction – Relative Conjunction Ambiguity

Figure 94

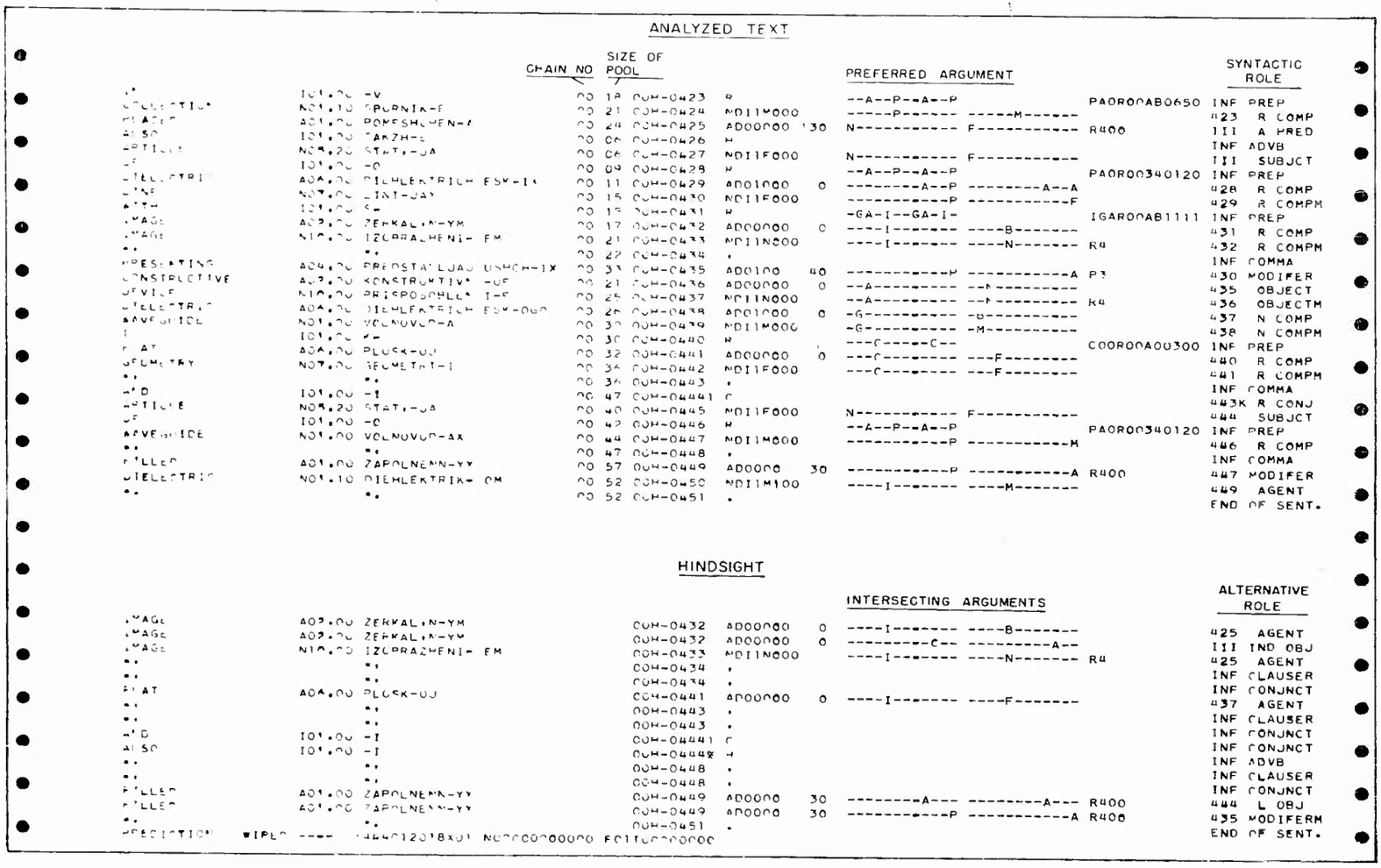
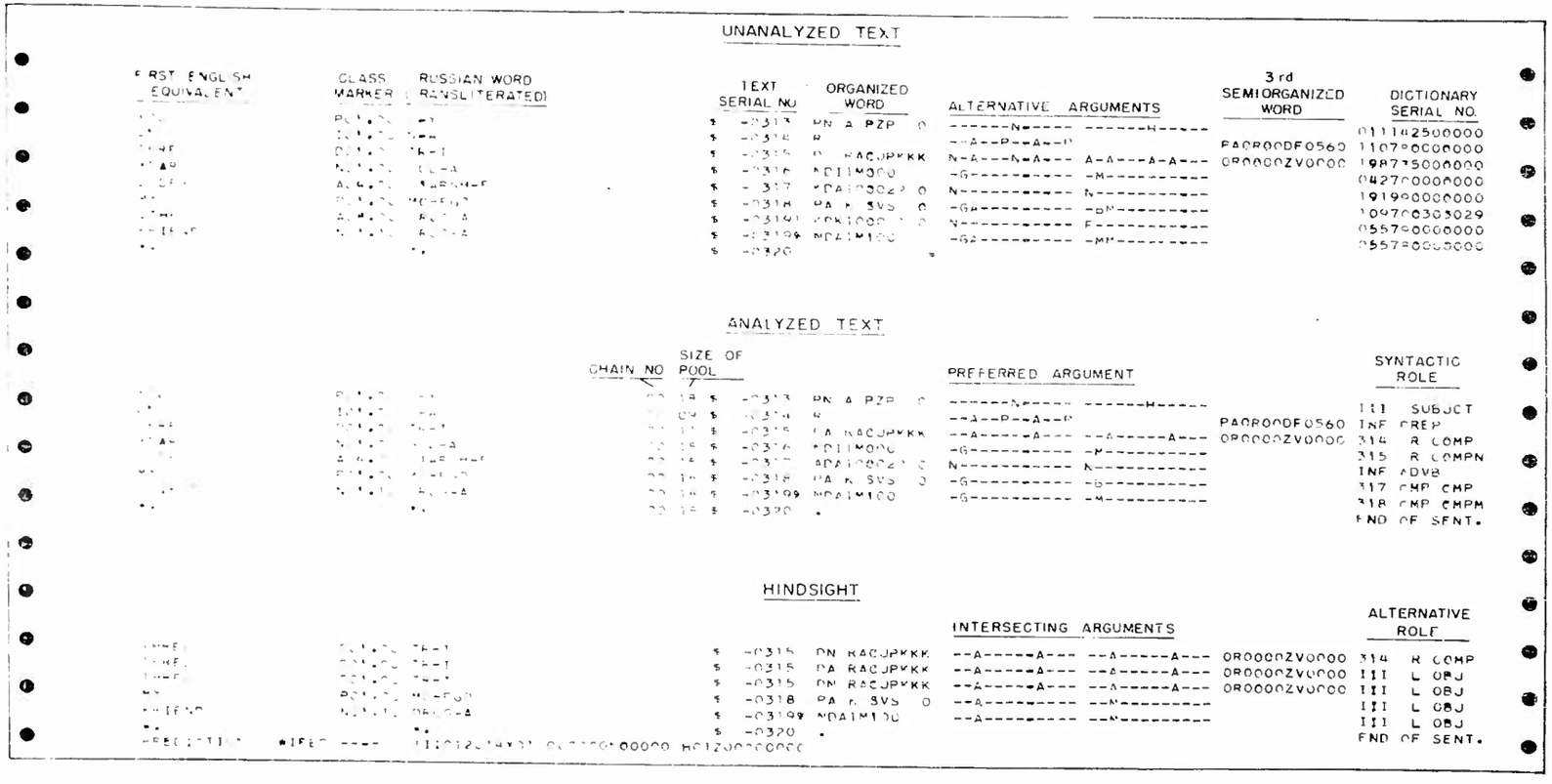
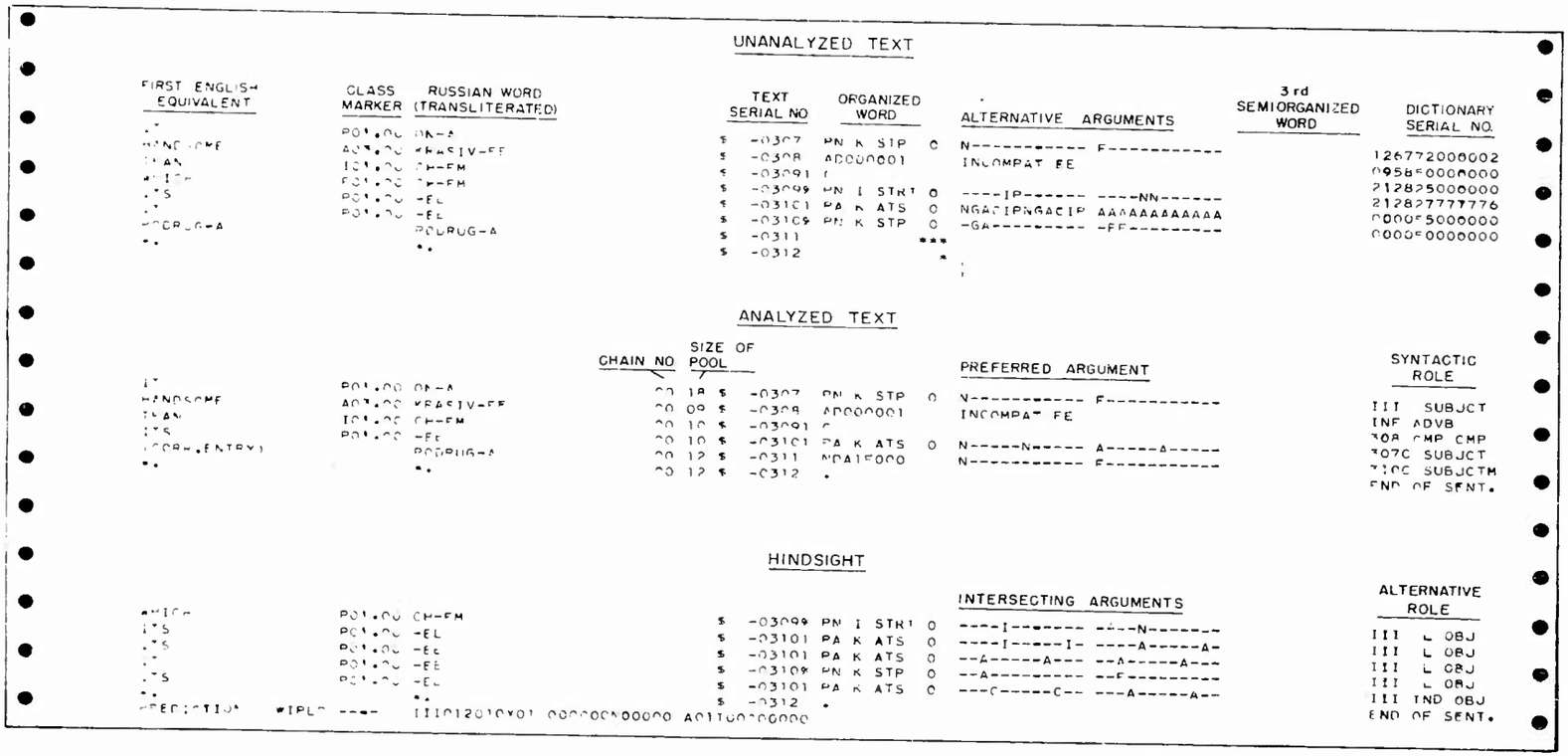


Figure 94 (continued)



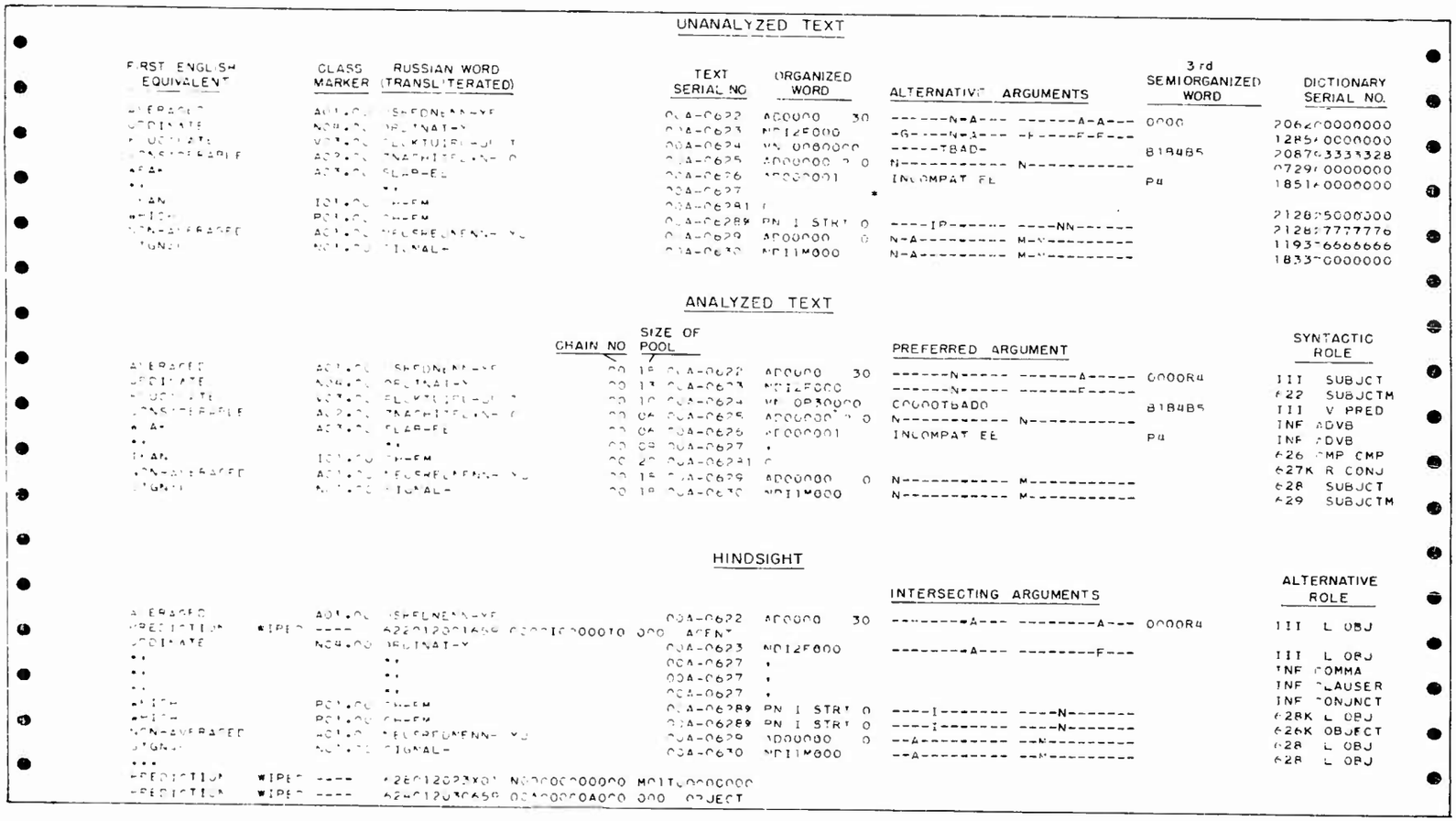
A Genitive Basic Phrase as a Comparative Complement

Figure 95



CHEM (чем) as a Comparative Complement Followed by a Parallel Construction

Figure 96



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
AVERAGED	ADJ.OC	USREDNENNYE	00A-0622	AD0000 30	------N=A--- ------A-A---	0000	20620000000
ORDINATE	NOM.OC	ORDINATY	00A-0623	ND12F000	-G-----N=A--- -F-----F---		12857 0000000
REDUCIBLE	VBT.OC	ELEKTUIRUEMYE T	00A-0624	VR 0080000	-----TBAD=	B184B5	20879 3333328
TRANSFERABLE	ADJ.OC	PRAKTIRUEMYE O	00A-0625	AD00000 2 0	N---------- N----------		07297 0000000
AREA	ADJ.OC	PLAB-EE	00A-0626	AF000001	INCOMPAT EE	P4	18517 0000000
**		**	00A-0627	*			
PLAN	IQT.OC	PLAEM	00A-06281	P			21285 5000300
WHICH	PQT.OC	CHEEM	00A-06289	PN I STRT 0	----IP------ ----NN------		21285 7777776
NON-AVERAGED	ADJ.OC	NEUSREDNENNYE	00A-0629	AD00000 0	N-A---------- M-M----------		11937 6666666
SIGNAL	NOT.OC	SIGNAL=	00A-0630	ND11M000	N-A---------- M-M----------		18337 0000000

ANALYZED TEXT

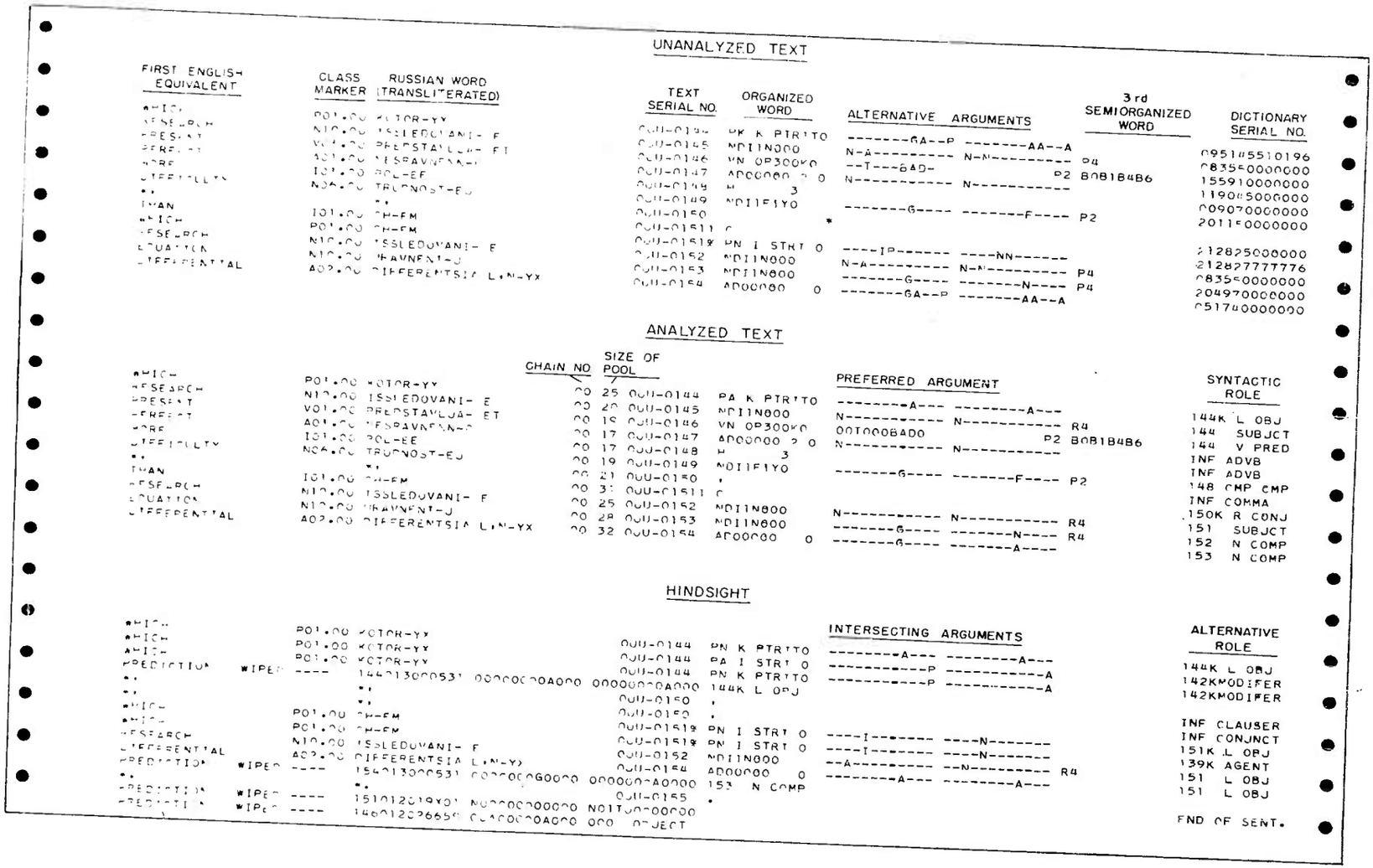
		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
AVERAGED	ADJ.OC	USREDNENNYE	00	18 00A-0622	AD0000 30	------N----- ------A-----	0000R4	111 SUBJCT
ORDINATE	NOM.OC	ORDINATY	00	17 00A-0623	ND12F000	------N----- ------F-----		122 SUBJCTM
REDUCIBLE	VBT.OC	ELEKTUIRUEMYE T	00	10 00A-0624	VR 0P30000	CCCOOTBADO	B184B5	111 V PRED
TRANSFERABLE	ADJ.OC	PRAKTIRUEMYE O	00	0A 00A-0625	AD00000 2 0	N---------- N----------		INF ADVB
AREA	ADJ.OC	PLAB-EE	00	0A 00A-0626	AF000001	INCOMPAT EE	P4	INF ADVB
**		**	00	08 00A-0627	*			626 CMP CMP
PLAN	IQT.OC	CHEEM	00	20 00A-06281	P			627K R CONJ
NON-AVERAGED	ADJ.OC	NEUSREDNENNYE	00	18 00A-0629	AD00000 0	N---------- M----------		628 SUBJCT
SIGNAL	NOT.OC	SIGNAL=	00	18 00A-0630	ND11M000	N---------- M----------		629 SUBJCTM

HINDSIGHT

					INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
AVERAGED		ADJ.OC	USREDNENNYE	00A-0622	AD0000 30	--------=A--- --------A--- 0000R4	111 L OBJ
PREDICTION	*IPED	----	A2801200A5B 0300IC000010 000	AGENT			
ORDINATE		NOM.OC	ORDINATY	00A-0623	ND12F000	--------=A--- --------F---	
**			**	00A-0627	*		111 L OBJ
**			**	00A-0627	*		INF COMMA
**			**	00A-0627	*		INF CLAUSER
WHICH		PQT.OC	CHEEM	00A-06289	PN I STRT 0	----I-------- ----N--------	INF CONJNCT
WHICH		PQT.OC	CHEEM	00A-06289	PN I STRT 0	----I-------- ----N--------	628K L OBJ
NON-AVERAGED		ADJ.OC	NEUSREDNENNYE	00A-0629	AD00000 0	--A---------- --M----------	626K OBJECT
SIGNAL		NOT.OC	SIGNAL=	00A-0630	ND11M000	--A---------- --M----------	628 L OBJ
***							628 L OBJ
PREDICTION	*IPED	----	A2801200B3X01 N0000C000000	MOIT0000000			
PREDICTION	*IPED	----	A2801203065B 03A00000A000	000 OBJECT			

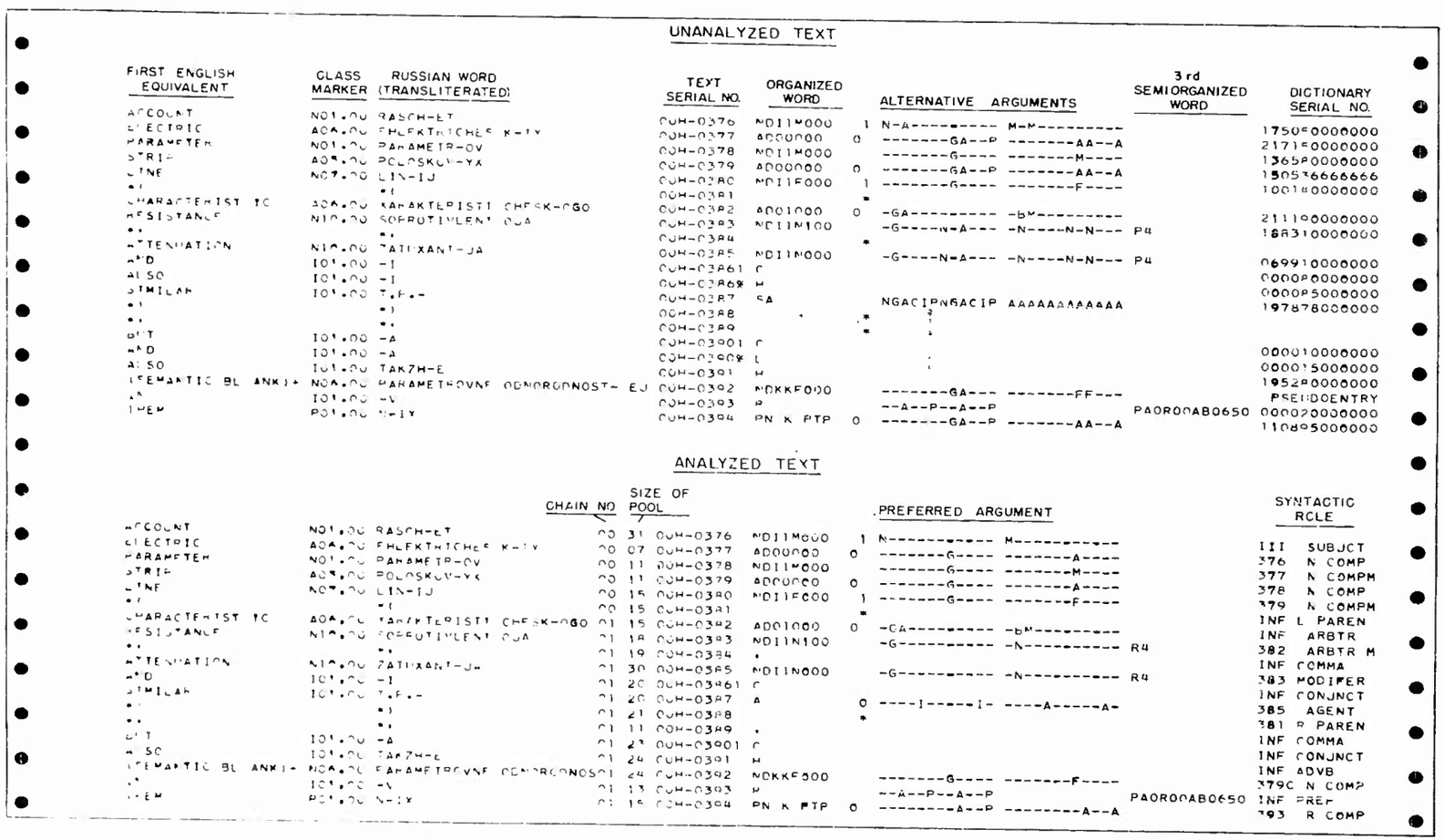
An Unrecognized Comparative Complement

Figure 97



A Genitive Basic Phrase and CHEM (чем) Both Following a Comparative Adverb

Figure 98



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
ACCOUNT	N01.00	RASCH-ET	00H-0376	MD11M000	1	N-A----------- M-M----------		1750P0000000
ELECTRIC	A0A.00	ELEKTRICHES K-IY	00H-0377	AD00000	0	--------GA--P -------AA--A		2171P0000000
PARAMETER	N01.00	PARAMETR-OV	00H-0378	MD11M000		--------G----- --------M-----		1365P0000000
STRIP	A0A.00	POLOSKOV-YX	00H-0379	AD00000	0	--------GA--P -------AA--A		1505366666666
LINE	N07.00	LIN-IJ	00H-0380	MD11F000	1	--------G----- --------F-----		1001P0000000
*(		*(	00H-0381		*			
CHARACTERIST IC	A0A.00	XARAKTERISTI CHESK-OGO	00H-0382	AD01000	0	-GA---------- -bM----------		2111P0000000
RESISTANCE	N10.00	SOPROTIVLENI OJA	00H-0383	MD11N100		-G-----N-A---- -N-----N-N--- P4		1883100000000
*.		*.	00H-0384		*			
ATTENUATION	N10.00	ZATUXANI-JA	00H-0385	MD11N000		-G-----N-A---- -N-----N-N--- P4		0699100000000
AND	I01.00	-I	00H-03861	C				0000P0000000
ALSO	I01.00	-I	00H-0386*	H				0000P5000000
SIMILAR	I01.00	T.P.-	00H-0387	SA		NGACIPNGACIP AAAAAAAAAAAA		1978780000000
*)		*)	00H-0388		*			
*.		*.	00H-0389		*			
BUT	I01.00	-A	00H-03901	C				
AND	I01.00	-A	00H-0390*	L				0000100000000
ALSO	I01.00	TAKZH-E	00H-0391	H				0000150000000
SEMANTIC BL ANKI+	N0A.00	PARAMETROVNE ODNORODNOST- EJ	00H-0392	MDKKF000		--------GA----- --------FF----		1952P0000000
AN	I01.00	-V	00H-0393	P		--A--P--A--P		PSEUDOENTRY
THEM	P01.00	N-IX	00H-0394	PN K PTP	0	-------GA--P -------AA--A	PAOR00AB0650	0000200000000
								1108950000000

ANALYZED TEXT

			CHAIN NO	SIZE OF POOL				PREFERRED ARGUMENT		SYNTACTIC RCLE
ACCOUNT	N01.00	RASCH-ET	00	31	00H-0376	MD11M000	1	N---------- M----------		III SUBJCT
ELECTRIC	A0A.00	ELEKTRICHES K-IY	00	07	00H-0377	AD00000	0	--------G----- -------A-----		376 N COMP
PARAMETER	N01.00	PARAMETR-OV	00	11	00H-0378	MD11M000		--------G----- --------M-----		377 N COMPM
STRIP	A0A.00	POLOSKOV-YX	00	11	00H-0379	AD00000	0	--------G----- -------A-----		378 N COMP
LINE	N07.00	LIN-IJ	00	15	00H-0380	MD11F000	1	--------G----- --------F-----		379 N COMPM
*(		*(	00	15	00H-0381		*			INF L PAREN
CHARACTERIST IC	A0A.00	XARAKTERISTI CHESK-OGO	01	15	00H-0382	AD01000	0	-GA---------- -bM----------		INF ARBTR
RESISTANCE	N10.00	SOPROTIVLENI OJA	01	18	00H-0383	MD11N100		-G---------- -N---------- R4		382 ARBTR M
*.		*.	01	19	00H-0384	.				INF COMMA
ATTENUATION	N10.00	ZATUXANI-JA	01	30	00H-0385	MD11N000		-G---------- -N---------- R4		383 MODIFER
AND	I01.00	-I	01	20	00H-03861	C				INF CONJNCT
SIMILAR	I01.00	T.P.-	01	20	00H-0387	A	0	----I-----I- ----A-----A-		385 AGENT
*)		*)	01	21	00H-0388		*			381 R PAREN
*.		*.	01	11	00H-0389	.				INF COMMA
BUT	I01.00	-A	01	23	00H-03901	C				INF CONJNCT
ALSO	I01.00	TAKZH-E	01	24	00H-0391	H				INF ADVB
SEMANTIC BL ANKI+	N0A.00	PARAMETROVNE ODNORODNOST-	01	24	00H-0392	MDKKF000		--------G----- -------F-----		379C N COMP
AN	I01.00	-V	01	13	00H-0393	P		--A--P--A--P		PREP
THEM	P01.00	N-IX	01	15	00H-0394	PN K PTP	0	--------A--P --------A--A	PAOR00AB0650	393 R COMP

A Parenthetic Expression Set Off by Parentheses

Figure 99

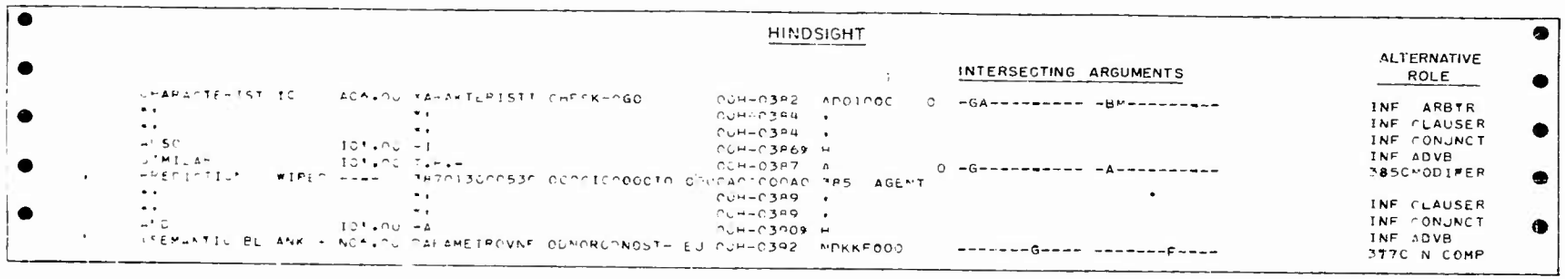
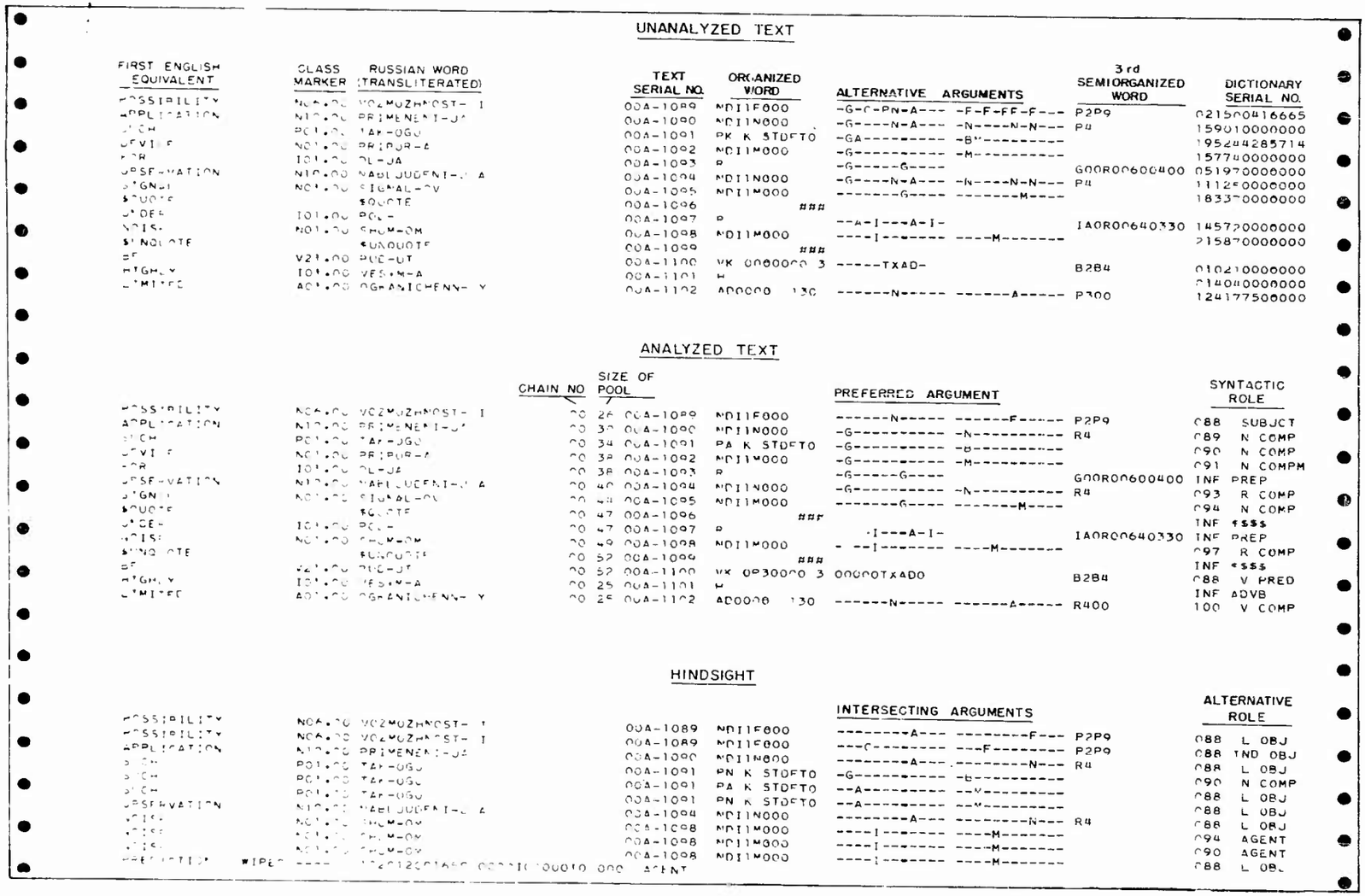


Figure 99 (continued)



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
POSSIBILITY	NOA.00	VOZMOZHNOST- I	00A-1089	MD11F000	-G-C-PN-A---	-F-F-FF-F---	P2P9	021500416665
APPLICATION	N10.00	PRIMENENI-JA	00A-1090	MD11N000	-G----N-A---	-N----N-N---	P4	159010000000
SUCH	P01.00	TAK-OGO	00A-1091	PK K STOFTO	-GA---------	-B---------		195244285714
DEVICE	N01.00	PRIBOR-A	00A-1092	MD11M000	-G----------	-M----------		157740000000
FOR	I01.00	DL-JA	00A-1093	P	-G-----G----		G00R00600400	051970000000
OBSERVATION	N10.00	NABLJUDENI-JA	00A-1094	MD11N000	-G----N-A---	-N----N-N---	P4	111250000000
SIGNAL	N01.00	SIGNAL-OV	00A-1095	MD11M000	-------G----	-------M----		183370000000
$QUOTE		$QUOTE	00A-1096	###				
CODE	I01.00	POL-	00A-1097	P	--A-I---A-I-		IA0R00640330	145720000000
NOISE	N01.00	SHUM-OM	00A-1098	MD11M000	----I-------	----M-------		215870000000
$UNQUOTE		$UNQUOTE	00A-1099	###				
OF	V21.00	PUC-UT	00A-1100	VK 0P80000 3	-----TXAD-		B2B4	010410000000
HIGHLY	I01.00	VES-M-A	00A-1101	H				014040000000
LIMITED	A01.00	OGRANICHENN- Y	00A-1102	AD0000 130	------N------	------A------	P300	124177500000

ANALYZED TEXT

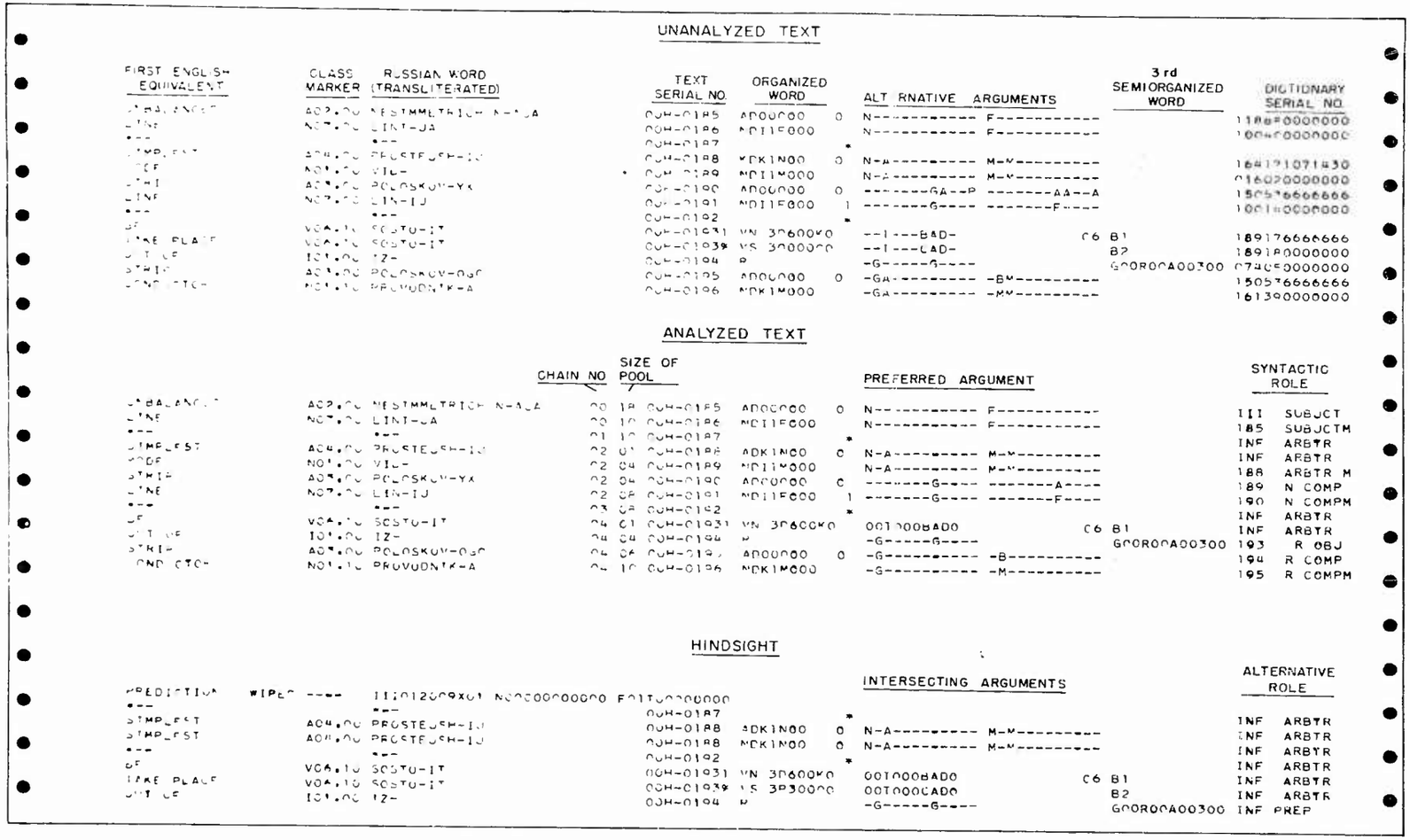
		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE
POSSIBILITY	NOA.00	VOZMOZHNOST- I	00	26	00A-1089	MD11F000	------N------	------F------ P2P9	088 SUBJCT
APPLICATION	N10.00	PRIMENENI-JA	00	30	00A-1090	MD11N000	-G----------	-N---------- R4	089 N COMP
SUCH	P01.00	TAK-OGO	00	34	00A-1091	PA K STOFTO	-G----------	-B----------	090 N COMP
DEVICE	N01.00	PRIBOR-A	00	38	00A-1092	MD11M000	-G----------	-M----------	091 N COMPM
FOR	I01.00	DL-JA	00	38	00A-1093	P	-G-----G----	G00R00600400	INF PREP
OBSERVATION	N10.00	NABLJUDENI-JA	00	40	00A-1094	MD11N000	-G----------	-N---------- R4	093 R COMP
SIGNAL	N01.00	SIGNAL-OV	00	44	00A-1095	MD11M000	-------G----	-------M----	094 N COMP
$QUOTE		$QUOTE	00	47	00A-1096	###			INF $$$$
CODE	I01.00	POL-	00	47	00A-1097	P	-I---A-I-	IA0R00640330	INF PREP
NOISE	N01.00	SHUM-OM	00	49	00A-1098	MD11M000	- --I-------	----M-------	097 R COMP
$UNQUOTE		$UNQUOTE	00	52	00A-1099	###			INF $$$$
OF	V21.00	PUC-UT	00	52	00A-1100	VK 0P30000 3	000OOTXADO	B2B4	088 V PRED
HIGHLY	I01.00	VES-M-A	00	25	00A-1101	H			INF ADVB
LIMITED	A01.00	OGRANICHENN- Y	00	25	00A-1102	AD0000 130	------N------	------A------ R400	100 V COMP

HINDSIGHT

				INTERSECTING ARGUMENTS			ALTERNATIVE ROLE
POSSIBILITY	NOA.00	VOZMOZHNOST- I	00A-1089	MD11F000	--------A---	--------F--- P2P9	088 L OBJ
POSSIBILITY	NOA.00	VOZMOZHNOST- I	00A-1089	MD11F000	---C--------	---F-------- P2P9	088 IND OBJ
APPLICATION	N10.00	PRIMENENI-JA	00A-1090	MD11N000	--------A---	--------N--- R4	088 L OBJ
SUCH	P01.00	TAK-OGO	00A-1091	PN K STOFTO	-G----------	-B----------	090 N COMP
SUCH	P01.00	TAK-OGO	00A-1091	PA K STOFTO	--A---------	--M---------	088 L OBJ
SUCH	P01.00	TAK-OGO	00A-1091	PN K STOFTO	--A---------	--M---------	088 L OBJ
OBSERVATION	N10.00	NABLJUDENI-JA	00A-1094	MD11N000	--------A---	--------N--- R4	088 L OBJ
NOISE	N01.00	SHUM-OM	00A-1098	MD11M000	----I-------	----M-------	094 AGENT
NOISE	N01.00	SHUM-OM	00A-1098	MD11M000	----I-------	----M-------	090 AGENT
PREPOSITION	WIPER	[illegible]	00A-1102	[illegible]	----I-------	----M-------	088 L OBJ

A Parenthetic Expression Set Off by Quotes

Figure 100



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
[illegible]	ADJ.00	NESIMMETRICH-NAYA	00H-0185	AD00000	0	N---------- F----------		118#0000000
LINE	NOT.00	LINI-JA	00H-0186	MDIIF000		N---------- F----------		1004#0000000
***		***	00H-0187		*			
SIMPLEST	ADJ.00	PROSTEJSH-IJ	00H-0188	MDK1M00	0	N-A-------- M-M---------		16#191071#30
MODE	NOT.00	VID-	00H-0189	MDIIM000		N-A-------- M-M---------		0160?0000000
STRIP	ADJ.00	POLOSKOV-YX	00H-0190	AD00000	0	--------GA--P -------AA--A		1505?6666666
LINE	NOT.00	LIN-IJ	00H-0191	MDIIF000	1	--------G---- -------F----		1001#0000000
***		***	00H-0192		*			
OF	VOA.10	SOSTU-IT	00H-01931	VN 3P600K0		--I---BAD-	C6 B1	189176666666
TAKE PLACE	VOA.10	SOSTU-IT	00H-01939	VS 3P00000		--I---CAD-	B2	1891?0000000
OUT OF	IO1.00	IZ-	00H-0194	P		-G-----G----	G00R00A00300	0?40?0000000
STRIP	ADJ.00	POLOSKOV-OGO	00H-0195	AD00000	0	-GA-------- -BM--------		1505?6666666
COMPLETE	NOT.10	PROVODNIK-A	00H-0196	MDK1M000		-GA-------- -MM--------		161?90000000

ANALYZED TEXT

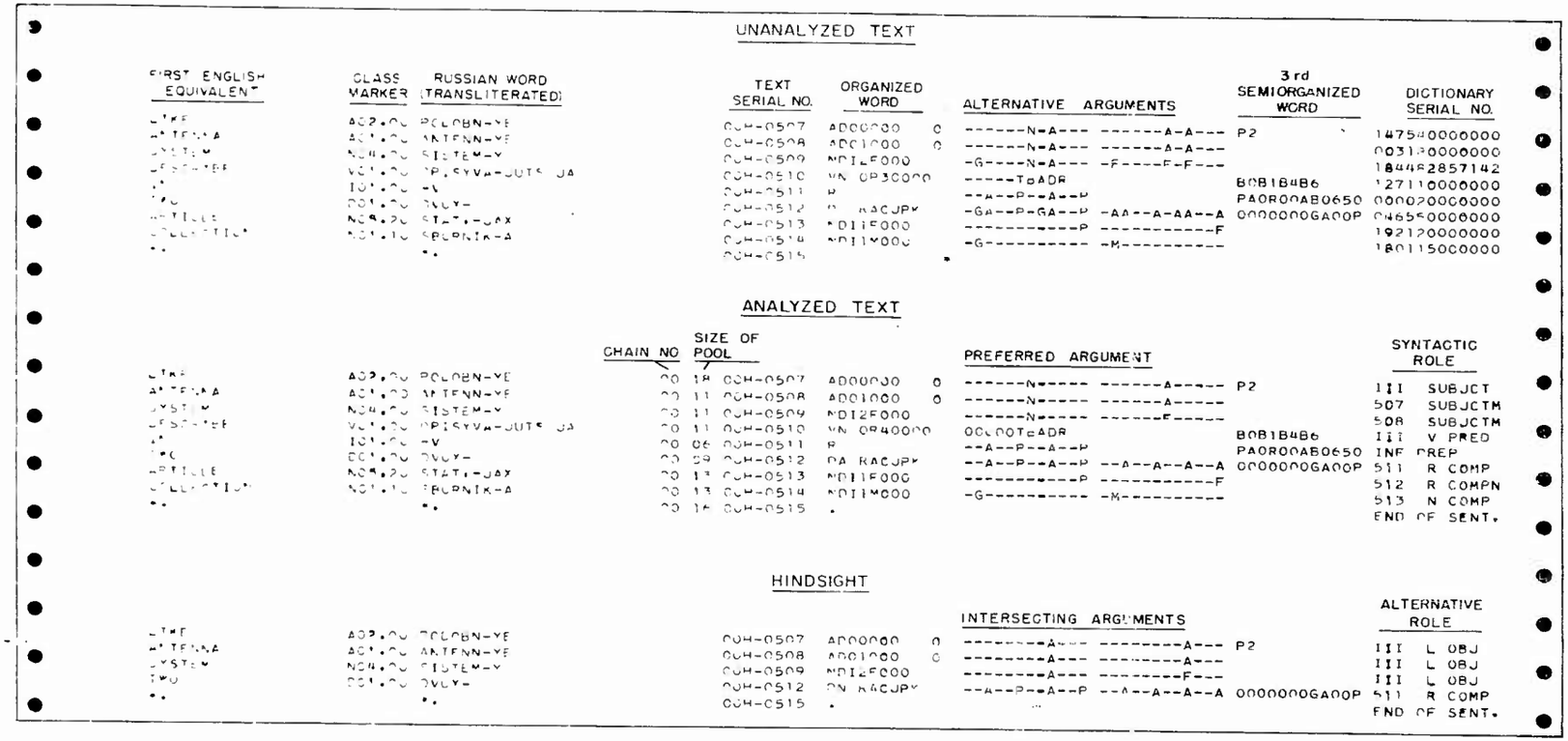
		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
[illegible]	ADJ.00 NESIMMETRICH-NAYA	00	18	00H-0185	AD00000 0	N---------- F----------		III SUBJCT
LINE	NOT.00 LINI-JA	00	10	00H-0186	MDIIF000	N---------- F----------		185 SUBJCTM
***	***	01	10	00H-0187	*			INF ARBTR
SIMPLEST	ADJ.00 PROSTEJSH-IJ	02	01	00H-0188	MDK1M00 0	N-A-------- M-M---------		INF ARBTR
MODE	NOT.00 VID-	02	04	00H-0189	MDIIM000	N-A-------- M-M---------		188 ARBTR M
STRIP	ADJ.00 POLOSKOV-YX	02	04	00H-0190	AD00000 C	--------G---- -------A----		189 N COMP
LINE	NOT.00 LIN-IJ	02	08	00H-0191	MDIIF000 1	--------G---- -------F----		190 N COMPM
***	***	03	08	00H-0192	*			INF ARBTR
OF	VOA.10 SOSTU-IT	04	61	00H-01931	VN 3P600K0	00T000BAD0	C6 B1	INF ARBTR
OUT OF	IO1.00 IZ-	04	04	00H-0194	P	-G-----G----	G00R00A00300	193 R OBJ
STRIP	ADJ.00 POLOSKOV-OGO	04	04	00H-0195	AD00000 0	-G-------- -B--------		194 R COMP
COMPLETE	NOT.10 PROVODNIK-A	04	10	00H-0196	MDK1M000	-G-------- -M--------		195 R COMPM

HINDSIGHT

				INTERSECTING ARGUMENTS			ALTERNATIVE ROLE
PREDICTIVA	WIPE- ----	II;012?09X01 N0?000000000 F01T0?000000					
***	***	00H-0187	*				
SIMPLEST	ADJ.00 PROSTEJSH-IJ	00H-0188	MDK1M00 0	N-A-------- M-M---------			INF ARBTR
SIMPLEST	ADJ.00 PROSTEJSH-IJ	00H-0188	MDK1M00 0	N-A-------- M-M---------			INF ARBTR
***	***	00H-0192	*				INF ARBTR
OF	VOA.10 SOSTU-IT	00H-01931	VN 3P600K0	00T000BAD0	C6 B1		INF ARBTR
TAKE PLACE	VOA.10 SOSTU-IT	00H-01939	VS 3P30000	00T000CAD0	B2		INF ARBTR
OUT OF	IO1.00 IZ-	00H-0194	P	-G-----G----	G00R00A00300		INF PREP

A Parenthetic Expression Set Off by Dashes

Figure 101



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
THE	ADJ.OU	POLOBN-YE	00H-0507	AD00000	0	------N-A----	------A-A---	P2	1475#0000000
ANTENNA	ADJ.OU	ANTENN-YE	00H-0508	AD01000	0	------N-A----	------A-A---		0031#0000000
SYSTEM	NOM.OU	SISTEM-Y	00H-0509	ND12F000		-G----N-A----	-F----F-F---		1844#2857142
DESCRIBE	VBT.OU	OPISYVA-JUTS JA	00H-0510	VN 0P30000		-----T=ADR		B0B1B4B6	127110000000
A	IDT.OU	-V	00H-0511	P		--A--P--A--P		PA0R00AB0650	000020000000
TWO	DOT.OU	DVUY-	00H-0512	D RACJPY		-GA--P-GA--P	-AA--A-AA--A	0000000GA00P	0#65#0000000
ARTICLE	NOM.OU	STAT-JAX	00H-0513	ND11F000		----------P	----------F		192120000000
COLLECTION	NOT.OU	SBORNIK-A	00H-0514	ND11M000		-G----------	-M----------		180115000000
.		.	00H-0515						

ANALYZED TEXT

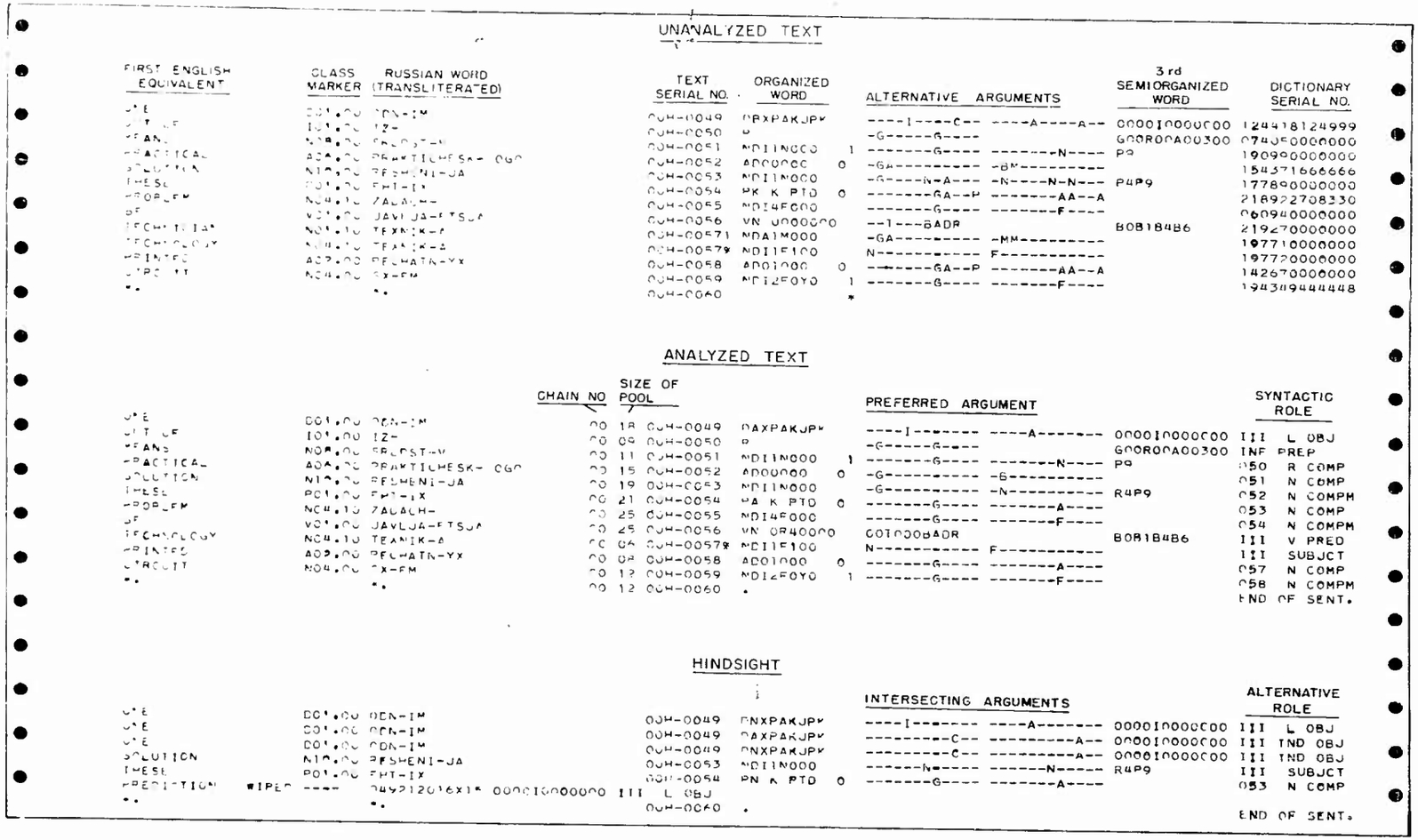
		CHAIN NO	SIZE OF POOL				PREFERRED ARGUMENT			SYNTACTIC ROLE
THE	ADJ.OU	POLOBN-YE	00	18	00H-0507	AD00000 0	------N-----	------A-----P	P2	III SUBJCT
ANTENNA	ADJ.OU	ANTENN-YE	00	11	00H-0508	AD01000 0	------N-----	------A-----		507 SUBJCTM
SYSTEM	NOM.OU	SISTEM-Y	00	11	00H-0509	ND12F000	------N-----	------F-----		508 SUBJCTM
DESCRIBE	VBT.OU	OPISYVA-JUTS JA	00	11	00H-0510	VN 0P40000	00L00T=ADR		B0B1B4B6	III V PRED
A	IDT.OU	-V	00	06	00H-0511	P	--A--P--A--P		PA0R00AB0650	INF PREP
TWO	DOT.OU	DVUY-	00	59	00H-0512	DA RACJPY	--A--P--A--P	--A--A--A--A	0000000GA00P	511 R COMP
ARTICLE	NOM.OU	STAT-JAX	00	17	00H-0513	ND11F000	----------P	----------F		512 R COMPN
COLLECTION	NOT.OU	SBORNIK-A	00	13	00H-0514	ND11M000	-G----------	-M----------		513 N COMP
.		.	00	14	00H-0515	.				END OF SENT.

HINDSIGHT

						INTERSECTING ARGUMENTS			ALTERNATIVE ROLE
THE	ADJ.OU	POLOBN-YE	00H-0507	AD00000	0	--------A----	--------A---	P2	III L OBJ
ANTENNA	ADJ.OU	ANTENN-YE	00H-0508	AD01000	0	--------A----	--------A---		III L OBJ
SYSTEM	NOM.OU	SISTEM-Y	00H-0509	ND12F000		--------A----	--------F---		III L OBJ
TWO	DOT.OU	DVUY-	00H-0512	DN RACJPY		--A--P--A--P	--A--A--A--A	0000000GA00P	511 R COMP
.		.	00H-0515	.					END OF SENT.

An Analyzed Sentence

Figure 102



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
[illegible]	[illegible]	[illegible]	00H-0049	DAXPAKJPX		----I----C-- ----A----A--	0000I0000C00	124418124999
[illegible]	[illegible]	[illegible]	00H-0050	B		-G-----G----	G00R00A00300	0743500000000
[illegible]	[illegible]	[illegible]	00H-0051	MDIIN000	1	-------G----- -------N----	P9	190990000000
PRACTICAL	ADA.NC	PRAKTICHESK- OGO	00H-0052	AD00000	0	-GA---------- -BM----------		154371666666
SOLUTION	N10.NC	RESHENI-JA	00H-0053	MDIIN000		-G----N-A--- -N----N-N---	P4P9	177890000000
THESE	P01.NC	FHI-IX	00H-0054	PK K PTD	0	-------GA--P -------AA--A		218922708330
PROBLEM	N04.1C	ZADACH-	00H-0055	MDI4E000		-------G----- -------F----		060940000000
OF	V01.NC	JAVLJA-ETSJA	00H-0056	VN 0R00000		--1---BADR	B0B1B4B6	219270000000
TECHNOLOGY	N01.1C	TEXNIK-A	00H-0057	MDA1M000		-GA---------- -MM----------		197710000000
PRINTED	N04.1C	TEXNIK-A	00H-0057*	MDIIE100		N---------- F----------		197720000000
CIRCUIT	A02.NC	PECHATN-YX	00H-0058	AD01000	0	-------GA--P -------AA--A		142670000000
..	N04.NC	SX-EM	00H-0059	MDI2E0Y0	1	-------G----- -------F----		194389444448
		..	00H-0060		*			

ANALYZED TEXT

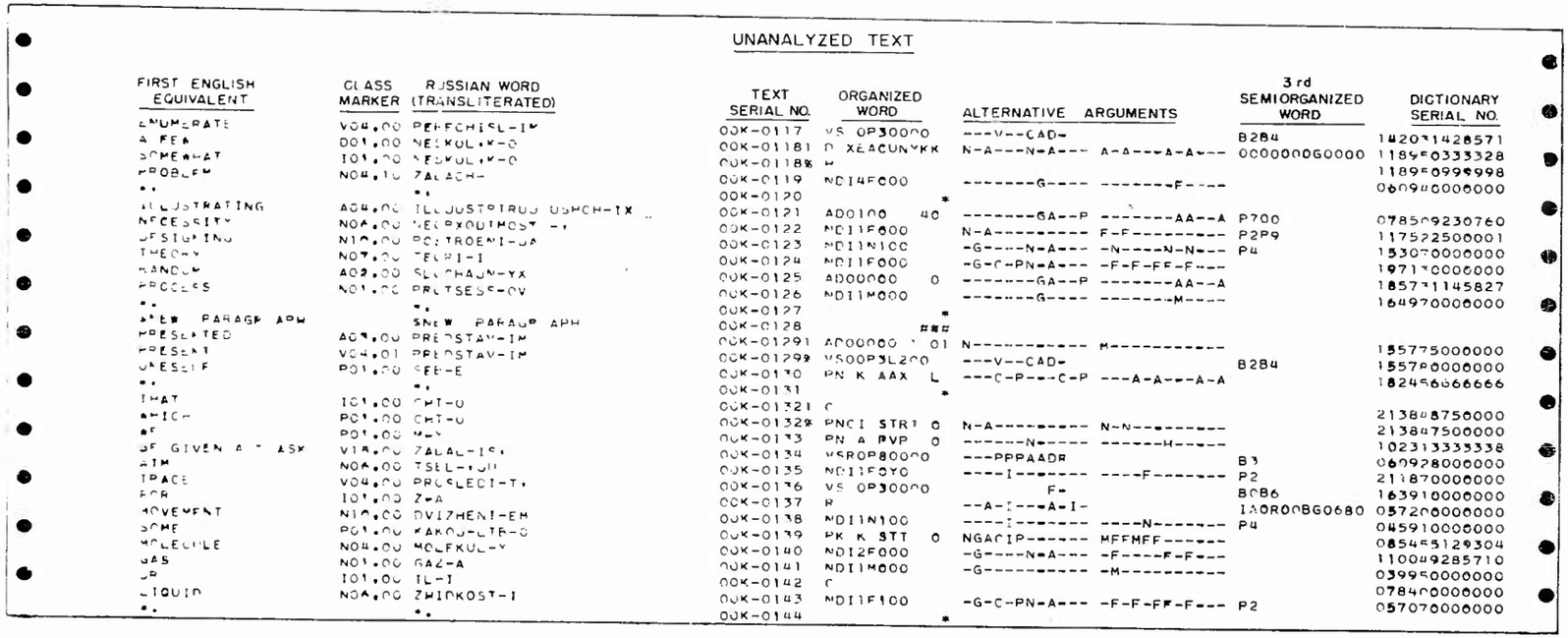
		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
[illegible]	DO1.NC DEN-IM	00	18	00H-0049	DAXPAKJPX	----I------- ----A-------	0000I0000C00	III L OBJ
[illegible]	IO1.NC IZ-	00	09	00H-0050	B	-G------G----	G00R00A00300	INF PREP
[illegible]	N0R.NC SREDST-V	00	11	00H-0051	MDIIN000 1	-------G----- -------N----	P9	050 R COMP
PRACTICAL	ADA.NC PRAKTICHESK- OGO	00	15	00H-0052	AD00000 0	-G---------- -B----------		051 N COMP
SOLUTION	N10.NC RESHENI-JA	00	19	00H-0053	MDIIN000	-G----------- -N----------	R4P9	052 N COMPM
THESE	P01.NC FHI-IX	00	21	00H-0054	PA K PTD 0	-------G----- -------A----		053 N COMP
PROBLEM	N04.1C ZADACH-	00	25	00H-0055	MDI4E000	-------G----- -------F----		054 N COMPM
OF	V01.NC JAVLJA-ETSJA	00	28	00H-0056	VN 0R40000	G0I0000ADR	B0B1B4B6	III V PRED
TECHNOLOGY	N04.1C TEXNIK-A	00	04	00H-0057*	MDIIE100	N---------- F----------		III SUBJCT
PRINTED	A02.NC PECHATN-YX	00	08	00H-0058	AD01000 0	-------G----- -------A----		057 N COMP
CIRCUIT	N04.NC SX-EM	00	12	00H-0059	MDI2E0Y0 1	-------G----- -------F----		058 N COMPM
..	..	00	12	00H-0060	.			END OF SENT.

HINDSIGHT

				INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
[illegible]	DO1.NC DEN-IM	00H-0049	DNXPAKJPX	----I------- ----A-------	0000I0000C00	III L OBJ
[illegible]	DO1.NC DEN-IM	00H-0049	DAXPAKJPX	---------C-- ---------A--	0000I0000C00	III IND OBJ
[illegible]	DO1.NC DEN-IM	00H-0049	DNXPAKJPX	---------C-- ---------A--	0000I0000C00	III IND OBJ
SOLUTION	N10.NC RESHENI-JA	00H-0053	MDIIN000	------N------ -------N-----	R4P9	III SUBJCT
THESE	P01.NC FHI-IX	00H-0054	PN K PTD 0	-------G----- -------A----		053 N COMP
PREDICTION WIPER	---- 3492120I6X1R 0000I0000000	III L OBJ				
..	..	00H-0060	.			END OF SENT.

An Analyzed Sentence

Figure 103



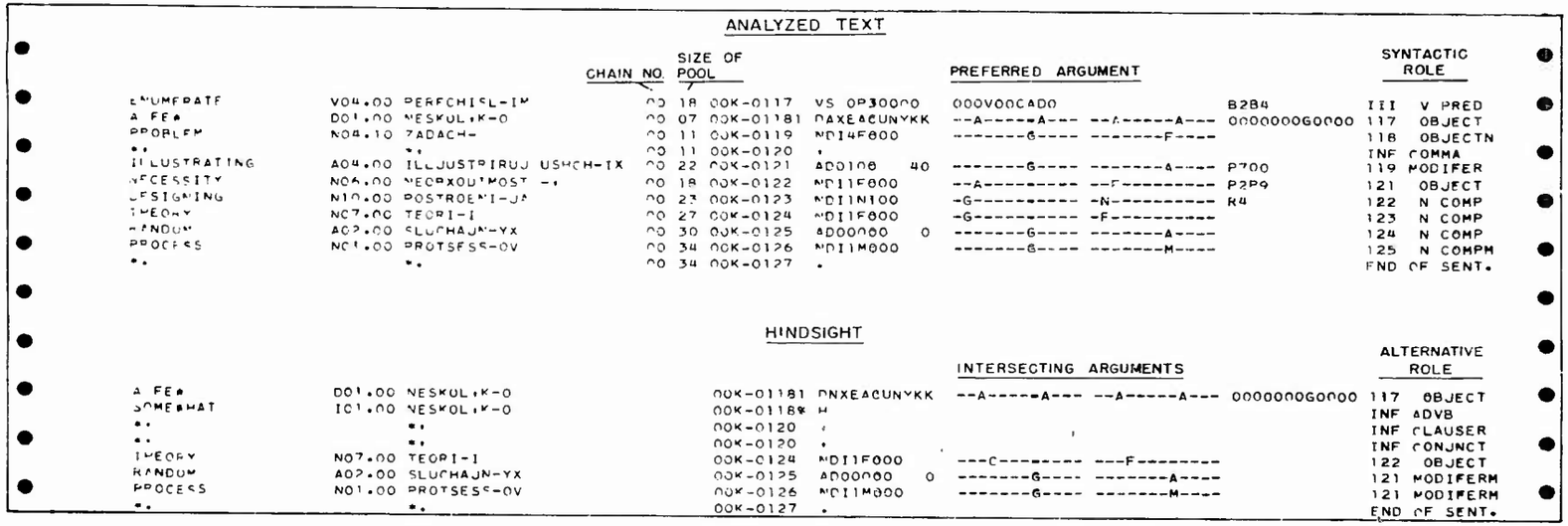
UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)
ENUMERATE	V04,00	PERECHISL-IM
A FEW	D01,00	NESKOL'K-O
SOMEWHAT	I01,00	NESKOL'K-O
PROBLEM	N04,10	ZALACH-
*.		*.
ILLUSTRATING	A04,00	ILLYUSTRIRUY USHCH-IX
NECESSITY	N04,00	NEOBKODIMOST' -I
DESIGNING	N10,00	PROYEKTIROVANI-JA
THEORY	N07,00	TEORI-I
HANDLE	A03,00	SLUCHAJN-YX
PROCESS	N01,00	PROTSESS-OV
*.		*.
ANEW PARAGRAPH		SNOW PARAGRAPH
PRESENTED	A07,00	PREDSTAV-IM
PRESENT	V04,01	PREDSTAV-IM
HERSELF	P01,00	SEB-E
*.		*.
THAT	I01,00	CHT-O
WHICH	P01,00	CHT-O
OF	P01,00	[illegible]
OF GIVEN A TASK	V18,00	ZADAL-IS
AIM	N04,00	TSEL-JOU
TRACE	V04,00	PROSLEDI-T
FOR	I01,00	Z-A
MOVEMENT	N10,00	DVIZHENI-EM
SOME	P01,00	KAKOJ-LIB-O
MOLECULE	N04,00	MOLEKUL-Y
GAS	N01,00	GAZ-A
UP	I01,00	IL-I
LIQUID	N04,00	ZHIDKOST-I
*.		*.

TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
00K-0117	VS OP30000	---V--CAD-	B2B4	1420?1428571
00K-01181	D XEACUNYKK	N-A---N-A--- A-A---A-A---	0000000G0000	1189?0333328
00K-01188	H			1189?0999998
00K-0119	NDI4F000	-------G----- -------F----		0609?0006000
00K-0120	*			
00K-0121	AD0100 40	-------GA--P -------AA--A	P700	078509230760
00K-0122	ND11F000	N-A--------- F-F---------	P2P9	117522500001
00K-0123	ND11N100	-G----N-A--- -N----N-N---	P4	153070006000
00K-0124	ND11F000	-G-C-PN-A--- -F-F-FF-F---		197130006000
00K-0125	AD00000 0	-------GA--P -------AA--A		185731145827
00K-0126	ND11M000	-------G----- -------M-----		164970006000
00K-0127	*			
00K-0128	###			
00K-01291	AD00000 ' 01	N---------- M----------		155775000000
00K-01299	VS00P3L200	---V--CAD-	B2B4	1557?0006000
00K-0130	PN K AAX L	---C-P---C-P ---A-A---A-A		182456666666
00K-0131	*			
00K-01321	C			213?87560000
00K-01329	PNCI STR1 0	N-A--------- N-N---------		213847500000
00K-0133	PN A PVP 0	------N----- ------H-----		102313333338
00K-0134	VSROP80000	---PPPAADR	B3	0609?8006000
00K-0135	ND1IF0Y0	----I------- ----F-------	P2	211870006000
00K-0136	VS OP30000 F-		B0B6	163910006000
00K-0137	R	--A-I---A-I-	1A0R00BG0680	0572?0006000
00K-0138	ND11N100	----I------- ----N-------	P4	045910006000
00K-0139	PK K STT 0	NGACIP------ MFFMFF-------		085455?29304
00K-0140	ND12F000	-G----N-A--- -F----F-F---		110049285710
00K-0141	ND11M000	-G---------- -M----------		039950000000
00K-0142	C			078400006000
00K-0143	ND11F100	-G-C-PN-A--- -F-F-FF-F---	P2	057070006000
00K-0144	*			

An Analyzed Sentence

Figure 104



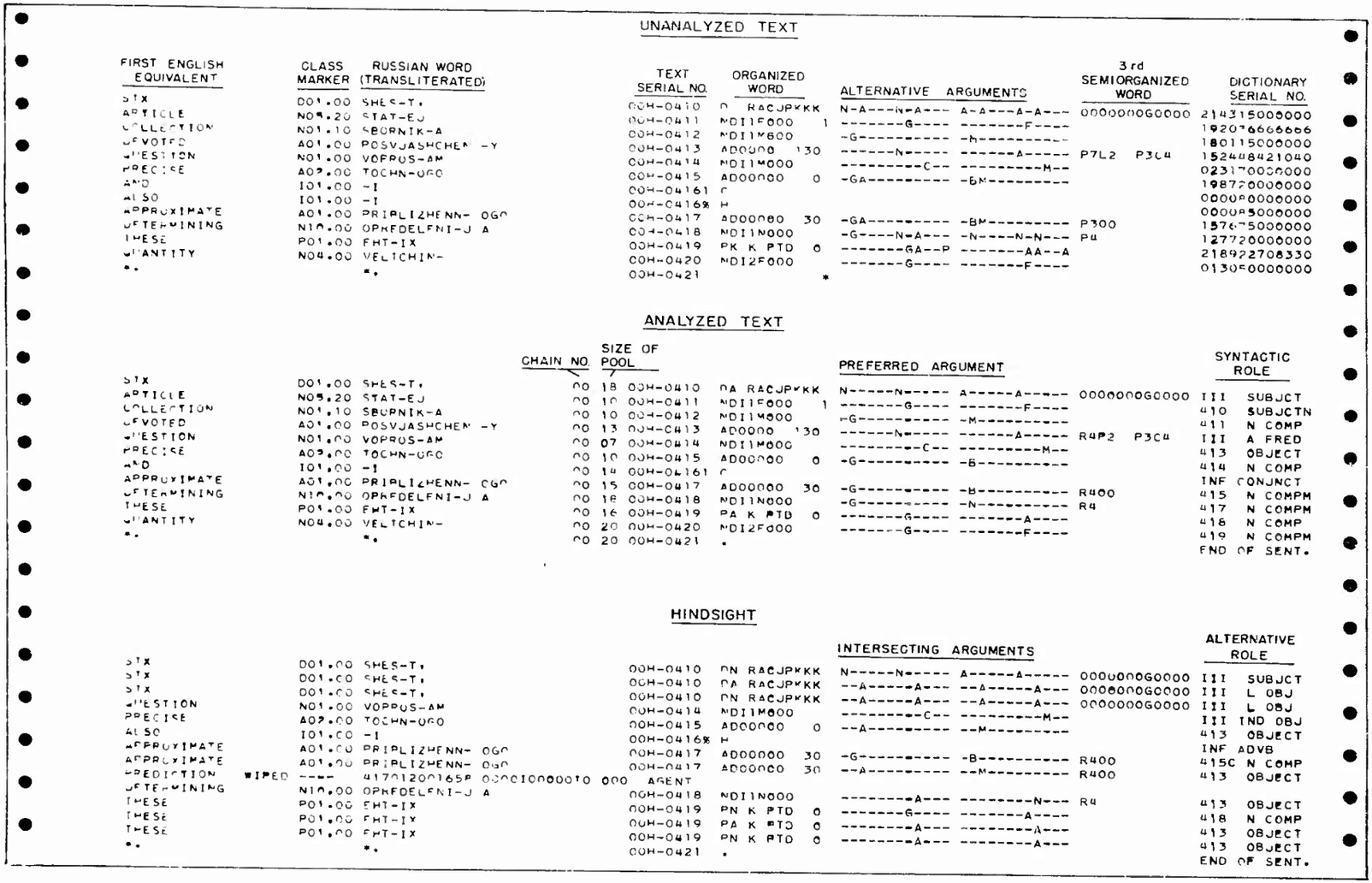
ANALYZED TEXT

			CHAIN NO.	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE	
ENUMERATE	V04.00	PERFCHISL-IM	00	18	00K-0117	VS 0P30000	000V00CAD0		B2B4	III	V PRED
A FE*	D01.00	NESKOL*K-0	00	07	00K-01181	DNXEACUNYKK	--A-----*A---	--A-----A---	00000006G0000	117	OBJECT
PROBLEM	N04.10	ZADACH-	00	11	00K-0119	MDI4F000	-------G----	-------F----		118	OBJECTN
*.		*.	00	11	00K-0120	.				INF	COMMA
ILLUSTRATING	A04.00	ILLJUSTRIRUJ USHCH-IX	00	22	00K-0121	AD0100 40	-------G----	-------A----	P700	119	MODIFER
NECESSITY	N04.00	NEOBXOUIMOST -*	00	18	00K-0122	MDI1F000	--A---------	--F---------	P2P9	121	OBJECT
DESIGNING	N10.00	POSTROENI-JA	00	23	00K-0123	MDI1N100	-G----------	-N----------	R4	122	N COMP
THEORY	N07.00	TEORI-I	00	27	00K-0124	MDI1F000	-G----------	-F----------		123	N COMP
RANDOM	A02.00	SLUCHAJN-YX	00	30	00K-0125	AD00000 0	-------G----	-------A----		124	N COMP
PROCESS	N01.00	PROTSESS-OV	00	34	00K-0126	MDI1M000	-------G----	-------M----		125	N COMPM
*.		*.	00	34	00K-0127	.				END OF SENT.	

HINDSIGHT

					INTERSECTING ARGUMENTS			ALTERNATIVE ROLE	
A FE*	D01.00	NESKOL*K-0	00K-01181	DNXEACUNYKK	--A-----*A---	--A-----A---	00000006G0000	117	OBJECT
SOMEWHAT	I01.00	NESKOL*K-0	00K-0118*	H				INF	ADVB
*.		*.	00K-0120	.				INF	CLAUSER
*.		*.	00K-0120	.				INF	CONJNCT
THEORY	N07.00	TEORI-I	00K-0124	MDI1F000	---C---------	---F---------		122	OBJECT
RANDOM	A02.00	SLUCHAJN-YX	00K-0125	AD00000 0	-------G----	-------A----		121	MODIFERM
PROCESS	N01.00	PROTSESS-OV	00K-0126	MDI1M000	-------G----	-------M----		121	MODIFERM
*.		*.	00K-0127	.				END OF SENT.	

Figure 104 (continued)



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
STX	D01.00	SHES-T.	00H-0410	D RACJPKKK	N-A---N-A--- A-A---A-A---	0000000G0000	214315000000
ARTICLE	N05.20	STAT-EJ	00H-0411	NDI1F000 1	-------G---- -------F----		192076666666
COLLECTION	N01.10	SBORNIK-A	00H-0412	NDI1M000	-G---------- -M----------		180115000000
DEVOTED	A01.00	POSVJASHCHEN -Y	00H-0413	AD00000 130	------N----- ------A-----	P7L2 P3C4	152448421040
QUESTION	N01.00	VOPROS-AM	00H-0414	NDI1M000	---------C-- ---------M--		023170000000
PRECISE	A02.00	TOCHN-OGO	00H-0415	AD00000 0	-GA--------- -BM---------		198720000000
AND	I01.00	-I	00H-0416	C			000080000000
ALSO	I01.00	-I	00H-0416%	H			000085000000
APPROXIMATE	A01.00	PRIBLIZHENN- OGO	00H-0417	AD00000 30	-GA--------- -BM---------	P300	157675000000
DETERMINING	N10.00	OPREDELENI-J A	00H-0418	NDI1N000	-G----N-A--- -N----N-N---	P4	127720000000
THESE	P01.00	FHT-IX	00H-0419	PK K PTD 0	-------GA--P -------AA--A		218922708330
QUANTITY	N04.00	VELICHIN-	00H-0420	NDI2F000	-------G---- -------F----		013050000000
*.		*.	00H-0421	*			

ANALYZED TEXT

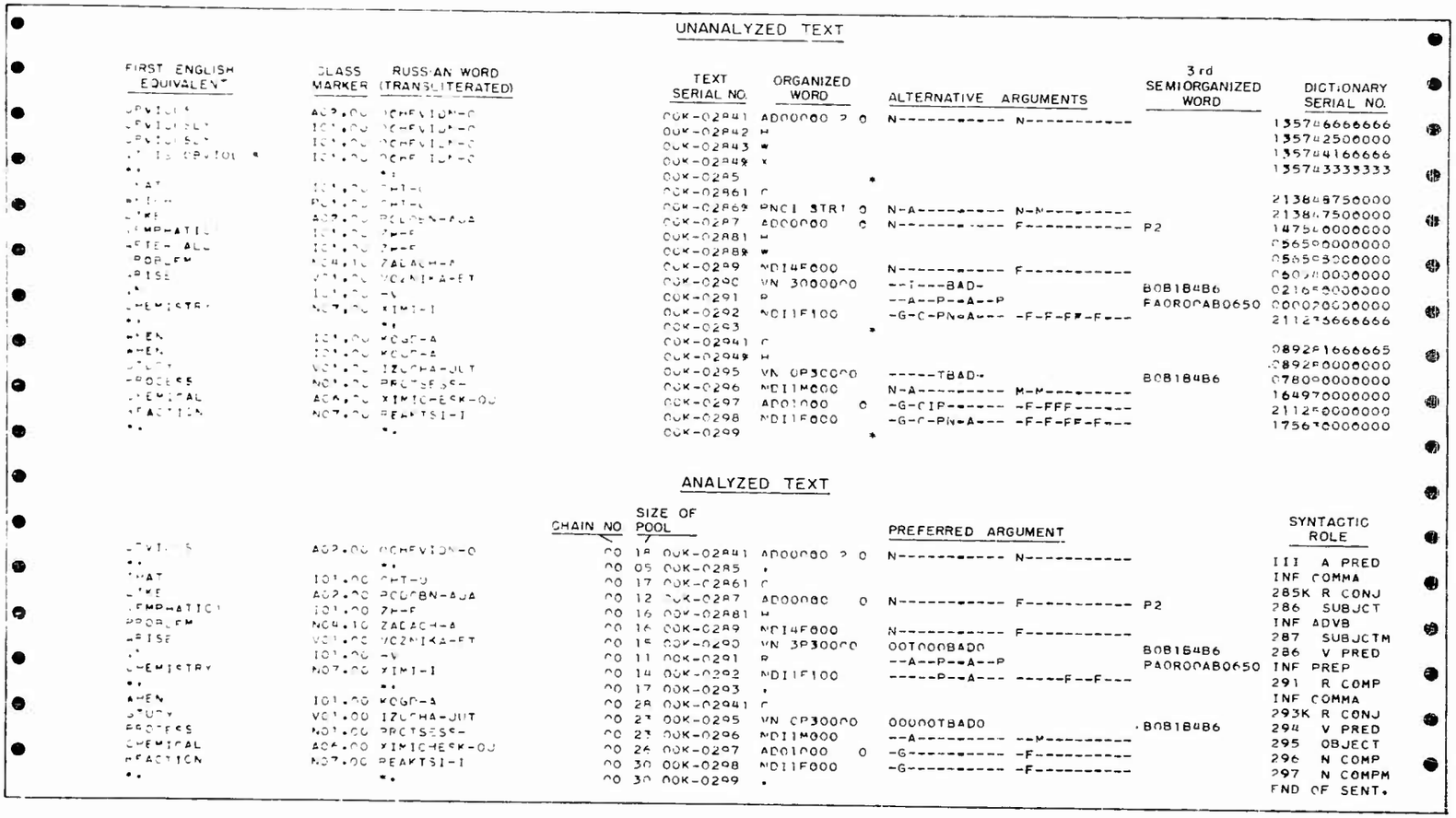
			CHAIN NO.	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE
STX	D01.00	SHES-T.	00	18	00H-0410	DA RACJPKKK	N------N----- A------A-----	0000000G0000	III SUBJCT
ARTICLE	N05.20	STAT-EJ	00	10	00H-0411	NDI1F000 1	-------G---- -------F----		410 SUBJCTN
COLLECTION	N01.10	SBORNIK-A	00	10	00H-0412	NDI1M000	-G---------- -M----------		411 N COMP
DEVOTED	A01.00	POSVJASHCHEN -Y	00	13	00H-0413	AD00000 130	------N----- ------A-----	R4P2 P3C4	III A FRED
QUESTION	N01.00	VOPROS-AM	00	07	00H-0414	NDI1M000	---------C-- ---------M--		413 OBJECT
PRECISE	A02.00	TOCHN-OGO	00	10	00H-0415	AD00000 0	-G---------- -B----------		414 N COMP
AND	I01.00	-I	00	14	00H-0416	C			INF CONJNCT
APPROXIMATE	A01.00	PRIBLIZHENN- OGO	00	15	00H-0417	AD00000 30	-G---------- -B----------	R400	415 N COMPM
DETERMINING	N10.00	OPREDELENI-J A	00	18	00H-0418	NDI1N000	-G---------- -N----------	R4	417 N COMPM
THESE	P01.00	FHT-IX	00	16	00H-0419	PA K PTD 0	-------G---- -------A----		418 N COMP
QUANTITY	N04.00	VELICHIN-	00	20	00H-0420	NDI2F000	-------G---- -------F----		419 N COMPM
*.		*.	00	20	00H-0421	.			END OF SENT.

HINDSIGHT

					INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
STX	D01.00	SHES-T.	00H-0410	DN RACJPKKK	N------N----- A------A-----	0000000G0000	III SUBJCT
STX	D01.00	SHES-T.	00H-0410	DA RACJPKKK	--A------A---- --A------A---	0000000G0000	III L OBJ
STX	D01.00	SHES-T.	00H-0410	DN RACJPKKK	--A------A---- --A------A---	0000000G0000	III L OBJ
QUESTION	N01.00	VOPROS-AM	00H-0414	NDI1M000	---------C-- ---------M--		III IND OBJ
PRECISE	A02.00	TOCHN-OGO	00H-0415	AD00000 0	--A---------- --M---------		413 OBJECT
ALSO	I01.00	-I	00H-0416	H			INF ADVB
APPROXIMATE	A01.00	PRIBLIZHENN- OGO	00H-0417	AD00000 30	-G---------- -B----------	R400	415C N COMP
APPROXIMATE	A01.00	PRIBLIZHENN- OGO	00H-0417	AD00000 30	--A--------- --M---------	R400	413 OBJECT
PREDICTION	WIPED	---- 417012001658	00001000010	000 AGENT			
DETERMINING	N10.00	OPREDELENI-J A	00H-0418	NDI1N000	--------A---- --------N---	R4	413 OBJECT
THESE	P01.00	FHT-IX	00H-0419	PN K PTD 0	-------G---- -------A----		418 N COMP
THESE	P01.00	FHT-IX	00H-0419	PA K PTD 0	--------A--- --------A---		413 OBJECT
THESE	P01.00	FHT-IX	00H-0419	PN K PTD 0	--------A--- --------A---		413 OBJECT
*.		*.	00H-0421	.			END OF SENT.

An Analyzed Sentence

Figure 105



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
[illegible]	ADJ.00	OCHEVIDN-O	00K-02841	AD00000 2 0	N----------	N----------		135746666666
[illegible]	IO1.00	OCHEVIDN-O	00K-02842	H				135742500000
[illegible]	IO1.00	OCHEVIDN-O	00K-02843	*				135744166666
[illegible]	IO1.00	OCHEVIDN-O	00K-02848	x				135743333333
*.		*.	00K-0285		*			
THAT	IO1.00	CHT-O	00K-02861	C				213848750000
[illegible]	PO1.00	CHT-O	00K-02869	PNCI STRT 0	N-A----------	N-M----------		213847500000
LIKE	ADJ.00	PODOBN-AJA	00K-0287	AD00000 0	N----------	F----------	P2	14754000000
EMPHATIC	IO1.00	ZHE	00K-02881	H				056500000000
AFTER ALL	IO1.00	ZHE	00K-02888	*				058583000000
PROBLEM	NO4.10	ZADACHA	00K-0289	NDI4F000	N----------	F----------		060240000000
RISE	VO1.00	VOZNIKA-ET	00K-029C	VN 3000000	--I---BAD-		B0B1B4B6	021658000000
A	IO1.00	-A	00K-0291	P	--A--P--A--P		PA0R00AB0650	000020000000
CHEMISTRY	NO7.00	XIMI-I	00K-0292	NDI1F100	-G-C-PN-A---	-F-F-FF-F---		211273666666
*.		*.	00K-0293		*			
WHEN	IO1.00	KOGD-A	00K-02941	C				089281666665
WHEN	IO1.00	KOGD-A	00K-02948	H				089280000000
STUDY	VO1.00	IZUCHA-JUT	00K-0295	VN 0P3C000	-----TBAD-		B0B1B4B6	078000000000
PROCESS	NO1.00	PROTSESS-	00K-0296	NDI1M000	N-A----------	M-M----------		164970000000
CHEMICAL	A0A.00	XIMICHESK-OJ	00K-0297	AD01000 0	-G-CIP------	-F-FFF------		211250000000
REACTION	NO7.00	REAKTSI-I	00K-0298	NDI1F000	-G-C-PN-A---	-F-F-FF-F---		175670000000
*.		*.	00K-0299		*			

ANALYZED TEXT

		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE
[illegible]	A02.00	00	18	00K-02841	AD00000 2 0	N----------	N----------		III A PRED
*.	*.	00	05	00K-0285	*				INF COMMA
THAT	IO1.00	00	17	00K-02861	C				285K R CONJ
LIKE	A02.00	00	12	00K-0287	AD00000 0	N----------	F----------	P2	286 SUBJCT
EMPHATIC	IO1.00	00	16	00K-02881	H				INF ADVB
PROBLEM	NO4.10	00	16	00K-0289	NDI4F000	N----------	F----------		287 SUBJCTM
RISE	VO1.00	00	15	00K-0290	VN 3P30000	00T000BAD0		B0B1B4B6	286 V PRED
A	IO1.00	00	11	00K-0291	P	--A--P--A--P		PA0R00AB0650	INF PREP
CHEMISTRY	NO7.00	00	14	00K-0292	NDI1F100	-----P--A---	-----F--F---		291 R COMP
*.	*.	00	17	00K-0293	*				INF COMMA
WHEN	IO1.00	00	28	00K-02941	C				293K R CONJ
STUDY	VO1.00	00	27	00K-0295	VN 0P30000	00000TBAD0		B0B1B4B6	294 V PRED
PROCESS	NO1.00	00	23	00K-0296	NDI1M000	--A----------	--M----------		295 OBJECT
CHEMICAL	A0A.00	00	26	00K-0297	AD01000 0	-G----------	-F----------		296 N COMP
REACTION	NO7.00	00	30	00K-0298	NDI1F000	-G----------	-F----------		297 N COMPM
*.	*.	00	30	00K-0299	*				END OF SENT.

An Analyzed Sentence

Figure 106

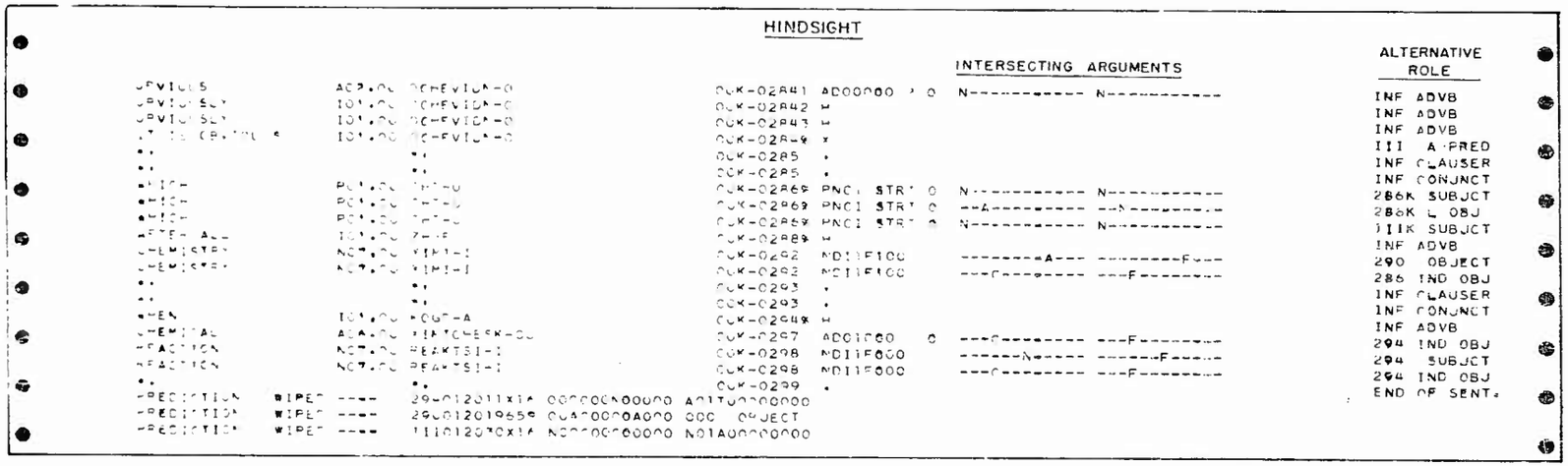
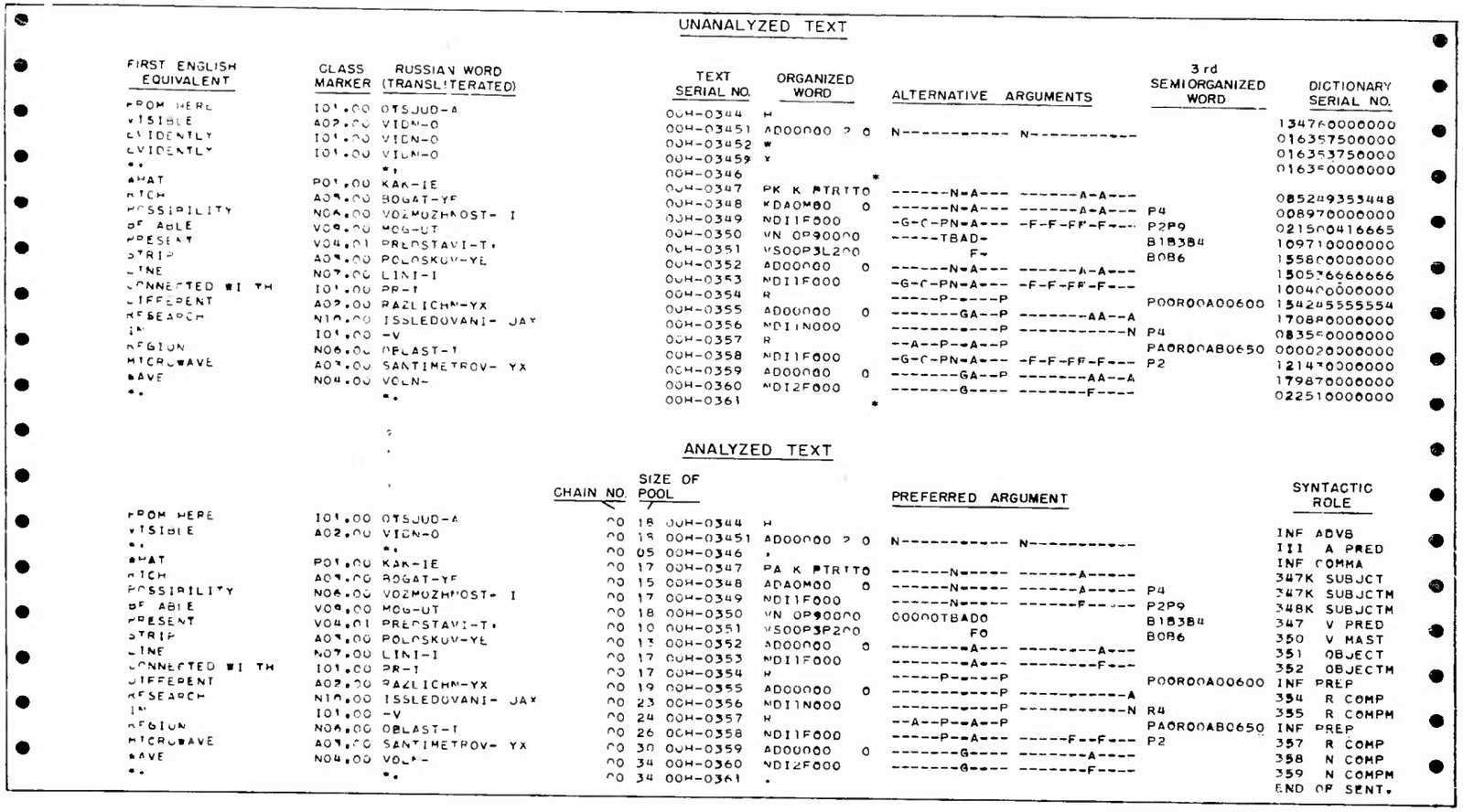


Figure 106 (continued)



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
FROM HERE	I01.00	OTSJUD-A	00H-0344	H				134760000000
VISIBLE	A02.00	VIDN-O	00H-03451	AD00000 2 0	N----------	N----------		016357500000
EVIDENTLY	I01.00	VIDN-O	00H-03452	W				016353750000
EVIDENTLY	I01.00	VIDN-O	00H-03453	X				016350000000
*.		*.	00H-0346	*				
WHAT	P01.00	KAK-IE	00H-0347	PK K PTRTTO	------N-A---	------A-A---		085249353448
RICH	A03.00	BOGAT-YE	00H-0348	KDAOM00 0	------N-A---	------A-A---	P4	008970000000
POSSIBILITY	N04.00	VOZMOZHNOST- I	00H-0349	NDI1F000	-G-C-PN-A---	-F-F-FF-F---	P2P9	021500416665
BE ABLE	V09.00	MOG-UT	00H-0350	VN 0P90000	-----TBAD-		B1B3B4	109710000000
PRESENT	V04.01	PREDSTAVI-T,	00H-0351	VSOOP3L200	F-		B0B6	155800000000
STRIP	A03.00	POLOSKOV-YE	00H-0352	AD00000 0	------N-A---	------A-A---		150536666666
LINE	N07.00	LINI-I	00H-0353	NDI1F000	-G-C-PN-A---	-F-F-FF-F---		100400000000
CONNECTED WI TH	I01.00	PR-I	00H-0354	R	-----P-----P		P00R00A00600	154245555554
DIFFERENT	A03.00	RAZLICHN-YX	00H-0355	AD00000 0	-------GA--P	-------AA--A		170880000000
RESEARCH	N10.00	ISSLEDOVANI- JAX	00H-0356	NDI1N000	----------P	----------N	P4	083560000000
IN	I01.00	-V	00H-0357	R	--A--P--A--P		PA0R00AB0650	000020000000
REGION	N06.00	OBLAST-I	00H-0358	NDI1F000	-G-C-PN-A---	-F-F-FF-F---	P2	121470000000
MICROWAVE	A03.00	SANTIMETROV- YX	00H-0359	AD00000 0	-------GA--P	-------AA--A		179870000000
HAVE	N04.00	VOLN-	00H-0360	NDI2F000	-------G----	-------F----		022510000000
*.		*.	00H-0361	*				

ANALYZED TEXT

		CHAIN NO.	SIZE OF POOL		PREFERRED ARGUMENT			SYNTACTIC ROLE
FROM HERE	I01.00 OTSJUD-A	00	18	00H-0344 H				INF ADVB
VISIBLE	A02.00 VIDN-O	00	18	00H-03451 AD00000 2 0	N----------	N----------		III A PRED
*.	*.	00	05	00H-0346 .				INF COMMA
WHAT	P01.00 KAK-IE	00	17	00H-0347 PA K PTRTTO	------N-----	------A-----		347K SUBJCT
RICH	A03.00 BOGAT-YE	00	15	00H-0348 ADAOM00 0	------N-----	------A-----	P4	347K SUBJCTM
POSSIBILITY	N04.00 VOZMOZHNOST- I	00	17	00H-0349 NDI1F000	------N-----	------F-----	P2P9	348K SUBJCTM
BE ABLE	V09.00 MOG-UT	00	18	00H-0350 VN 0P90000	00000TBAD0		B1B3B4	347 V PRED
PRESENT	V04.01 PREDSTAVI-T,	00	10	00H-0351 VSOOP3P200	F0		B0B6	350 V MAST
STRIP	A03.00 POLOSKOV-YE	00	13	00H-0352 AD00000 0	--------A---	---------A---		351 OBJECT
LINE	N07.00 LINI-I	00	17	00H-0353 NDI1F000	--------A---	---------F---		352 OBJECTM
CONNECTED WI TH	I01.00 PR-I	00	17	00H-0354 R	-----P-----P		P00R00A00600	INF PREP
DIFFERENT	A03.00 RAZLICHN-YX	00	19	00H-0355 AD00000 0	----------P	----------A		354 R COMP
RESEARCH	N10.00 ISSLEDOVANI- JAX	00	23	00H-0356 NDI1N000	----------P	----------N	R4	355 R COMPM
IN	I01.00 -V	00	24	00H-0357 R	--A--P--A--P		PA0R00AB0650	INF PREP
REGION	N06.00 OBLAST-I	00	26	00H-0358 NDI1F000	-----P--A---	-----F--F---	P2	357 R COMP
MICROWAVE	A03.00 SANTIMETROV- YX	00	30	00H-0359 AD00000 0	-------G----	-------A----		358 N COMP
HAVE	N04.00 VOLN-	00	34	00H-0360 NDI2F000	-------G----	-------F----		359 N COMPM
*.	*.	00	34	00H-0361 .				END OF SENT.

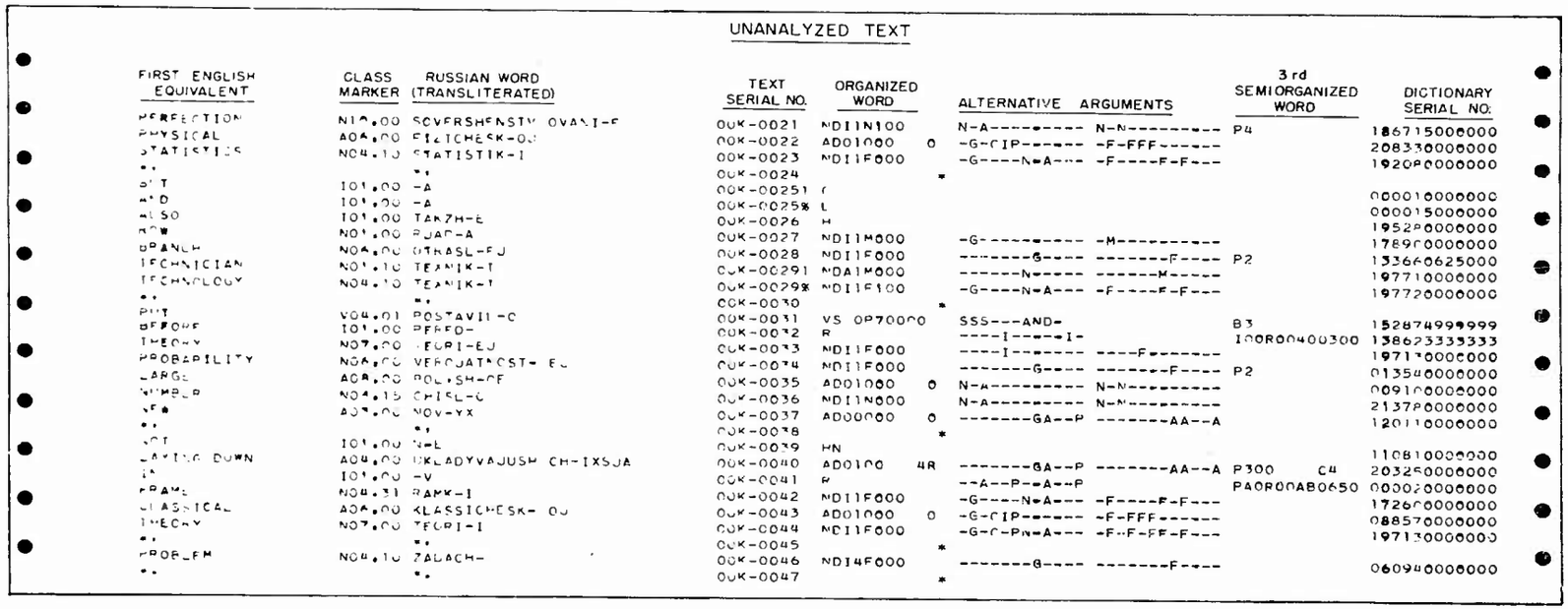
An Analyzed Sentence

Figure 107

HINDSIGHT

					INTERSECTING ARGUMENTS			ALTERNATIVE ROLE
VISIBLE		A09.00 VIDN-0	00H-03451	AD00000 > 0	N----------	N----------		INF ADVB
EVIDENTLY		I01.00 VIDN-0	00H-03452	H				INF ADVB
EVIDENTLY		I01.00 VIDN-0	00H-03453	X				III A PRED
.,		.,	00H-0346	.				INF CLAUSER
.,		.,	00H-0346	.				INF CONJNCT
WHAT		P01.00 KAK-IE	00H-0347	PN K PTRTTO	------N-----	------A------		347K SUBJCT
WHAT		P01.00 KAK-IE	00H-0347	PA K PTRTTO	--------A---	--------A---		347K L OBJ
WHAT		P01.00 KAK-IF	00H-0347	PN K PTRTTO	--------A---	--------A---		347K L OBJ
WITH		A09.00 PCGAT-YE	00H-0348	NDA0M00 0	------N-----	------A------	P4	347K SUBJCTM
WITH		A09.00 PCGAT-YE	00H-0348	ADA0M00 0	--------A---	--------A---	P4	347 L OBJ
WITH		A09.00 PCGAT-YE	00H-0348	NDA0M00 0	--------A---	--------A---	P4	347 L OBJ
POSSIBILITY		N0A.00 VOZMOZHNOST- I	00H-0349	ND11F000	--------A---	--------F---	P2P9	347 L OBJ
POSSIBILITY		N0A.00 VOZMOZHNOST- I	00H-0349	ND11F000	---C-------	---F--------	P2P8	347 IND OBJ
LINE		N07.00 LINI-I	00H-0353	ND11F000	---C-------	---F--------		351 OBJECT
LINE		N07.00 LINI-I	00H-0353	ND11F000	---C-------	---F--------		347 IND OBJ
REGION		N0A.00 OBLAST-I	00H-0358	ND11F000	---C-------	---F--------	P2	351 OBJECT
REGION		N0A.00 OBLAST-I	00H-0358	ND11F000	---C-------	---F--------	P2	347 IND OBJ
PREDICTION	WIPED	---- 351012020658	000000000000	000 OBJECT				
.,		.,	00H-0361	.				END OF SENT.
PREDICTION	WIPED	---- III012052X1A	N0000000000	N01A000000				

Figure 107 (continued)



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
PERFECTION	N1A.00	SOVERSHENSTV OVANI-E	00K-0021	ND11N100		N-A----------	N-N----------	P4	186715000000
PHYSICAL	A0A.00	FIZICHESK-OJ	00K-0022	AD01000	0	-G-CIP-------	-F-FFF-------		208330000000
STATISTICS	N04.10	STATISTIK-I	00K-0023	ND11F000		-G----N-A----	-F----F-F---		192000000000
*.		*.	00K-0024		*				
BUT	101.00	-A	00K-00251	C					000010000000
AND	101.00	-A	00K-0025%	L					000015000000
ALSO	101.00	TAKZH-E	00K-0026	H					195200000000
NOW	N01.00	SEJAS-A	00K-0027	ND11M000		-G-----------	-M----------		178900000000
BRANCH	N04.00	OTRASL-EJ	00K-0028	ND11F000		--------G----	-------F----	P2	133660625000
TECHNICIAN	N01.10	TEXNIK-I	00K-00291	ND01M000		------N------	------M------		197710000000
TECHNOLOGY	N04.10	TEXNIK-I	00K-0029%	ND11F100		-G----N-A----	-F----F-F---		197720000000
*.		*.	00K-0030		*				
PUT	V04.01	POSTAVIL-O	00K-0031	VS 0P70000		SSS---AND-		B3	152874999999
BEFORE	101.00	PERED-	00K-0032	R		----I-----I-		I00R00400300	138623333333
THEORY	N07.00	TEORI-EJ	00K-0033	ND11F000		----I------	----F-------		197130000000
PROBABILITY	N0A.00	VEROJATNOST- EJ	00K-0034	ND11F000		--------G----	-------F----	P2	013540000000
LARGE	A0A.00	BOL-SH-OE	00K-0035	AD01000	0	N-A----------	N-N----------		009100000000
NUMBER	N04.15	CHISL-O	00K-0036	ND11N000		N-A----------	N-N----------		213720000000
YES	A07.00	NOV-YX	00K-0037	AD00000	0	-------GA--P	-------AA--A		120110000000
*.		*.	00K-0038		*				
NOT	101.00	N-E	00K-0039	HN					110810000000
LAYING DOWN	A04.00	UKLADYVAJUSH CH-IXSJA	00K-0040	AD0100	4R	-------GA--P	-------AA--A	P300 C4	203250000000
IN	101.00	-V	00K-0041	R		--A--P--A--P		PA0R00AB0650	000020000000
FRAME	N04.31	RAMK-I	00K-0042	ND11F000		-G----N-A----	-F----F-F---		172600000000
CLASSICAL	A0A.00	KLASSICHESK- OJ	00K-0043	AD01000	0	-G-CIP-------	-F-FFF-------		088570000000
THEORY	N07.00	TEORI-I	00K-0044	ND11F000		-G-C-PN-A----	-F-F-FF-F---		197130000000
*.		*.	00K-0045		*				
PROBLEM	N04.10	ZADACH-	00K-0046	ND14F000		-------G----	--------F----		060940000000
*.		*.	00K-0047		*				

An Analyzed Sentence

Figure 108

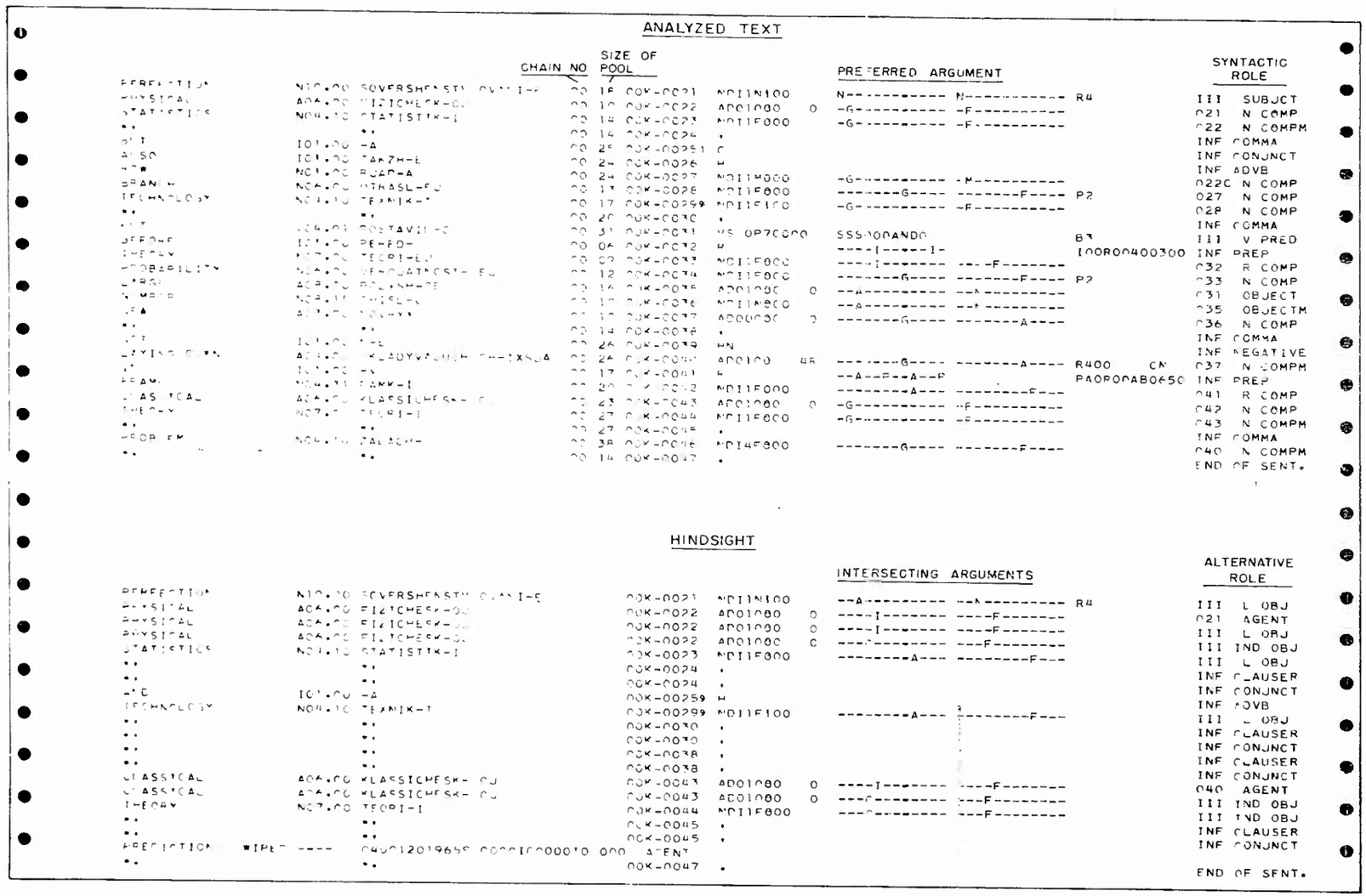
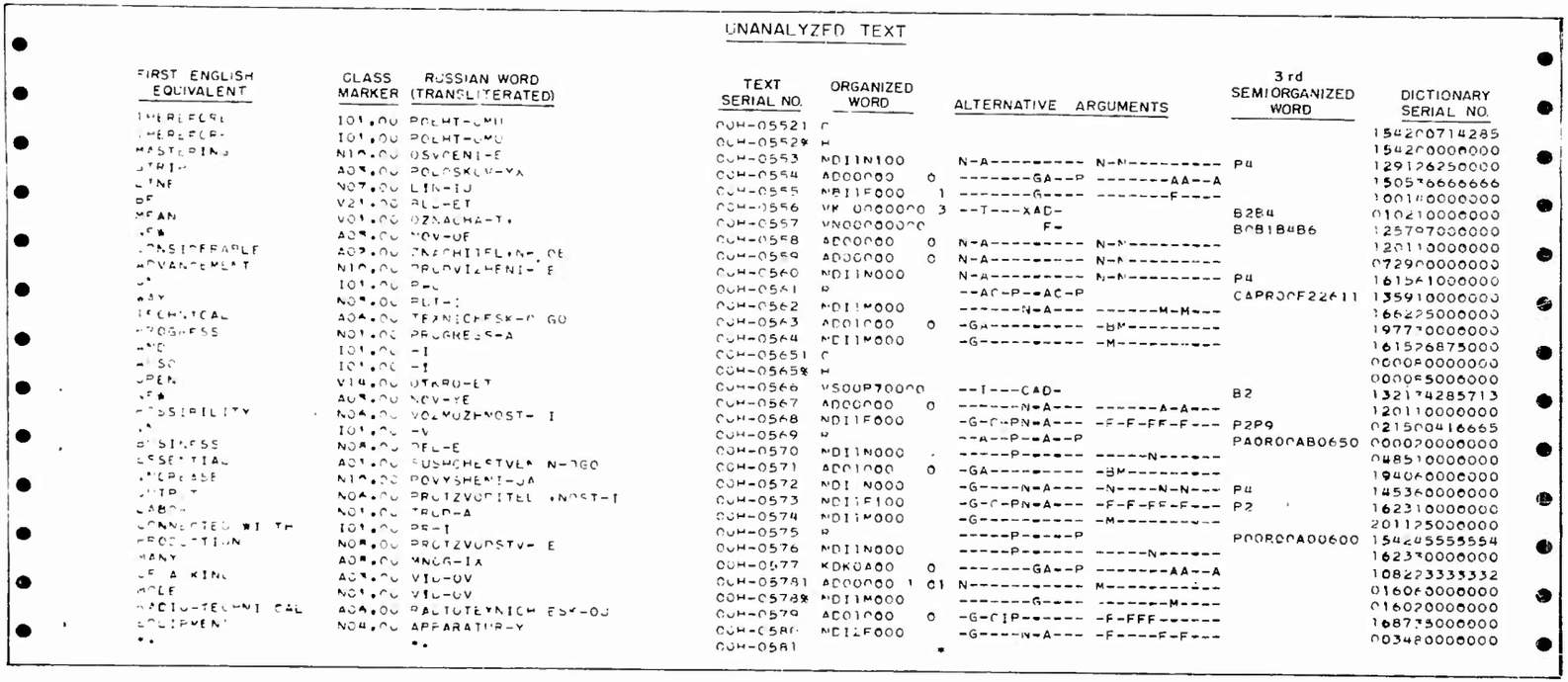


Figure 108 (continued)



UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)
THEREFORE	101,00	POEHT-OMU
THEREFOR-	101,00	POEHT-OMU
MASTERING	N10,00	OSVOENI-E
STRIP	A07,00	POLOSKOV-YA
LINE	N07,00	LIN-IJ
BE	V21,00	BUD-ET
MEAN	V01,00	OZNACHA-T'
WE*	A09,00	MOV-UE
CONSIDERABLE	A09,00	ZNACHITEL'N-OE
ADVANCEMENT	N10,00	PRODVIZHENI- E
OF	101,00	P-E
MAY	N09,00	BUT-I
TECHNICAL	A04,00	TEXNICHESK-O GO
PROGRESS	N01,00	PROGRESS-A
AND	101,00	-I
ALSO	101,00	-I
OPEN	V14,00	OTKRO-ET
WE*	A09,00	MOV-YE
POSSIBILITY	N04,00	VOZMUZHNOST- I
IN	101,00	-V
BUSINESS	N04,00	DEL-E
ESSENTIAL	A01,00	SUSHCHESTVEN N-OGO
INCREASE	N10,00	POVYSHENI-JA
WITH	N04,00	PROIZVODITEL +NOST-I
LABOR	N01,00	TRUD-A
CONNECTED WITH	101,00	PR-I
PRODUCTION	N04,00	PROIZVODSTV- E
MANY	A09,00	MNOG-IX
OF A KIND	A03,00	VID-OV
WHOLE	N01,00	VID-OV
RADIO-TECHNICAL	A04,00	RADIOTEXNICH ESK-OJ
EQUIPMENT	N04,00	APPARATUR-Y
..		..

TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
00H-05521	C					154200714285
00H-0552*	H					154200000000
00H-0553	NDIIN100		N-A----------	N-N----------	P4	129126250000
00H-0554	AD00000	0	-------GA--P	-------AA--A		150536666666
00H-0555	NBIIF000	1	-------G-----	-------F-----		100160000000
00H-0556	VK 00000000	3	--T---XAD-		B2B4	010210000000
00H-0557	VN00000000		F-		B0B1B4B6	125797000000
00H-0558	AD00000	0	N-A----------	N-N----------		120110000000
00H-0559	AD00000	0	N-A----------	N-N----------		072900000000
00H-0560	NDIIN000		N-A----------	N-N----------	P4	161561000000
00H-0561	P		--AC-P--AC-P		CAPR00F22611	135910000000
00H-0562	NDIIM000		------N-A----	------M-M---		166225000000
00H-0563	AD01000	0	-GA----------	-BM----------		197730000000
00H-0564	NDIIM000		-G----------	-M----------		161526875000
00H-05651	C					000050000000
00H-0565*	H					000055000000
00H-0566	VS00P70000		--I---CAD-		B2	132174285713
00H-0567	AD00000	0	------N-A----	------A-A---		120110000000
00H-0568	NDIIF000		-G-C-PN-A----	-F-F-FF-F---	P2P9	021500416665
00H-0569	P		--A--P--A--P		PA0R00AB0650	000020000000
00H-0570	NDIIN000		-----P------	-----N------		048510000000
00H-0571	AD01000	0	-GA----------	-BM----------		194060000000
00H-0572	NDI N000		-G----N-A----	-N----N-N---	P4	145360000000
00H-0573	NDIIF100		-G-C-PN-A----	-F-F-FF-F---	P2	162310000000
00H-0574	NDIIM000		-G----------	-M----------		201125000000
00H-0575	P		-----P-----P		P00R00A00600	154245555554
00H-0576	NDIIN000		-----P------	-----N------		162370000000
00H-0577	KDK0A00	0	-------GA--P	-------AA--A		108223333332
00H-05781	AD00000	1 01	N----------	M----------		016060000000
00H-0578*	NDIIM000		-------G-----	-------M-----		016020000000
00H-0579	AD01000	0	-G-CIP------	-F-FFF------		168735000000
00H-0580	NDIIF000		-G----N-A----	-F----F-F---		003480000000
00H-0581			*			

An Analyzed Sentence

Figure 109

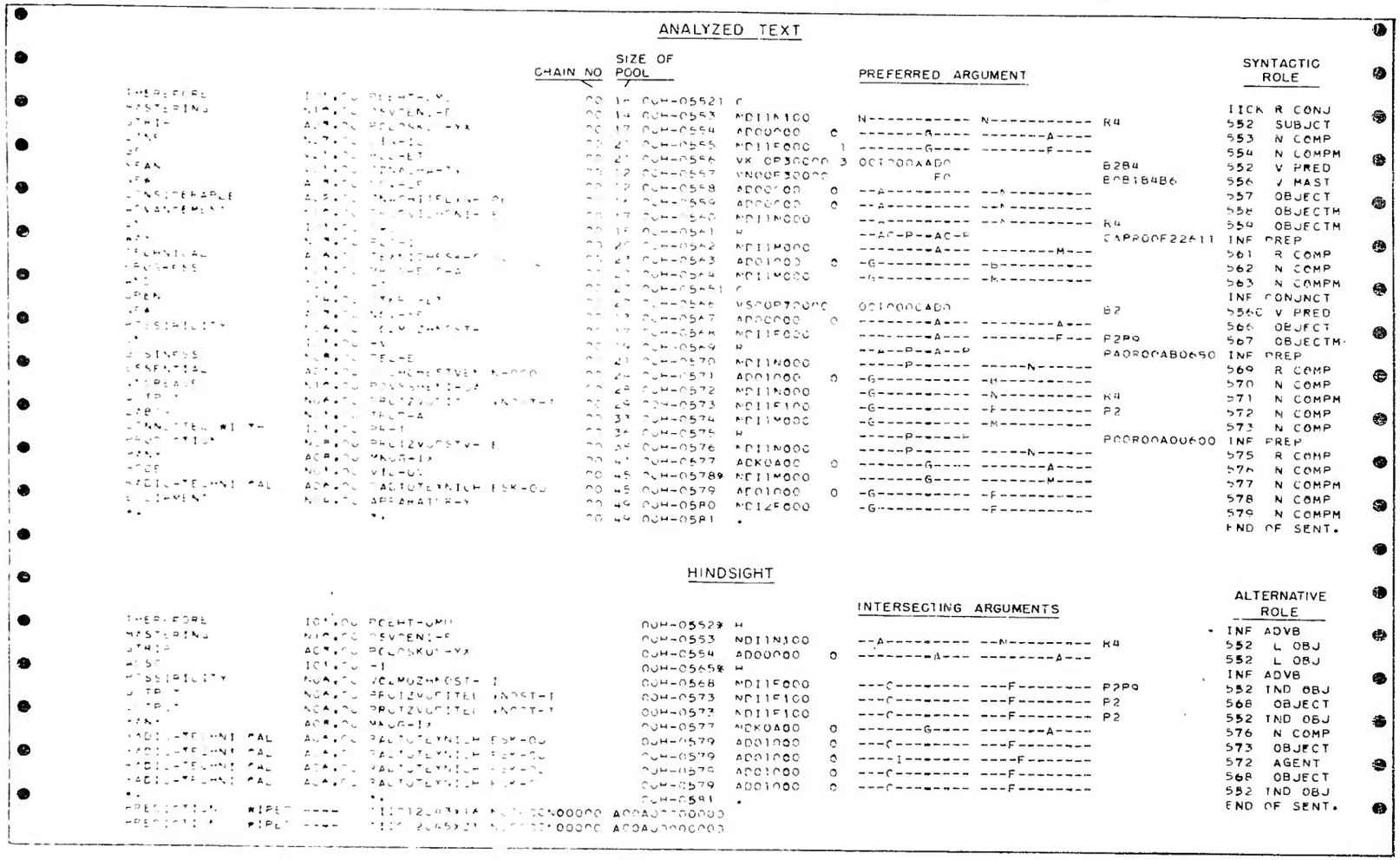
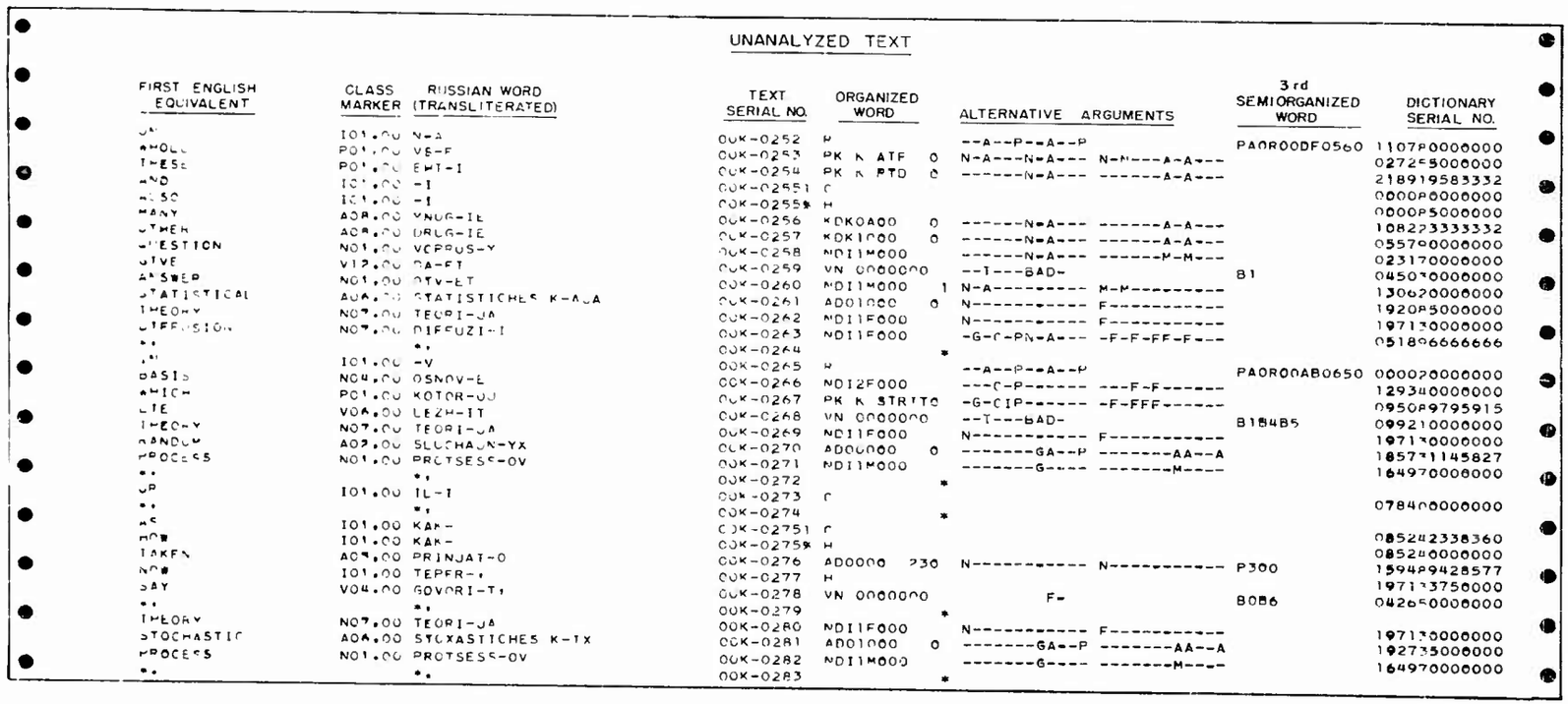


Figure 109 (continued)

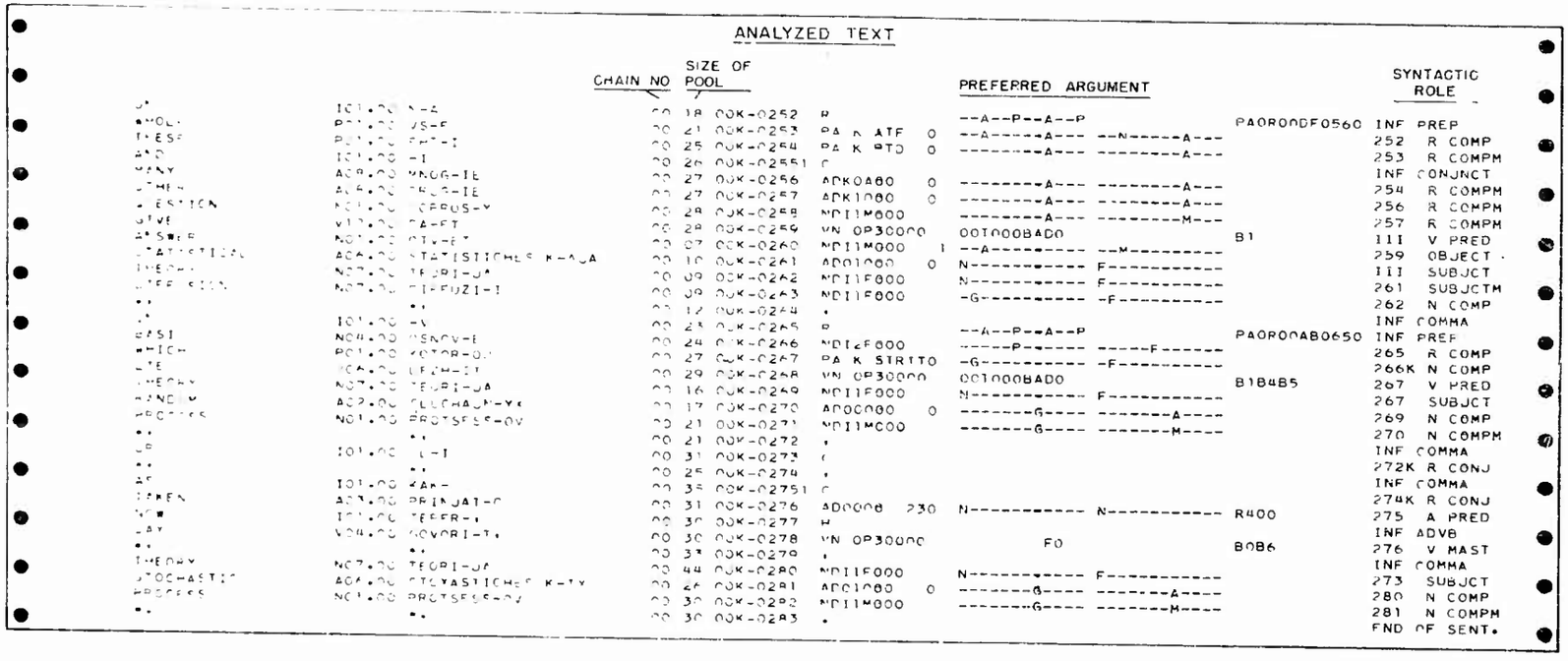


UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
[illegible]	I01.00	N-A	00K-0252	P		--A--P--A--P		PA0R00DF0560	1107P0000000
WHOLE	P01.00	VE-F	00K-0253	PK K ATF	0	N-A---N-A---	N-N---A-A---		0272P5000000
THESE	P01.00	EMT-I	00K-0254	PK K PTD	0	------N-A---	------A-A---		218919583332
AND	I01.00	-I	00K-0255	C					0000P0000000
ALSO	I01.00	-I	00K-0255*	H					0000P5000000
MANY	A0R.00	VNOG-IE	00K-0256	KDK0A00	0	------N-A---	------A-A---		108223333332
OTHER	A0R.00	DRUG-IE	00K-0257	KDK1000	0	------N-A---	------A-A---		0557900000000
QUESTION	N01.00	VOPROS-Y	00K-0258	ND11M000		------N-A---	------M-M---		023170000000
GIVE	V12.00	DA-ET	00K-0259	VN 0000000		--I---BAD-		B1	045030000000
ANSWER	N01.00	OTV-ET	00K-0260	ND11M000	1	N-A----------	M-M----------		130620000000
STATISTICAL	A0A.00	STATISTICHES K-A-A	00K-0261	AD01000	0	N----------	F----------		1920P5000000
THEORY	N07.00	TEORI-JA	00K-0262	ND11F000		N----------	F----------		197130000000
DIFFUSION	N07.00	DIFFUZI-I	00K-0263	ND11F000		-G-C-PN-A---	-F-F-FF-F---		051896666666
*,		*,	00K-0264		*				
[illegible]	I01.00	-V	00K-0265	P		--A--P--A--P		PA0R00AB0650	000020000000
BASIS	N04.00	OSNOV-E	00K-0266	ND12F000		---C-P------	---F-F-------		1293400000000
WHICH	P01.00	KOTOR-OJ	00K-0267	PK K STRTC		-G-CIP------	-F-FFF-------		0950P9795915
LIE	V0A.00	LEZH-IT	00K-0268	VN 0000000		--I---BAD-		B184B5	099210000000
THEORY	N07.00	TEORI-JA	00K-0269	ND11F000		N----------	F----------		197130000000
RANDOM	A02.00	SLUCHAJN-YX	00K-0270	AD00000	0	-------GA--P	-------AA--A		185731145827
PROCESS	N01.00	PROTSESS-OV	00K-0271	ND11M000		-------G----	-------M----		164970000000
*,		*,	00K-0272		*				
OF	I01.00	IL-I	00K-0273	C					078400000000
*,		*,	00K-0274		*				
AS	I01.00	KAK-	00K-0275	H					085242338360
SOME	I01.00	KAK-	00K-0275*	H					085240000000
TAKEN	A0R.00	PRINJAT-O	00K-0276	AD0000	230	N----------	N----------	P300	159489428577
NOW	I01.00	TEPER-,	00K-0277	H					197133750000
SAY	V04.00	GOVORI-T,	00K-0278	VN 0000000		F-		B0B6	042650000000
*,		*,	00K-0279		*				
THEORY	N07.00	TEORI-JA	00K-0280	ND11F000		N----------	F----------		197130000000
STOCHASTIC	A0A.00	STOXASTICHES K-TX	00K-0281	AD01000	0	-------GA--P	-------AA--A		192735000000
PROCESS	N01.00	PROTSESS-OV	00K-0282	ND11M000		-------G----	-------M----		164970000000
*,		*,	00K-0283		*				

An Analyzed Sentence

Figure 110



ANALYZED TEXT

		CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE
.*	IQ1.00 N=A	00	18	00K-0252	R	--A--P--A--P		PA0R00DF0560	INF PREP
*MOL=	P01.00 /S=F	00	21	00K-0253	PA K ATF 0	--A------A---	--N------A---		252 R COMP
THESE	P01.00 PT=I	00	25	00K-0254	PA K PTD 0	--------A---	--------A---		253 R COMPM
AND	IQ1.00 =I	00	26	00K-0255	C				INF CONJNCT
MANY	AQR.00 MNOG=IE	00	27	00K-0256	ADK0A80 0	--------A---	--------A---		254 R COMPM
OTHER	AQ4.00 TEUR=IE	00	27	00K-0257	ADK1080 0	--------A---	--------A---		256 R COMPM
QUESTION	N01.00 KERUS=Y	00	28	00K-0258	MDI1M000	--------A---	--------M---		257 R COMPM
GIVE	V12.00 GA=ET	00	28	00K-0259	VN 0P30000	001000BAD0		B1	111 V PRED
ANSWER	N01.00 NIV=ET	00	27	00K-0260	MDI1M000 1	--A----------	--M----------		259 OBJECT
STATISTICAL	AQA.00 STATISTICHES K=AJA	00	10	00K-0261	AD01000 0	N----------	F----------		111 SUBJCT
THEORY	N01.00 TEORI=JA	00	09	00K-0262	MDI1F000	N----------	F----------		261 SUBJCTM
DIFFICULTY	N01.00 SIFFUZI=I	00	09	00K-0263	MDI1F000	-G----------	-F----------		262 N COMP
.*	.*	00	12	00K-0264	.				INF COMMA
.*	IQ1.00 =N	00	23	00K-0265	R	--A--P--A--P		PA0R00AB0650	INF PREP
BASI	N04.00 BSNOV=E	00	24	00K-0266	MDI1F000	-----P------	-----F------		265 R COMP
WHICH	P01.00 VETOR=OM	00	27	00K-0267	PA K STRITO	-G----------	-F----------		266K N COMP
LIE	N04.00 LEGN=IT	00	29	00K-0268	VN 0P30000	001000BAD0		B1B4B5	267 V PRED
THEORY	N01.00 TEORI=JA	00	16	00K-0269	MDI1F000	N----------	F----------		267 SUBJCT
RANDOM	AQ2.00 GELEGAJN=YE	00	17	00K-0270	AD00000 0	-------G-----	-------A-----		269 N COMP
PROCESS	N01.00 PROTSES=OV	00	21	00K-0271	MDI1M000	-------G-----	-------M-----		270 N COMPM
.*	.*	00	21	00K-0272	.				INF COMMA
OR	IQ1.00 =I	00	31	00K-0273	C				272K R CONJ
.*	.*	00	25	00K-0274	.				INF COMMA
AN	IQ1.00 KAN=	00	38	00K-02751	C				274K R CONJ
OPEN	AQ3.00 PRINJAI=O	00	31	00K-0276	AD0000 230	N----------	N----------	R400	275 A PRED
NOW	IQ1.00 TEFER=.	00	30	00K-0277	H				INF ADVB
LAY	N04.00 KOVORI=T.	00	30	00K-0278	VN 0P30000	F0		B0B6	276 V MAST
.*	.*	00	33	00K-0279	.				INF COMMA
THEORY	N01.00 TEORI=JA	00	44	00K-0280	MDI1F000	N----------	F----------		273 SUBJCT
STOCHASTIC	AQA.00 STOXASTICHES K=IY	00	26	00K-0281	AD01080 0	-------G-----	-------A-----		280 N COMP
PROCESS	N01.00 PROTSES=OV	00	30	00K-0282	MDI1M000	-------G-----	-------M-----		281 N COMPM
.*	.*	00	30	00K-0283	.				END OF SENT.

Figure 110 (continued)

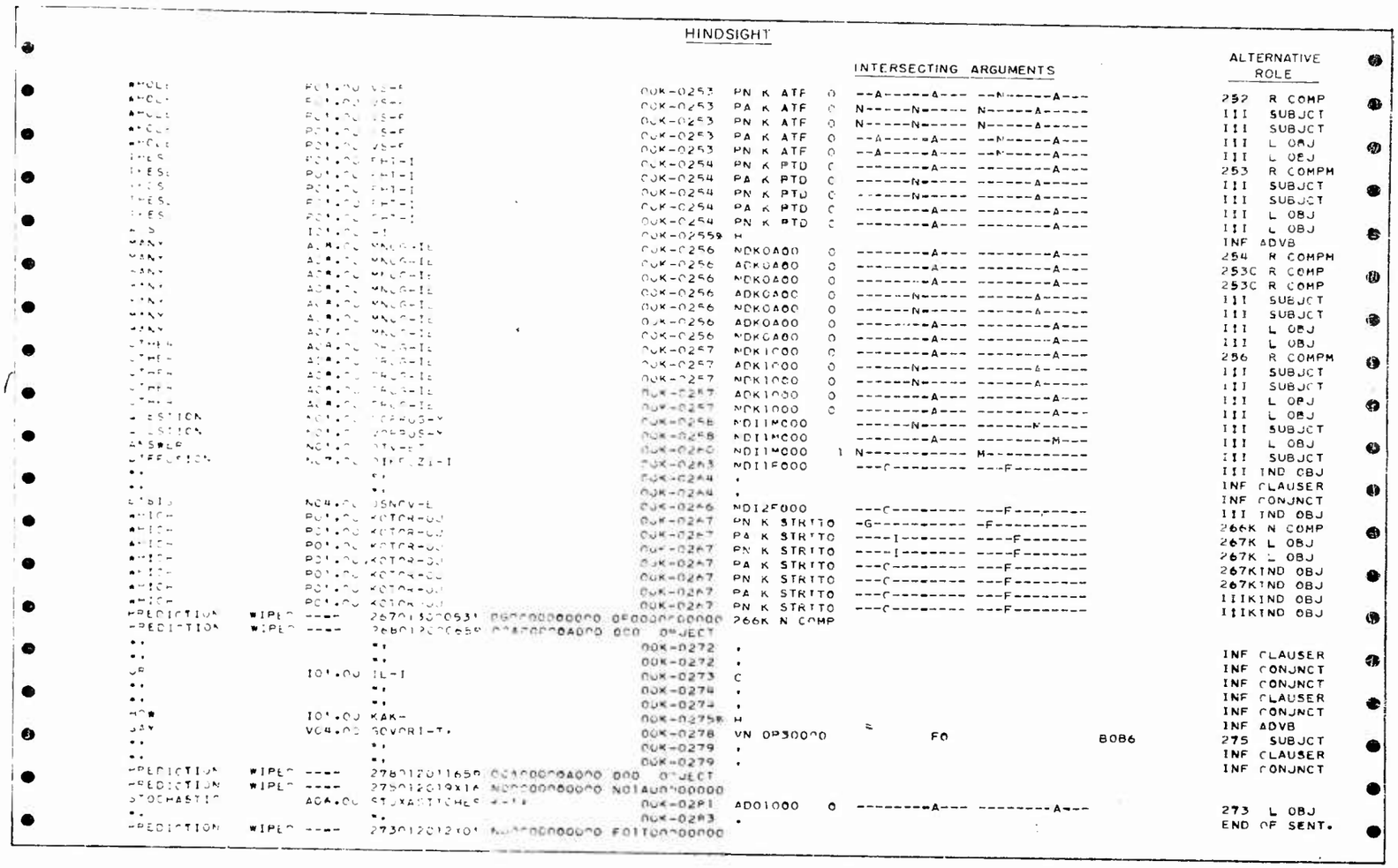
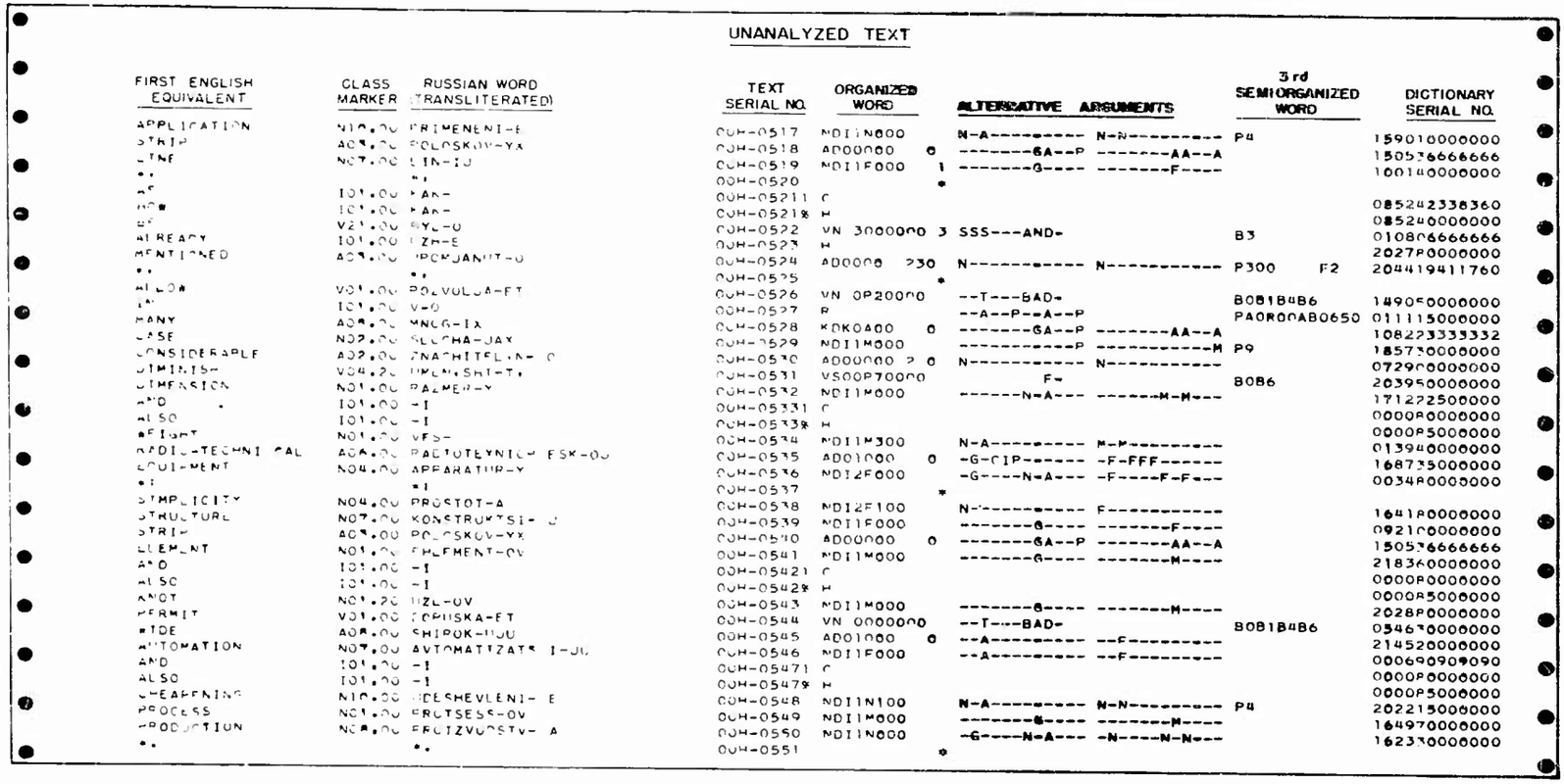


Figure 110 (continued)

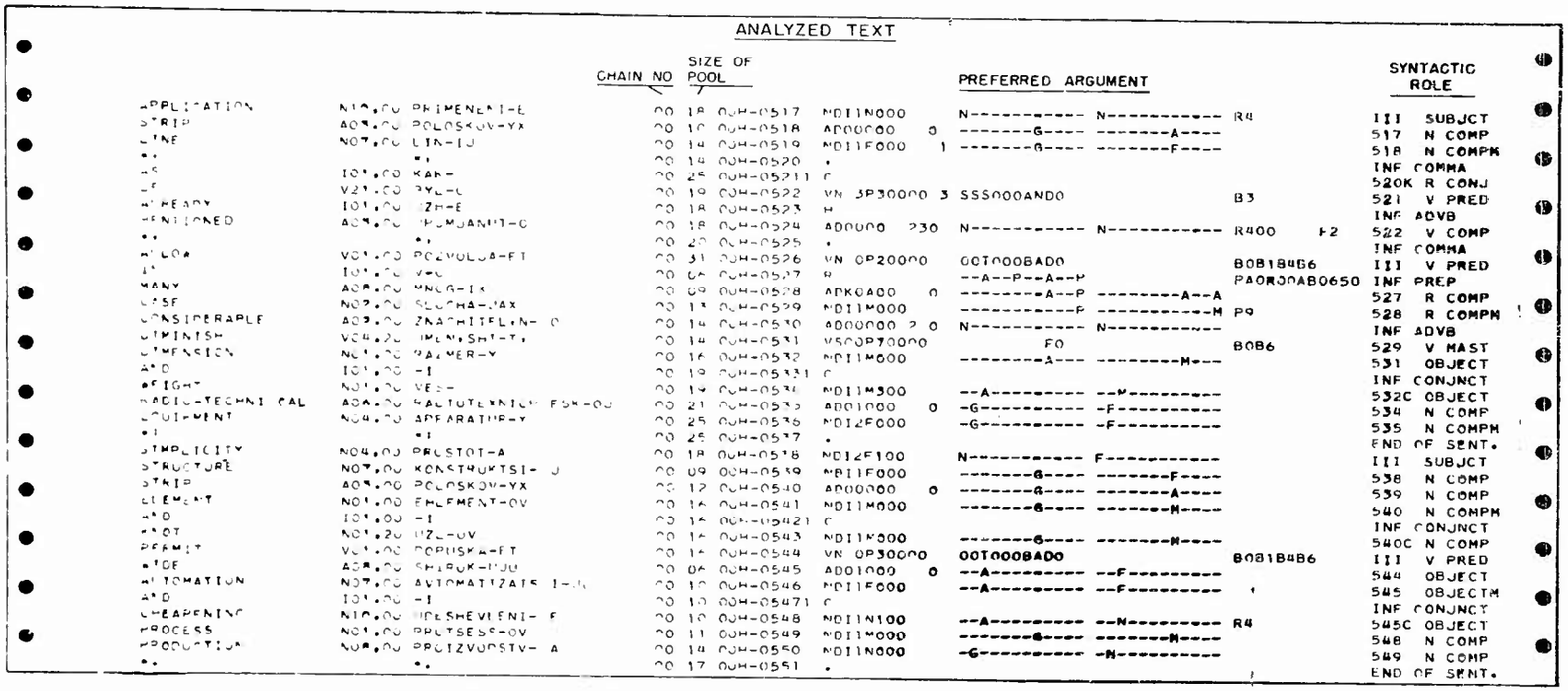


UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD		ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD		DICTIONARY SERIAL NO.
APPLICATION	N10.00	PRIMENENI-E	00H-0517	NDI1N000		N-A----------	N-N----------	P4		159010000000
STRIP	A09.00	POLOSKOV-YX	00H-0518	AD00000	0	-------GA--P	-------AA--A			150536666666
LINE	N07.00	LIN-IJ	00H-0519	NDI1F000	1	-------G----	-------F----			100140000000
**		*I	00H-0520		*					
AT	I01.00	KAK-	00H-05211	C						085242338360
NOW	I01.00	KAK-	00H-0521%	H						085240000000
BE	V21.00	BYL-U	00H-0522	VN 3000000	3	SSS---AND-		B3		010806666666
ALREADY	I01.00	UZH-E	00H-0523	H						202780000000
MENTIONED	A09.00	UPOMJANUT-U	00H-0524	AD0000	230	N----------	N----------	P300	F2	204419411760
**		*I	00H-0525		*					
ALSO	V01.00	POLVOLJA-ET	00H-0526	VN 0P20000		--T---BAD-		B0B1B4B6		149050000000
IN	I01.00	V-O	00H-0527	P		--A--P--A--P		PA0R00AB0650		011115000000
MANY	A08.00	MNOG-IX	00H-0528	KDK0A00	0	-------GA--P	-------AA--A			108223333332
CASE	N02.00	SLUCHA-JAX	00H-0529	NDI1M000		----------P	----------M	P9		185730000000
CONSIDERABLE	A02.00	ZNACHITELXN- O	00H-0530	AD00000	2 0	N----------	N----------			072900000000
DIMINISH-	V04.20	UMEN.SHI-T.	00H-0531	VS00P70000		F-		B0B6		203950000000
DIMENSION	N01.00	RAZMER-Y	00H-0532	NDI1M000		------N-A---	------M-M---			171222500000
AND	I01.00	-I	00H-05331	C						000080000000
ALSO	I01.00	-I	00H-0533%	H						000085000000
WEIGHT	N01.00	VES-	00H-0534	NDI1M300		N-A----------	M-M----------			013940000000
RADIO-TECHNI CAL	A0A.00	RADIOTEYNICH ESK-OO	00H-0535	AD01000	0	-G-CIP------	-F-FFF------			168735000000
EQUIPMENT	N04.00	APPARATUR-Y	00H-0536	NDI2F000		-G----N-A---	-F----F-F---			003480000000
**		*I	00H-0537		*					
SIMPLICITY	N04.00	PROSTOT-A	00H-0538	NDI2F100		N----------	F----------			164180000000
STRUCTURE	N07.00	KONSTRUKTSI- O	00H-0539	NDI1F000		-------G----	-------F----			092100000000
STRIP	A09.00	POLOSKOV-YX	00H-0540	AD00000	0	-------GA--P	-------AA--A			150536666666
ELEMENT	N01.00	EHLEMENT-OV	00H-0541	NDI1M000		-------G----	-------M----			218360000000
AND	I01.00	-I	00H-05421	C						000080000000
ALSO	I01.00	-I	00H-0542%	H						000085000000
NOT	N01.20	NUL-OV	00H-0543	NDI1M000		-------G----	-------M----			202880000000
PERMIT	V01.00	ZOPUSKA-ET	00H-0544	VN 0000000		--T---BAD-		B0B1B4B6		034630000000
WIDE	A08.00	SHIROK-OOU	00H-0545	AD01000	0	--A----------	--F----------			214520000000
AUTOMATION	N07.00	AVTOMATIZATS I-OO	00H-0546	NDI1F000		--A----------	--F----------			000690909090
AND	I01.00	-I	00H-05471	C						000080000000
ALSO	I01.00	-I	00H-0547%	H						000085000000
SHEARING	N10.00	SDESHEVLENI- E	00H-0548	NDI1N100		N-A----------	N-N----------	P4		202215000000
PROCESS	N01.00	PROTSESS-OV	00H-0549	NDI1M000		-------G----	-------M----			164970000000
PRODUCTION	N08.00	PROIZVODSTV- A	00H-0550	NDI1N000		-G----N-A---	-N----N-N---			162330000000
**		*.	00H-0551		*					

An Analyzed Sentence

Figure 111



ANALYZED TEXT

			CHAIN NO	SIZE OF POOL		PREFERRED ARGUMENT			SYNTACTIC ROLE
APPLICATION	N10.00	PRIMENENI-E	00	18 00H-0517	NDIINOOO	N----------	N----------	R4	III SUBJCT
STRIP	A09.00	POLOSKOV-YX	00	10 00H-0518	ADOOOOO 0	-------G----	-------A----		517 N COMP
LINE	N07.00	LIN-IJ	00	14 00H-0519	NDIIFOOO 1	-------G----	-------F----		518 N COMPM
•.		•.	00	14 00H-0520	.				INF COMMA
AS	I01.00	KAK-	00	25 00H-05211	C				520K R CONJ
-F	V21.00	PYL-O	00	19 00H-0522	VN 3P30000 3	SSSOOOANDO		B3	521 V PRED
ALREADY	I01.00	UZH-E	00	18 00H-0523	H				INF ADVB
MENTIONED	A09.00	PRIMUANIT-O	00	18 00H-0524	ADOOOO 230	N----------	N----------	R400 F2	522 V COMP
•.		•.	00	20 00H-0525	.				INF COMMA
ALLOW	V01.00	PRIVOLUA-ET	00	31 00H-0526	VN 0P20000	00T000BADO		B0B18486	III V PRED
IT	I01.00	YEO	00	04 00H-0527	H	--A--P--A--P		PA0R00AB0650	INF PREP
MANY	A08.00	MNOG-IX	00	09 00H-0528	ADKOAOO 0	--------A--P	---------A--A		527 R COMP
CASE	N02.00	SLUCHA-JAX	00	13 00H-0529	NDIIM000	----------P	----------M	P9	528 R COMPM
CONSIDERABLE	A09.00	ZNACHITEL+N- O	00	14 00H-0530	ADOOOOO 2 0	N----------	N----------		INF ADVB
DIMINISH	V04.00	UMEN+SHI-TX	00	14 00H-0531	VSOOP30000	FO		B0B6	529 V MAST
DIMENSION	N01.00	RAZMER-Y	00	16 00H-0532	NDIIM000	--------A---	---------M---		531 OBJECT
AND	I01.00	-I	00	19 00H-05331	C				INF CONJNCT
WEIGHT	N01.00	VES-	00	14 00H-0534	NDIIM300	--A----------	--M----------		532C OBJECT
RADIO-TECHNICAL	A08.00	RALTUTEKNICH FSK-OO	00	21 00H-0535	ADO1000 0	-G----------	-F----------		534 N COMP
EQUIPMENT	N04.00	APPARATUR-Y	00	25 00H-0536	NDI2F000	-G----------	-F----------		535 N COMPM
•I		•I	00	25 00H-0537	.				END OF SENT.
SIMPLICITY	N04.00	PROSTOT-A	00	18 00H-0538	NDI2F100	N----------	F----------		III SUBJCT
STRUCTURE	N07.00	KONSTRUKTSI- O	00	09 00H-0539	NDIIF000	-------G----	-------F----		538 N COMP
STRIP	A09.00	POLOSKOV-YX	00	12 00H-0540	ADOOOOO 0	-------G----	-------A----		539 N COMP
ELEMENT	N01.00	EMLEMENT-OV	00	14 00H-0541	NDIIM000	-------G----	-------M----		540 N COMPM
AND	I01.00	-I	00	14 00H-05421	C				INF CONJNCT
SHOT	N01.20	UZL-OV	00	14 00H-0543	NDIIM000	-------G----	-------M----		540C N COMP
PERMIT	V01.00	POPUSKA-ET	00	14 00H-0544	VN 0P30000	00T000BADO		B0B1B4B6	III V PRED
MODE	A08.00	SHIROK-IJU	00	04 00H-0545	ADO1000 0	--A----------	--F----------		544 OBJECT
AUTOMATION	N07.00	AVTOMATIZATS I-N	00	10 00H-0546	NDIIF000	--A----------	--F----------		545 OBJECTM
AND	I01.00	-I	00	10 00H-05471	C				INF CONJNCT
CHEAPENING	N10.00	UDESHEVLENI- E	00	10 00H-0548	NDIIN100	--A----------	--N----------	R4	545C OBJECT
PROCESS	N01.00	PROTSESS-OV	00	11 00H-0549	NDIIM000	-------G----	-------M----		548 N COMP
PRODUCTION	N08.00	PROIZVODSTV- A	00	14 00H-0550	NDIIN000	-G----------	-N----------		549 N COMP
•.		•.	00	17 00H-0551	.				END OF SENT.

Figure 111 (continued)

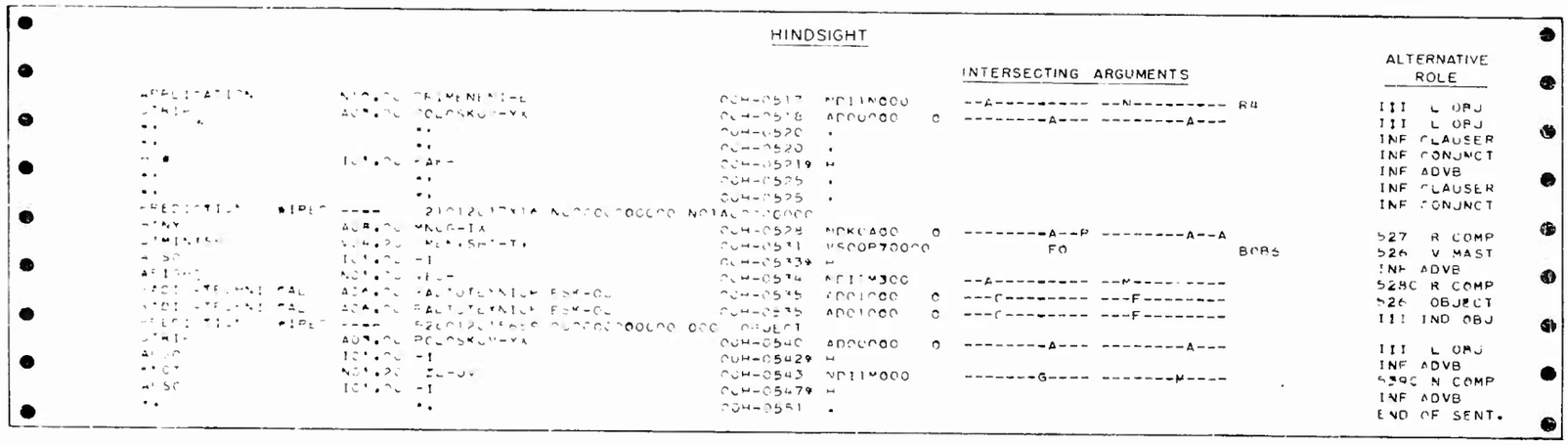
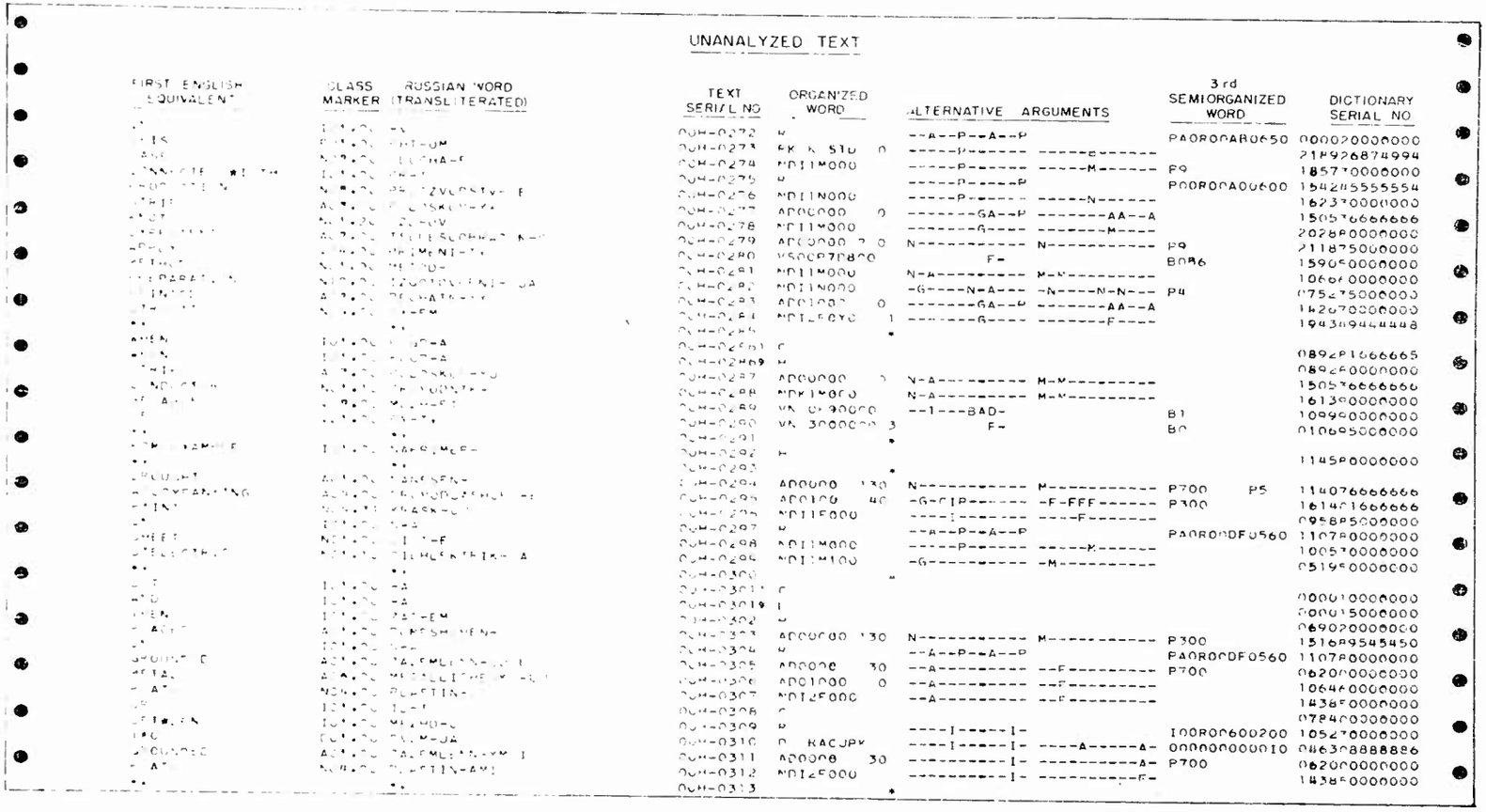


Figure 111 (continued)



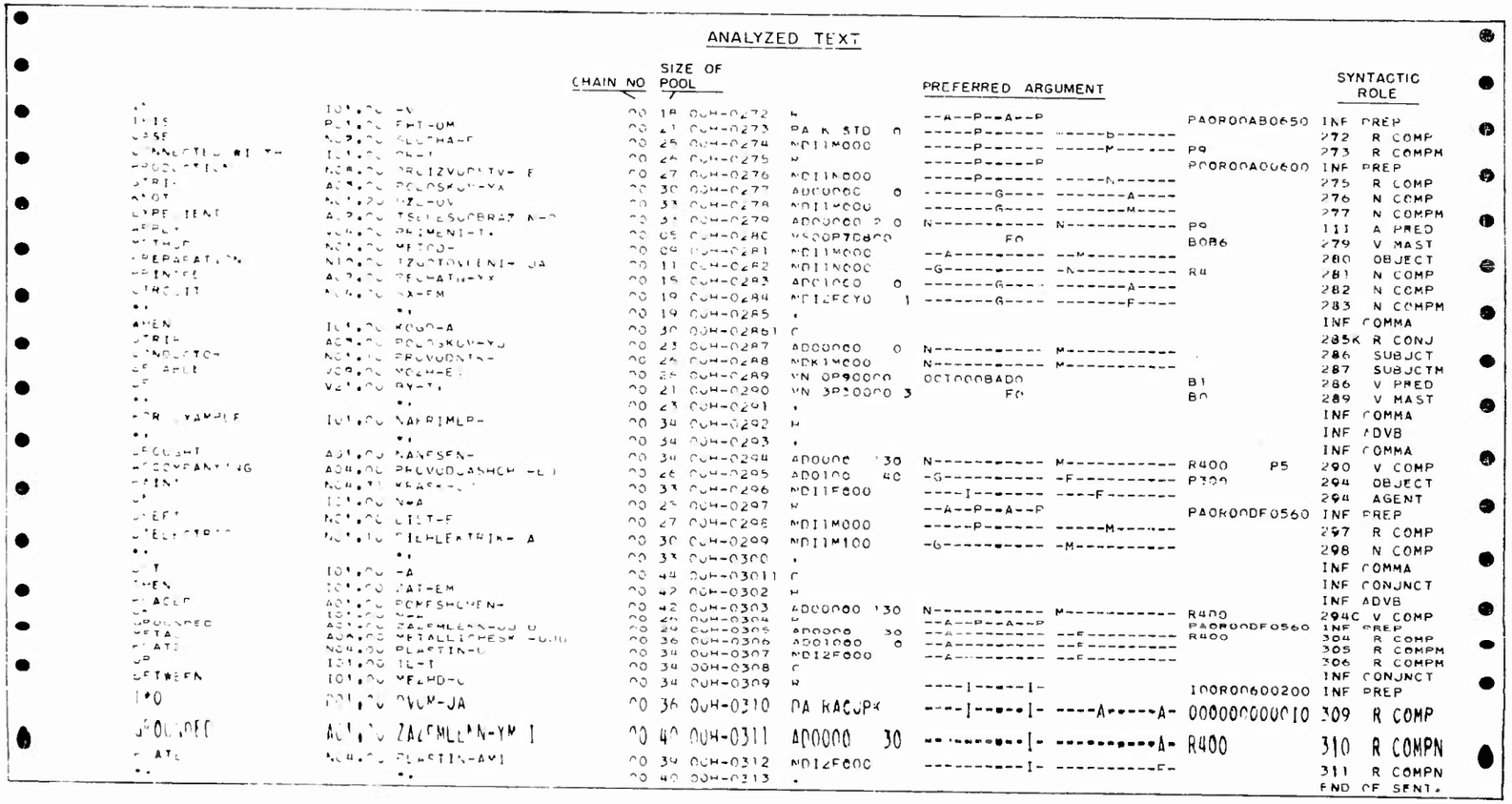
UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)
*	I * * *	-PA
-IES	P * * *	-OST-OM
-AND	N * * *	-LOSHA-E
-CONNECTED WITH	I * * *	-MET
-OBJECTION	N * * *	-PRIZVOLSTVI-E
-THEIR	A * * *	-EGO-SKOMU-YA
-NOT	N * * *	-ZLOV
-FREE-TIME	A * * *	-TELESOOBRAZ-NO
-SPEECH	N * * *	-PRIMENITX
-RETURN	N * * *	-METOD-
-PREPARATION	N * * *	-IZVOSTOVENI-JA
-LINING	A * * *	-PECHATAEMY
-THEY	N * * *	-LYUDI
*	* *	*
-WHEN	I * * *	-POKA
-WITH	I * * *	-VMESTE-A
-THIS	A * * *	-PEREDNEGO
-INDUCTION	N * * *	-PROVODNIK
-OF ALL	A * * *	-VSEGDA
-F	N * * *	-PAUTY
*	* *	*
-FOR EXAMPLE	I * * *	-NAPRIMER-
*	* *	*
-BROUGHT	A * * *	-PRINESEN-
-ELECTROPLATING	A * * *	-GALVANOSTEGICHESK-
-PRINT	N * * *	-KRASKA-T
-*	I * * *	-NA
-SHEET	N * * *	-LIST-E
-ELECTRIC	A * * *	-ELEKTRICHESK- A
*	* *	*
-F	I * * *	-A
-AND	I * * *	-A
-THEN	I * * *	-ZATEM
-ACID	A * * *	-KISLOTNY-
-*	I * * *	-NA
-GROUND-E	A * * *	-ZAZEMLENNY-I
-METAL	A * * *	-METALLICHESKY-I
-PLATE	N * * *	-PLASTINA
-IS	I * * *	-EST
-BETWEEN	I * * *	-MEZHDU
-TWO	F * * *	-DVUMYA
-GROUNDED	A * * *	-ZAZEMLENNYM I
-PLATE	N * * *	-PLASTINAMI
*	* *	*

TEXT SERIAL NO	ORGANIZED WORD	ALTERNATIVE ARGUMENTS		3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO
00H-0272	W	--A--P--A--P		PA0R00AR0650	0000200000000
00H-0273	PK K 51U 0	-----P------	-----E------		21P926874994
00H-0274	MP11M000	-----P------	-----M------	P9	1857?0000000
00H-0275	W	-----P-----P		P00R00A00600	1542?5555554
00H-0276	MP11N000	-----P------	-----N------		1623?0000000
00H-0277	AP00000 0	-------GA--P	-------AA--A		1505?6666666
00H-0278	MP11M000	-------G-----	-------M-----		2028?0000000
00H-0279	AP00000 2 0	N----------	N----------	P9	2118?5000000
00H-0280	WS00?7P800	F-		B086	1590?0000000
00H-0281	MP11M000	N-A---------	M-M---------		1066?0000000
00H-0282	MP11N000	-G----N-A---	-N----M-N---	P4	0752?5000000
00H-0283	AP01000 0	-------GA--P	-------AA--A		1426?0000000
00H-0284	MP1?50Y0 1	-------G-----	-------F-----		1943?9444448
00H-0285	*				
00H-0286	C				0892?1666665
00H-0287	H				0892?0000000
00H-0288	AP00000 3	N-A---------	M-M---------		1505?6666666
00H-0289	MPK1M0?0	N-A---------	M-M---------		1613?0000000
00H-0290	VA 0?900?00	--1---BAD-		B1	1099?0000000
00H-0291	VA 3000?00 3	F-		B0	0106?5000000
00H-0292	*				
00H-0293	H				1145?0000000
00H-0294	AP00000 130	N----------	M----------	P700 P5	1140?6666666
00H-0295	AP00100 40	-G-?1P------	-F-FFF------	P300	1614?1666666
00H-0296	MP11F000	----I-------	----F-------		0958?5000000
00H-0297	W	--A--P--A--P		PA0R00DF0560	1107?0000000
00H-0298	MP11M000	-----P------	-----M------		1005?0000000
00H-0299	MP11M100	-G----------	-M----------		0519?0000000
00H-0300	*				
00H-0301	C				0000?0000000
00H-0302	I				0000?5000000
00H-0303	W				0690?0000000
00H-0304	AP00000 130	N----------	M----------	P300	1516?9545450
00H-0305	AP00000 30	--A--P--A--P		PA0R00DF0560	1107?0000000
00H-0306	AP01000 0	--A---------	--F---------	P700	0620?0000000
00H-0307	MP12F000	--A---------	--F---------		1064?0000000
00H-0308	C				1438?0000000
00H-0309	P	----I-----I-			0784?0000000
00H-0310	D RACJPY	----I-----I-	----A-----A-	I00R00600200	1052?0000000
00H-0311	AP00000 30	----------I-	----------A-	0000000000?0	0463?8888886
00H-0312	MP12F000	----------I-	----------F-	P700	0620?0000000
00H-0313	*				1438?0000000

An Analyzed Sentence

Figure 112



ANALYZED TEXT

		CHAIN NO	SIZE OF POOL		PREFERRED ARGUMENT			SYNTACTIC ROLE	
.	IN1.00 -N	00	18	00H-0272	H			INF	PREP
THIS	PS1.00 FHT-UM	00	21	00H-0273	PA K STD 0	--A--P--A--P	PA0R00AB0650	272	R COMP
CASE	NS2.00 SLUCHA-F	00	25	00H-0274	MD11M000	-----P------ -----b------		273	R COMPM
CONNECTED WITH	IN1.00 OB-T	00	26	00H-0275	H	-----P------ -----M------	P9	INF	PREP
PROCEDURE	NS1.00 PROTZVODSTV- F	00	27	00H-0276	MD11N000	-----P------ -----N------	P0R00A00600	275	R COMP
STRIP	AS2.00 POLOSKOV-YX	00	30	00H-0277	AD00000 0	-------G----- --------A-----		276	N COMP
NOT	NA1.20 NE-OV	00	33	00H-0278	MD11M000	-------G----- --------M-----		277	N COMPM
TYPE TEXT	AS2.00 TSELESOOBRAZ N-O	00	34	00H-0279	AD00000 2 0	N---------- N----------	P9	111	A PRED
APPLY	VA4.00 PRIMENI-T-	00	05	00H-0280	VS00PT0800	F0	B0B6	279	V MAST
METHOD	NS1.00 METOD-	00	09	00H-0281	MD11M000	--A---------- --M----------		280	OBJECT
PREPARATION	NI0.00 IZGOTOVLENI- JA	00	11	00H-0282	MD11N000	-G---------- -N----------	R4	281	N COMP
PRINTER	AS2.00 PECHATN-YX	00	15	00H-0283	AD01000 0	-------G----- --------A-----		282	N COMP
CIRCUIT	NA4.00 SX-EM	00	19	00H-0284	MD12E0Y0 1	-------G----- --------F-----		283	N COMPM
.	.	00	19	00H-0285	.			INF	COMMA
AMEN	IN1.00 KOGO-A	00	30	00H-02851	C			285K	R CONJ
STRIP	AS1.00 POLOSKOV-YO	00	23	00H-0287	AD00000 0	N---------- M----------		286	SUBJCT
INDUCTOR	NS1.10 PROVODNIK-	00	24	00H-0288	MDK1M000	N---------- M----------		287	SUBJCTM
OF APPLE	VS8.00 MOCHI-T	00	25	00H-0289	VN 0P90000	0CT000BAD0	B1	286	V PRED
OF	VS1.00 BY-T-	00	21	00H-0290	VN 3P30000 3	F0	B0	289	V MAST
.	.	00	23	00H-0291	.			INF	COMMA
FOR EXAMPLE	IN1.00 NAPRIMER-	00	34	00H-0292	H			INF	ADVB
.	.	00	34	00H-0293	.			INF	COMMA
BECAUSE	AS1.00 NAMNOGO-	00	34	00H-0294	AD0000 30	N---------- M----------	R400 P5	290	V COMP
ACCOMPANYING	AS4.00 PRIVODJASHCH-EE	00	26	00H-0295	AD0100 40	-G---------- -F----------	P300	294	OBJECT
CHIP	NS4.20 MIKRO--	00	33	00H-0296	MD11F000	----I------- ----F-------		294	AGENT
.	IS1.00 NO-A	00	25	00H-0297	H	--A--P--A--P	PA0R00DF0560	INF	PREP
THEFT	NS1.00 KRAZH-F	00	27	00H-0298	MD11M000	-----P------ -----M------		297	R COMP
ELECTRIC	NS1.10 ELEKTRI-ES- A	00	30	00H-0299	MD11M100	-G---------- -M----------		298	N COMP
.	.	00	33	00H-0300	.			INF	COMMA
OUT	IN1.00 -A	00	44	00H-03011	C			INF	CONJNCT
THEN	IS1.00 ZAT-EM	00	42	00H-0302	H			INF	ADVB
PLACED	AS1.00 POMESHCHEN-	00	42	00H-0303	AD00000 30	N---------- M----------	R400	294C	V COMP
OF	IS1.00 NA-	00	29	00H-0304	P	--A--P--A--P	PA0R00DF0560	INF	PREP
SPOILERS	AS1.00 ZALEMLEN-OU O	00	29	00H-0305	AD0000 30	--A---------- --E----------	R400	304	R COMP
META	AS4.00 METALLICHESK -OGO	00	36	00H-0306	AD01000 0	--A---------- --E----------		305	R COMPM
PLATE	NS4.00 PLASTIN-U	00	34	00H-0307	MD12E000	--A---------- --E----------		306	R COMPM
OR	IS1.00 IL-I	00	34	00H-0308	C			INF	CONJNCT
BETWEEN	IS1.00 MEZHD-U	00	34	00H-0309	H	----I-----I-	100R00600200	INF	PREP
TWO	DS1.00 DVUM-JA	00	36	00H-0310	DA KACUPK	----I-----I- ----A-----A-	0000000000I0	309	R COMP
SPOILERS	AS1.00 ZALOMLEN-YM I	00	40	00H-0311	AD0000 30	----------I- ----------A-	R400	310	R COMPN
PLATE	NS4.00 PLASTIN-AMI	00	39	00H-0312	MD12E000	----------I- ----------E-		311	R COMPN
.	.	00	40	00H-0313	.			END	OF SENT.

Figure 112 (continued)

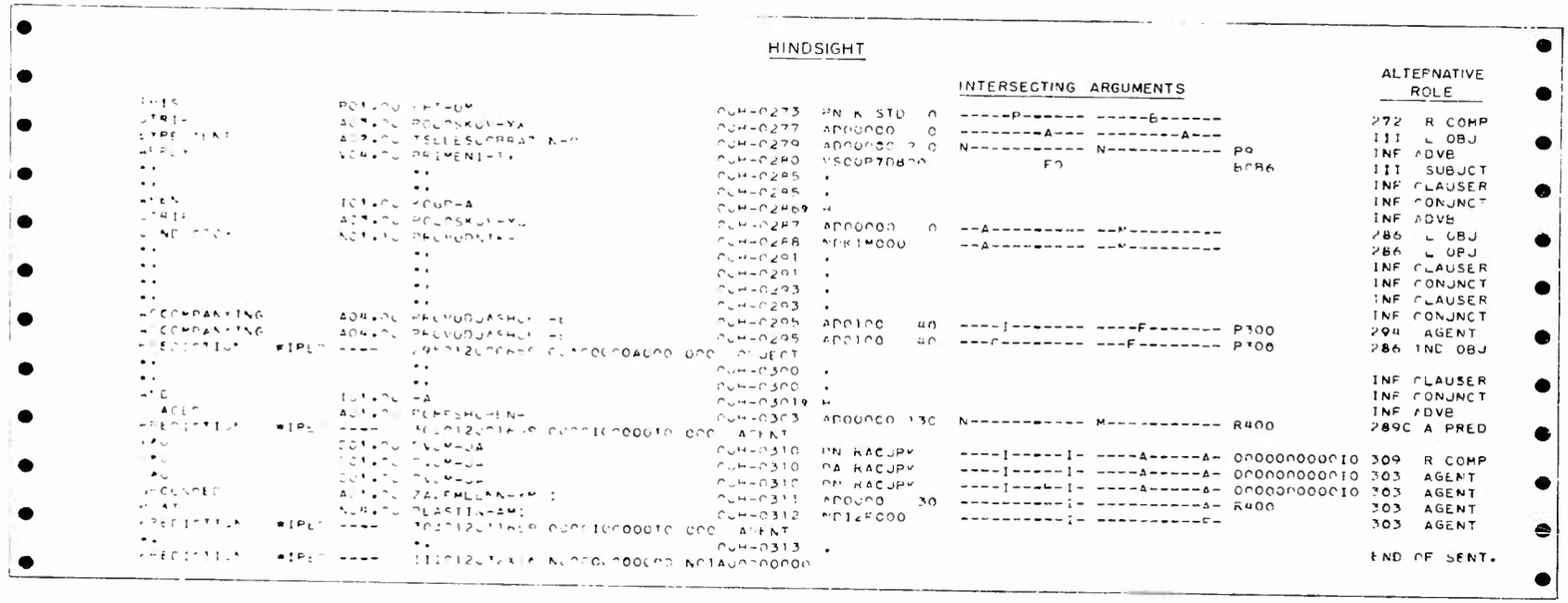


Figure 112 (continued)

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AF Cambridge Research Laboratories, Bedford, Mass. Electronics Research Directorate
COMPREHENSIVE REPORT ON PREDICTIVE SYNTACTIC ANALYSIS, by Murray E. Sherry, September 1961. 243 pp incl. illus. AFCRL 713
Unclassified report

Predictive syntactic analysis is a scheme for the automatic syntactic analysis of natural language that is based on a continuous left-to-right scan of a sentence. This report supersedes previous reports on the experimental predictive syntactic analysis program for Russian. All the grammatical rules followed by the experimental program are here included. This paper is intended to serve at this time both as a report of past accomplishments and as a working paper on which to base future research.

1. Machine translation
2. Natural language model
3. Data processing systems
I. Sherry, Murray E.

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