DISCOURSE OF LANGUAGE LEARNING

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THEORETICAL CONSIDERATIONS

For some years language teachers have worried about their students' not being able to communicate in the target language outside the classroom in spite of their being reasonably good students inside. Although certain attempts have been made to incorporate communicative practice, such as "conversation", in language courses, success has seldom been achieved. Parallel to these attempts, research (both theoretical and experimental) relevant to the question has been carried out in applied linguistics in general, and in teaching methodology in particular.

In 1970 and 1971, Christina Bratt Paulston introduced the categorization of mechanical, meaningful, and communicative exercises. Mechanical exercises are those that, if successful, would lead the student to the acquisition only of a syntactical skill in the target language. An example is the conversion of certain isolated sentences into the interrogative or negative forms. Meaningful drills are those in which considerations of the correctness of sentences include their truth value in relation to a certain "situation". An example of these is the production from a substitution table of sentences that correspond accurately to a drawing. Communicative exercises are those which require that a student provide new information to the rest of the class or group he is practicing with. These are, therefore, unpredictable and include such things as "What's your brother's name?" and "What did you do over the week-end?"

Marylin Smith in a personal communication, has suggested that students have communicative capacities when they are able to express their intimate feelings and that practice in this direction is required in the classroom. One of the exercises she has proposed is this: a blindfolded student is presented with a jar containing a substance which has a distinctive odour, garlic, for example. The student has to identify the substance. Then, he has to say whether he likes the smell or not. He is asked what event or circumstance the smell reminds him of. Finally, he has to say whether it is because of this association that he likes or dislikes the presence of the substance, and if not, why. Further, Wilga Rivers has said that students should be able to communicate what they want to, including what arises in their imagination. She considers

things like crocodiles with vests and watches, this particularly in reference to Ionesco's French course. (Rivers, 1972)

At a theoretical level, the distinction between communicative competence and linguistic, that is, Chomsky's competence, has been made. According to Chomsky, competence is the knowledge that ena- bles an ideal speaker/hearer to judge the grammaticality of sentences in a given language. Competence is supposed to account for the crea- tivity of languages, i. e. the ability to understand and generate syn- tactically correct sentences. Chomsky, then, distinguishes between performance, the actual production of sentences, and competence, the underlying knowledge that generates them. Chomsky has been criticized for making this distinction. As a discussion of this point would divert us from our purpose, we will not consider it, and instead will look at some attacks his very definition of competence has undergone.

George Lakoff (1971) has argued that judgement of the well-for- medness of grammaticality of a sentence cannot be made in a pure, absolute way, but only in a relative one with respect to certain pre- suppositions about the nature of the world. In the sentence "My cat, who enjoys playing tricks on me, ate the meat", for example, the choice of who might be judged ungrammatical by a number of persons and grammatical by others, depending on whether they believe cats have "human" attributes or not. According to Lakoff, linguistic know- ledge is that of the general principles by which a speaker pairs a sen- tence with those presuppositions required for it to be well-formed. That is, if the choice of who is to be considered grammatical and the resulting sentence well-formed, it must be paired with the presupposi- tion that cats are human. The presuppositions themselves would then be beyond the limits of linguistics, but judgements of grammaticality would have to consider this knowledge.

Dell Hymes (1971) has pointed out that knowledge of language is not equal to knowledge of grammar and that, besides this, knowledge of rules of use is needed. There would be no point in going on generating random but "grammatical" sentences, and a person who knew how to produce them but who did not know when and how to use them would probably be considered a lunatic. Hymes has, thus, proposed the con- cept, communicative competence, which would include Chomsky's linguistic competence and a knowledge of the appropriateness and feasibility of utterances. Appropriateness refers to the relationships of a language item to the contextual features of a given situation. Since any judgement of language is made in some defining context, it may always involve a factor of appropriateness. Feasibility concerns psycholinguistic factors, such as memory limitation and perceptual devices.

Expanding the concept, John Munby (personal communication, 1975) considers that besides psycholinguistic knowledge (feasibility) and sociolinguistic knowledge (appropriacy), communicative competence includes socio-philosophical and socio-semantic knowledge, which can be seen by refering back to the above exposition of Lakoff's arguments. Consider also that a physicist talking about time may be considering the relativistic view of it, that is, roughly, that it can stretch or contract, depending on velocity. On the other hand, a layman will understand time in terms of constant units. Adding a "logico-linguistic" area would contribute to a better picture of communicative competence, given that communication often involves argumentation.

Others have pointed out (e. g. Widdowson, 1973) that "a knowledge of how the language functions in communication does not automatically follow from a knowledge of sentences." A knowledge of how sentences are used when connected is necessary. On these lines, Widdowson has made a useful distinction between what he calls text and discourse. Text is, roughly, sentences in combination, rather than a mere collection of them, and "Textual Competence" let us say, would include the know- ledge of such cohesive devices a anaphora, cataphora and ellipsis. Discourse, on the other hand, focuses on the use of sentences to perform communicative acts. Now a piece of language can be coherent as discourse without being cohesive as text. As Labov says, "sequencing rules do not operate between utterances but between the actions performed by these utterances". (Labov, 1970)

For example, consider the following exchanges between teacher and student:

First:

T: Take out a piece of paper.

S: Yes, sir.

Now, contrast the first exchange with the following:

T: Take out a piece of paper.

S: My briefcase is locked.

In the first example the student answers in an elliptical form, that is, he ellipts "I will take out a piece of paper". Nevertheless, these sentences are cohesive as text and, due to this, coherent as discourse. In the second example, there is no textual cohesion, but the discourse is coherent. This coherence has been explained by Labov, who has pointed out that the follow- ing have to obtain for an utterance to be considered as an order:

First, A, the commander, has to believe that these <u>preconditions</u> exist:

1. It is desirable that (X) be done.

2. A is in a position to <u>demand</u> from B that X be done.

3. B has the <u>obligation</u> to do X

4. B is <u>able</u> to do X.

Second, B has to believe that A believes in the above set of preconditions. Now, by explicity pointing to one of these preconditions the other three would implicity obtain. For example, by using the command form, the teacher focuses on the second precondition: A is in a position to demand from B that X be done. The student answers by focusing on the fourth precondition, that is: B is able to do X. Notice that this act, i.e. the act of ordering, could be performed in different ways. The teacher could make a statement: "I want you to take out a piece of paper" or ask the question: "Could you take out a piece of paper?".

Although the teacher's order can be realized by different utterances, the second exchange will always be characterized by the following conditions:

A believes in the above listed set of preconditions.

B believes that A believes in this set, but informs A that his belief precondition 4) is wrong, i.e. the student is not able to take out a piece of paper because his briefcase is locked.

It is also important to notice that one form can be used to realize different communicative functions.

T: Could you put out your cigarrette?

S: Yes, I could.

In this case the student pretends not to view the act as a command, but as a request for information concerning his ability. That is, he does not accept that precondition # 4 obtains as a precondition, but rather has to be asserted. By the same token, he has discarded the first three pre-conditions also. In this case the following general pattern holds:

A believes in the above listed set of preconditions.

B does not believe or pretends not to believe that A believes in these preconditions, therefore causing the discourse to take a strange and unexpected direction.

From the discussion above, two aspects of discourse are distinguished. (See e. g. C. Criper and H. B. Widdowson, 1975) One is concerned with the conditions whereby a certain linguistic form (present tense, interrogative)performs a certain communicative function (ordering or requesting). The other is concerned with how particular communicative acts are linked to develop larger units of communication. These two aspects are, of course, interconnected. Thus, the need to consider language units larger than the sentence is established, and communicative competence is associated with the ability to perform communicative acts or functions with language. This allows for a more precise treatment of the student's development of communicative competence in terms of language.

Some of these insights have influenced the area of methodology. For example, Christina Bratt Paulston has pointed out that fluency in the language doesn't guarantee efficient communication, has shown the need to incorporate exercises that lead to the acquisition of communicative competence, and has presented some of these exercises. She suggests a model for language teaching in which she distinguishes between communicative competence and communicative performance. She uses communicative performance to designate communication which causes distinctive social significance in the target language.

This is similar to the distinction made by Phillips and Shettlesworth (1975) between Learning Situation Discourse (LSD) and Target Discourse (TD). They have shown that the difference corresponds to be one existing between target materials, such as workshop manuals and books, and teaching materials. According to Phillips and Shettlesworth, language courses implicity assume a transfer from LSD to TD, but this transfer is "impeded by the existence of the materials themselves". First, these tend to structure the lesson in such a way that the teacher sees them as the only method of providing the criteria for appropiate language. For example, a student's response may be followed by "yes, but that's not the answer 1 was looking for, anyone else?" or something similar. Secondly, appropriacy of language is filtered through at least one level of artifice, the classroom, or even two levels, including the story or the situation presented in the material.

The difference between LSD and TD is not solely due to the materials, but often derives from the roles of the teacher and the students. For example, if someone tells a friend, "There's a cigarrete on the floor", it may be interpreted as providing information or as a request to pick up the cigarrette, depending on the situation. On the other hand, as the teacher is always or nearly always in a position of authority and can demand that students do something (precondition 2, ordering), this utterance is very likely to be interpreted as an order. It is clear that the range of communicative functions the student will be exposed to and

will be able to practice is narrower than in situations outside the classroom.

Sinclair and Coulthard (1975) have recorded a good example of this in Towards an Analysis of Discourse. They report a situation in which the teacher asks a student the following:

T: What kind of a person do you think he is?

      Do you - what are you laughing at?

P: Nothing.

The pupil interpreted the teacher's interrogation as a directive to stop laughing, but that was not the teacher's intention. The teacher manages to clarify the situation by saying: " T: You're laughing at nothing, nothing at all. " The student this time realizes that the utterance is a request for information and provides that information. Of course, we can't expect that this will always be the case.

Richard Allwright discusses the role of the teacher in the language classroom from another perspective. He says that, very probably, the lack of transfer from LSD to TD - in Phillips & Shettlesworth's terminology - partly results from the dependence on the teacher, which develops in the students. This is due to the teacher's constant solving of the students' problems.

The interference in the learning process which occurs in classroom second language learning has been discussed from other perspectives. For example, Castaños-Long (1976) have reviewed differences between L_1 & L_2 learners and learning processes. They have suggested that as L_1 learning is uniformly successful and L_2 generally is not, we could benefit from making second language learning more like the first by doing less formal structuring.

Allwright, after showing that treatment of learner error is one of the variables which appears to be crucial, has shown that this, and feedback in general, is usually done in an inconsistent, nearly chaotic way: " The learners cannot be sure that any repetition of what they have said necessarily indicates error, nor that the absence of repetition indicates correctness" . (Allwright, 1975, b)

Burt and Dulay also show problems existing in error correction. (M. Burt and H. Dulay 1975) They have focused on the types of errors which cause the reader or listener to misunderstand the message intended by the EFL learner. They take this approach because in real communication situations, sometimes despite errors in learner's speech, the native listener can understand the message easily, while sometimes even

a single error can cause misunderstanding or no comprehension of an utterance at all. For example, the three errors in "I trying for drive more slow" do not affect a listener's comprehension. On the other hand, "Does your mother worry you when you drink?" (asked at a party) may be received as a probing psychological question or merely as a considerate inquiry.

Given the distinction between errors which can cause misunderstanding and those which do not, Burt and Dulay have defined two types of errors. Global errors are those which affect overall sentence organization, thereby significantly hindering communication. Local errors which affect single elements in a sentence do not hinder communication significantly. Some local errors are errors in noun and verb inflections, articles, auxiliaries and the formation of quantifiers. The most systematic global errors include (1) Wrong word order, (2) Missing, wrong or misplaced sentence connectors, eg. "He will be rich until he marry" instead of "He will be rich when he marries", (3) Missing cues to signal obligatory exceptions to pervasive syntactical rules, e.g. "The students'proposal looked into the principal, instead of " The students' proposal was looked into by the principal", and finally, (4) Overgeneralizing pervasive syntactic rules to exceptions e.g. "We amused that movie very much" instead of " That movie amused us very much". The authors suggest that given the distinction between global and local errors and their relation to effective communication, selective error correction of global errors promises to be more effective than total correction.

To promote the acquisition of target discourse communicative competence several suggestions have been made. Christina Bratt Paulston has proposed that one should "incorporate a systematic contrast of situation constraints on grammatical patterns. " To do this she would present, for example, two dialogues, one between Nancy and Bill, two peers, and another between Bill and Miss Cassidy, a good friend of his parents. She has also proposed communicative interaction activities such as community oriented tasks, problem-solving activities, and role playing (Paulston, 1976).

H. G. Widdowson has suggested ways of adapting Current English Language Teaching so as to incorporate the systematic teaching of communicative value; that is, he proposes that in the process of limitation , grading, and presentation, we should think not only in terms of linguistic structures and situational settings, but also in terms of communicative acts. For example, to produce a course for science students, instead of selecting the language to be taught by reference to the frequency of linguistic forms like the universal present tense and the passive in scientific discourse, we might make a selection of those communicative acts which the scientist must,of necessity, most commonly perform: definition, classification, generalization, deduction, etc. When grading

we might consider ordering such acts according to the manner in which they normally combine to form larger communication units.

Phillips and Shettlesworth have suggested giving the teacher, on the one hand, a tool kit or file consisting of examples of the target situation materials and, on the other hand, an inventory of linguistic systems. The materials would be incomplete and it would be up to the teacher to integrate or "marry" the two. Although Phillips and Shettlesworth don't specify how this mar - riage is to be achieved, they do place the responsibility for ex- ploiting the discourse provoked by the target materials on the teacher, rather than on the pedagogic materials. They state "The teacher is, we hope, more flexible than even the best of materials, and consequently the discourse could develop in a reasonably natural fashion: there should be more opportunity for student initiation and realistic information-seeking questions." Such questions would occur when the teacher doesn't know all the answers, and when someone besides the teacher knows the an- swer. In addition, they suggest that the teacher would step in to plug the gaps in the student's knowledge which are revealed in their desire to communicate about the target material.

Another advantage of providing students with target situation materials is that they will be exposed to real language as it occurs in discourse, not as isolated sentences, words or phrases. Allwright has argued for communicative activities rather than linguistic exercises having a central role in the teaching-learning process. He has proposed the following model:
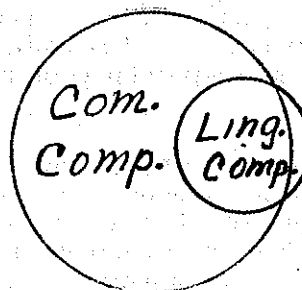
If the model is right, and we think it is (see Hymes, 1971), then "teaching for linguistic competence will leave large areas of com- municative competence untouched, whereas teaching for commu- nicative competence will necessarily account for all but a small part of linguistic competence."

METHODOLOGY: THE ESSEX REMEDIAL EFL COURSE

A course was given at the University of Essex in Britain in 1974 based on these theories. Other considerations affected the design of the course. Because it was a remedial course, mere review of what students had already studied, and had proved ineffective to them, would have bored them. In addition, as the students were more or less proficient in different areas, there were no rational criteria for selection of discrete language items to be taught. Finally, these students needed orientation to their new environment.

Basically, the course provided reasons for communicating. It included activities such as (1) problem-solving activities relating to their community life based on discussions of information documents, (2) a project approach, consisting of locating information and sources of information about their courses, (3) focus on key passages of important documents by means of cloze exercises in which the deletion of words was random, (4) rephrasing important documents in a way that would render it comprehensible to the others, (5) involvement in what can be called communication games. With regard to (3) & (4), the documents included reports on the political life of the University and the regulations that had to be observed. No correct answers were provided by the teacher, but the students had to agree on them, which provided for meaningful discussions about the content and the language. In general, points (1) through (4) focused on problems that all students, and not only foreigners, encounter during their stay at Essex. It is important to notice that although special attention is paid to language in the cloze and rephrasing activities, they have the value of focusing on the problems in the content. "Orientation was the 'product', attention to language was an essential part of the process" (Allwright, 1975a).

The communication games were designed to develop the student's communication skills. One of these consisted of two identical sets of objects which were given to two students separated by a screen, so that they couldn't see each other's set. A third student had to place the objects to form a pattern. Then the first had to give instructions to the second student, so that he duplicated the pattern. In another game, the class was divided into various groups of four students each. Each group was given a child's plastic construction kit and visual instructions to build a vehicle with it. To interpret the instructions and perform their task, the group needed effective communication. At a second stage, they had to write the instructions so that another group could replicate their model. This

second group had the right to reject the written instructions if they were uninterpretable. This allowed for discussion on and careful selection of the written language. In these games, other elements were included, such as time restrictions and a competitive element. The former was found to be useful,while the latter seemed not to influence the process very much, as the task itself was already very interesting.

Although the conditions in the Essex experiment do not always hold, it has been argued that this type of communicative activity, especially the communication games, should be at least a component of a language program (see Long & Castaños, 1976). Some of these games have been developed at the Xochimilco campus of the Metropolitan University (see Gutiérrez & Long, forthcoming). One of these games was virtually a replica of the first one described by Allwright, except that the objects were substituted by geometric figures, or cuisinaire rods which provided for a linkage with our materials. Another game was designed so that the students could practice description and identification. This game consisted of sets of four almost identical drawings. The four drawings were placed in front of the pair. The first student had to describe one of the drawings and the second student had to identify which of the four drawings had been described. It was interesting to note the different strategies used by the students. Some, for example, tried to focus on what they considered the most distinctive element of the drawing they had chosen. Others attempted to describe the pictures in terms of the relative location of objects. Still others had recourse to the use of analogy.

It is apparent that the proposed handling of the materials and the change in the teacher's and students' roles requires a different classroom organization than the most common one,the lockstep. Group work of various types is in fact supposed to provide a setting in which inhibitions disappear, what Barnes calls "exploratory talk" may occur, and where there are more roles available to students. This will result in language use of kinds not open to students in lockstep work, even if good materials are being used (see Long, 1975; Long, et al, 1976).

EVALUATION: THE EFFECTIVENESS OF CLASSROOM ACTIVITIES

Although there is a need to further develop methodology which focuses on communicative competence, there is also a need for re-search to show the co-relation between classroom activities and their achievement. At this point in time we can't consider any pre-scription to be definite because we lack knowledge of the process.

Different approaches to this research question have been taken. Error analysis, for example aims at revealing the nature of the knowledge a learner possesses at a given time. It seems possible to associate, at least to a certain degree, the types or errors a person makes and the learning strategies he is using. Another approach is that of describing actual classroom processes. As, from the discussion above, it seems clear that communication has to be practiced in order to achieve communicative competence, it seems logical to devote attention to what actually happens in classroom interaction in terms of communication. Most research on this aspect is, so far, at a descriptive level, and no attempt to provide prescriptions based on it has yet been made.

A coding system to describe interaction which concentrates on the affective domain was developed by Ned Flanders and modified by Gertrude Moskowitz. In this system, which focuses on teacher behaviour, a teacher's style can be classified as direct or indirect, but there is no attempt to describe this style in terms of classroom discourse. Rather, teacher behaviour is coded in very general terms as accepting ideas, criticizing, lecturing, etc.

Another classroom interaction analysis coding system, called FOCUS, developed by John Fanselow (1976) deals with communicative functions such as 'differentiate' or ' explain ' but does so only to describe the continuity of discourse. In addition, some of the categories are too big. In foreign language learning we would also be interested in knowing whether the students' knowledge of the language allows them to cope with a wider and finer range of communicative functions and even the ability to organize them coherently in logical terms.

In a research project carried out at Xochimilco (Long, Adams, McLean & Castaños, 1976) it was discovered that these systems would not provide the information that was being sought, so a new coding system was developed. It contains three major areas: pedagogical moves, social skills and rhetorical acts. The social skills and pedagogical moves deal with continuity in the discussion, that is, with the devices used by students to facilitate discourse or to prevent a rupture in it due to lack of understanding of a term or lack of support, for example. The third area, rhetorical acts, allows us to observe which functions the student has been able to perform with the language.

Some examples of categories in the area of pedagogical moves are 'student reformulates his or her previous assertion.', 'student focuses discussion' and 'student asks for information about the target language.' The second, social skills includes 'student encourages other', and 'student explicitly expresses agreement.' The final area, rhetorical acts, includes 'student predicts', 'student hypothesizes', 'student defines.'

To be of scientific value, category systems must have certain characteristics. Sinclair (1975) has stated that the minimum set of these is (1) The descriptive apparatus should be finite, (2) the categories in the system should be precisely relatable to the data, i.e. operationally defined, (3) the system should be comprehensive, (4) there must be at least one impossible combination of symbols, i.e. co-occurrence restrictions should be revealed.

Basically, if a system meets the four conditions, it will be both consistent and useful. Usefulness is reflected in conditions (3) and (4). We want to be able to describe and differentiate as much data as possible and discover rules about the occurrence of the different elements. Consistency can be best seen in conditions (2) and (3). We want to be able to identify data without ambiguity, and having elements belonging to no category at all is certainly ambiguous. Nevertheless, consistency means more than this. It also means internal organization and real grouping, for want of better terms. Generally, it is hoped that internal organization takes a hierarchical form. Real grouping is supposed to reveal common and relevant, that is, distinctive, different characteristics. It would be no good to give each element a different name, as in the case of words, for example, their Spanish translation. We, as Sinclair says, "may be merely creating the illusion of classification." Condition (1) provides these extra elements of consistency; that is, if conditions (2) and (3) obtains, then the existence of conditions (1) will guarantee organization, at least of the simplest form, namely, that in which all the categories have the same hierarchy. Grouping will also be guaranteed; by placing a large number of elements in a smaller number of categories, more than one element will fall in the same category, even if it is the so-called ' X ' category, i.e. that of all the elements that do not belong in any of the others. However, we believe that internal organization and real grouping can be obtained with certain infinite systems, and that, therefore condition (1) need not be expressed in such a restrictive form.

Consider the following system:

A_1 = x* is the category of all the words that refer to one object.

A_2 = 2x is the category of all the words that can refer to two objects.

And so on:

An = nx is the category of all the words that can refer to n objects.

The general definition for the categories An certainly provides strong

internal organization, and as the words that refer to one object are more than one, grouping can also be done. Now suppose we had distributional criteria to discover when one word refers contextually to another one. We could then say *The equal sign is being used rather freely for the sake of brevity and simplicity.

" Theorem.   If:

     1)   am C Am (am belongs in Am)

           an C An (an belongs in An)

     2) am refers to an

     3) $m > n$ (m is greater than n),
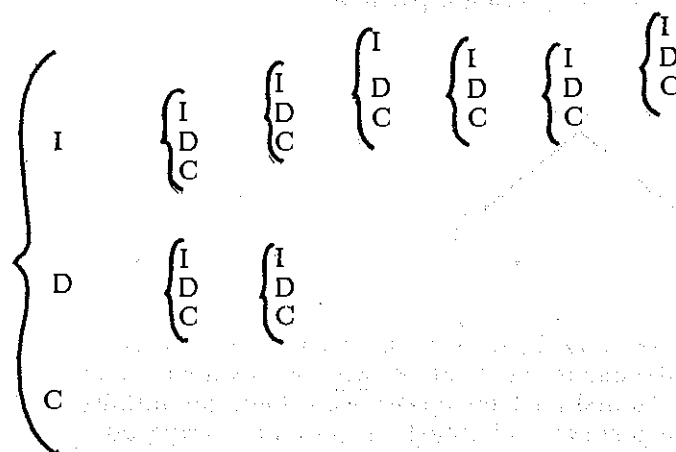
     then n stands in a relation of hyponymy to m. "

The proof would be this:

     "an refers to an item, am refers to an and, therefore, to the same item. As m is greater than n, then am can refer to more items than an. Therefore, n stands in a relation of hyponymy to m. "

The only effect of restriction 1) would be to make it impossible to state this generalization. We could say iron is hyponymous to metal and water is   hyponymous to liquid; furthermore, metal and liquid are hyponymous to substance.   We would not be able, however, to express   the common relationship between these words in such an abstract and precise way, but only in an empirical one, through lists.

The above is only an illustrative example. Distributional criteria may not produce clues to contextual reference of lexical items, and, then, our theorem would not be a theorem at all; we would not derive the property from other more fundamental ones. We would only state intuitive knowledge in a more complex, but less useful way. There are, however, other examples of infinite systems which may, in the future, prove to be relevant. We think, for example, that scientific language could be described in terms of cycles of introduction, discussion and conclusion, to put it simply and probably superficially. A pattern could be like this:

(I = introduction,   D = discussion,   C = conclusion)

$$
\left\{
\begin{array}{l}
I \quad
\left\{
\begin{array}{l}
I \\ D \\ C
\end{array}
\right.
\left\{
\begin{array}{l}
I \\ D \\ C
\end{array}
\right.
\left\{
\begin{array}{l}
I \\ D \\ C
\end{array}
\right.
\left\{
\begin{array}{l}
I \\ D \\ C
\end{array}
\right.
\left\{
\begin{array}{l}
I \\ D \\ C
\end{array}
\right.
\left\{
\begin{array}{l}
I \\ D \\ C
\end{array}
\right. \\[3em]
D \quad
\left\{
\begin{array}{l}
I \\ D \\ C
\end{array}
\right.
\left\{
\begin{array}{l}
I \\ D \\ C
\end{array}
\right. \\[2em]
C
\end{array}
\right.
$$

Relationships between such cycles may be specific to each case. That is, we may only say: "the third cycle evolved from the introduction in the second cycle and its introduction in the second cycle and its introduction included an observation, its discussion, an induction, and its conclusion, a generalization- in this example." We need, then, to refer to the third cycle as a single one and rely on common sense to understand this. That would be neither very useful nor interesting, of course. If, however, common features appear in all the third cycles, then we will want to consider the third cycle as a category, and a logic to deal with infinite systems will be required.

It is interesting to note that such a logic has been used implicity in certain linguistic models. In Chomsky's 1965 model, for example, this possibility is considered:
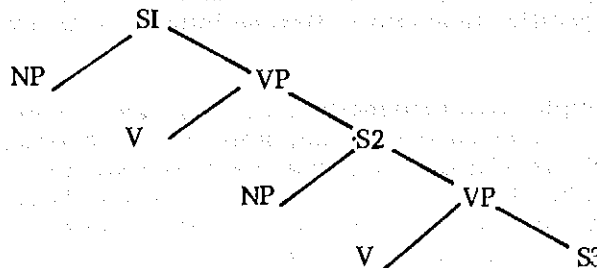
In Chomsky's 1957 model, it was not possible to have

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            VP
           /  \
          /    \
         /      \
        V        S
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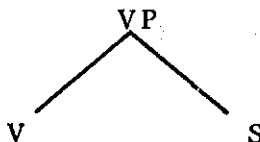
and many sentences could not be dealt with. It can be seen that
generalizations fot the use of the relative who, for example, can
be formalized using Chomsky's 1965 model and a logic for infinite
category systems. In general, relationships between juxtaposed
sentences have been dealt with. It is possible in such cases to
present rules through concrete examples and rely on intuitive capa-
cities of induction to obtain the corresponding generalizations. By
saying, for example, how the relative who is to be used in sentence
two when sentence one satisfies certain conditions, it can be assum-
ed that similar restrictions will be understood to hold for sentences
six and five. Therefore, it is not necessary to use the logic explicitly
However, if we want to study the relationships between sentence n
and sentence n-2 or sentences m and sentence m+3, at least this
notation is useful.

We do not know whether infinite systems will provide relevant
information for the study of discourse. However, due to the very
possibility of this being so - and intuition strongly suggests it is -
these systems should not be precluded a priori. It is not meant
that there will be an infinite number of categories, once a classifi-
cation of a piece of language has been made, only that if the number
cannot be specified in advance, then an infinite system will be
required.

An example from arithmetic will, it is hoped, help to illustrate
the problem. If we have a system of numbers consisting only of the
digits 1 to 9, we will have to define $9 + 2$ as equal to 1, or 3, or
whatever within 1 to 9. These systems are useful in some cases.
In many other cases, however, we will want to define $9 + 2$ as equal
to 11, and $11 + 4$ as equal to 15, and so on . . .

A final point in favour of infinite systems of the sort considered:
let us say that usefulness also means communicability. Now, what
is more communicable, the condensed form 'if cycle n includes
an observation, then cycle $n + 2$ includes a generalization', with
unspecified n, or a list of all the cases where this occurs?

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