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This 10th-grade unit on language introduces the major ways in which people learn language. Primary source materials used are Roger Brown's "Words and Things" and selected writings of Francis Nelson, Cathy Hayes, and Charles Hockett. The linguistic and nonlinguistic "worlds" in which people live and the need for people to categorize in order to understand their experience are examined to initiate discussion of the three levels of language learning--(1) the physical bases of speech--the human speech mechanism and the production and development of speech sounds, (2) the psychological bases of language--the perception of phonological, morphological, and syntactic categories, and (3) the cultural bases of language, including the Whorf-Sapir hypothesis concerning relationships of language with culture, thought, personality, and reality. Included in the unit are lectures, procedural notes, sample discussion questions, activities, examinations, and suggested references on language learning processes. (JB)

Unit 1006

Learning Our Language

CAUTIONARY NOTE

These materials are for experimental use by Project English Fellows and their associates who contributed to their development.

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These materials were developed by the Project English Center of the University of Minnesota under a special contract with the Cooperative Research Division of the U. S. Office of Education, effective prior to July 14, 1965.

PURPOSES OF THE UNIT

This unit is intended as an introduction to some of the primary aspects of language learning. As in other materials developed in the Minnesota Project English Center, the study of language as language provides the underlying framework to which the other skills, attitudes and concepts in the English curriculum are related. By studying the major ways in which the individual learns to understand important aspects of language in general. Moreover, since language leaning is so central to the general process of learning, the student should become somewhat familiar with an important part of his school experience.

Since this unit includes material that is likely to be fairly difficult for the high school sophomore, it is recommended that units providing relevant background information b taught before this one. In particular, Unit 1001 - The Nature of Meaning in Language, and Unit 1005 - Grammatical Formations, should be taught before this unit. It is likely, then, that this unit will be taught toward the end of the school year.

The primary source of this unit is Words and Things by Roger Brown. It is highly recommended that the teacher read this book before attempting to teach the unit. While the unit can be taught without this background, the teacher will find the book most helpful, particularly the introduction and chapters I, III, IV, V, Vi and VII. Some of the same material is available in a paperbound book, A Study of Thinking, by Bruner, Goodnow, and Austin. This book includes an appendix on language written by Roger Brown.

Within the unit, the language learning process will be examined on three levels: physical, psychological and cultural. The physical aspects are quite technical, and the treatment in the unit is brief. The teacher might wish to provide additional material on phonetics and/or phonemics; in this case, the early chapters of Words and Things will be helpful for examples. The psychological aspects of language learning are given the heaviest emphasis. The process of categorization is the central method of analysis in this section. The cultural bases of language, the last part of the unit, will probably be the most demanding for both the teacher and the students. While there are a great many interesting and important questions related to linguistic relativity, this material has the least conclusive research, so the answers to the questions will be most difficult to provide. Perhaps the value is in the asking of these questions.

NOTE TO THE TEACHER

Procedures, Sample Discussion Questions, Sample Introductions, and Summaries are supplied for your guidance. It is assumed that you will adapt these to your own classes and students. Likely student responses to discussion questions are indicated in parentheses. For some of the discussions included in this unit, the range of student responses is too broad for the Sample Question--Sample Response format. In these discussions, a list of important ideas is provided, and the teacher will need to structure the discussion in the way that is most appropriate.

Special attention should be paid to the places in the unit where the word "ATTENTION" is used. This serves to call your attention to specific kinds of generalizations which might be drawn at that point.

Materials Needed

Brown, Roger. Words and Things (N.Y.: Free Press of Glencoe, 1958.)

Francis,W. Nelson. The Structure of American English.

Hayes, Cathy. "Teaching an Ape to Talk," from Ape in Our House.

Hockett, Charles. "13 Design Features of Animal Communication," Scientific American, September, 1960.

CONTENT OUTLINE

I. Introduction

- A. The linguistic world and the non-linguistic world
- B. The category as the unit of analysis
- C. The physical, psychological, and cultural bases of language

II. Physical bases of speech: the production of speech sounds

- A. The human speech mechanism
- B. Development of speech sounds

III. Psychological bases of language: perception and categorization

- A. Learning to perceive phonological categories
- B. Learning to perceive morphological categories
- C. Learning to perceive syntactic pattern categories

IV. Cultural bases of language

- A. The Whorf-Sapir hypothesis
- B. Linguistic relativity

V. Conclusion

- A. Supplementary unit activities
- B. Final examination for the unit
- C. Bibliography for student and teacher references

Introductory Activity - Procedure: Before telling the students about this unit, it is recommended that the following "word association" activity be used. Indications of the purpose of the activity may influence the spontaneity of your students' responses, so student questions should be delayed until later.

Directions for students

"I'm going to give you a series of nine words. When I give each word, I want you to write down the first word that comes to your mind. You'll have to do this quickly; I'm only going to give you five to seven seconds between each word. All right here are the words:"

CAT

MAN

KING

UP

PEACE

TABLE

COLOR

WAR

LOVE

NOTE ON TABULATING PROCEDURES:
Student responses can be tabulated from their papers or from an oral sampling. If time permits, the tabulations from students' papers would probably be more accurate. The form on page 4-A may be copie on the chalkboard. If an overhead projector is available, you may use the transparency that has been included with the unit materials.

Sample Discussion

As you can easily notice from this form that I'm using for your responses, I have been able to predict the words you have written very well. I doubt that many of you are particularly astounded by my predictive abilities; I am quite certain that you have seen enough word games on television to know that responses in a

TABULATION FORM - WORD ASSOCIATION

STIMULUS WORD	HIGH FREQUENCY RESPONSES	NUMBER OF RESPONSES OTHER RESPONSES		
CAT	DOG			
MAN	WOMAN			
KING	QUEEN			
UP	DOWN			
PEACE	WAR			
TABLE	CHAIR			
COLOR	RED			
WAR	PEACE			
LOVE	HATE			

Sample Discussion, con't.

situation like this are quite often highly predictable, even by an untrained person. The crucial question here is not whether I am skilled at predicting these responses, but why most people can fairly accurately predict these. Put in another way, the question is whether we can explain why people respond to words as they do. During this unit we will not only be looking at words, but at language in general, ranging from the speech sounds that make up words to the larger structure in which words are used. For the moment though, let's just look at the word association game we just finished.

Sample Discussion Questions

1. Why, for instance, did most of you write "DOG" when I said "CAT?"

   (Students may suggest several reasons, among which might be: "We frequently hear the two words in pairs.")

2. The fact that we frequently hear these words used in pairs doesn't really answer the question, at least not completely; why would "DOG" be preferred over "KITTEN?"

   (Again, responses will vary. Allow students to discuss different reasons.)

3. Do you see any similarities in the most popular pair you listed?

   (Many of the pairs might be called opposites, although the notion that DOG and CAT are opposite could certainly be argued.)

4. So far we have not been able to come up with any conclusive solutions, and frankly we don't need to at this point. Perhaps this will be clarified somewhat by the end of the unit. We do know, however, that these responses are quite predictable; do you know of any practical uses of this word association process?

   (It is used for psychological testing.)

Sample Questions Continued

5. Do you know of any of the ways they make inferences from word association test results?

   (The psychologist sometimes watches for abnormal responses.)

6. What kinds of assumptions are the psychologists working under when they analyze these tests?

   (They assume that there are "normal" and "abnormal" responses to words.)

7. Do you see any particular limitations on this kind of testing?

   (The results should be viewed as tentative and incomplete; other tests should also be used before any strong conclusions are reached.)

Sample Summary

While it is not our purpose to learn about and evaluate psychological testing procedures, this particular test we've been looking at raises quite a few questions. I think we can at least conclude from this one example that language is somehow very closely related to the concerns of the psychologist; we've seen here that personality, attitudes and the like are often measured and analyzed through the use of language. In this unit we will be primarily concerned with the ways in which people learn their languages, and the relation between attitudes and language will certainly play a rather important part in our study. Actually, we will be studying two psychologies: the psychology of learning, and the psychology of language. Obviously, the two are not mutually exclusive of eath other; there is considerable overlapping. For those who like to have a label for the things being studied, I suppose the best would be the term "psycholinguistics." This is a rather new field in which the relations between psychology and language are the main objects of study.

NOTE: The discussion suggested here assumes that students have studied MPEC Unit 1001, The Nature of Meaning in Language. If this is not the case, additional discussion will be necessary.

Earlier this year, when you studied the unit on the nature of meaning, we spent a considerable amount of time discussing the relations between words and referents. You should remember, I hope, the distinctions that we made between these two. In human speech, a word is a combination of sounds that is used to refer to something. This referent, the thing referred to, might be an object, an event, an idea, an emotion, or what have you, but one of the important distinctions that we made was that <u>the word is NOT the referent</u>. I believe the statement we used was, "The word is not the thing." We made this distinction because people do not always recognize that there is a difference. To use a parallel situation, I'm sure that most of you have had the experience of using a road map. If you've ever traveled with a younger child you may have found yourself explaining this map. The child will ask what this piece of paper is. After being told that this paper is used to show where you are or where you are going, the child usually then asks, "Where are we?" When you point our your present location on the map, the child looks at the spot and remarks that he "can't see us." The typical response is that the child doesn't understand the relation between the map and the territory it represents. He fully expects to look at this map and see a miniature automobile, the one he is in, driving along on the map. I'd guess that your response to this is that we are looking at a childish mistake--that an adult wouldn't make such an elementary mistake.

Idealistically, I would wish this were true, but as we found in the unit on meaning, especially when we were talking about semantics, people frequently do react to words as if they were the things the words represent. It only takes a few minutes of watching television commercials to find examples of mistaking the word for its referent.

Students might be able to suggest several good examples of word-thing confusions.

For our purposes in this unit, it is important to keep in mind the distinctions between what we might call the linguistic world and the non-linguistic world. The linguistic world is comprised of the sounds we use in speech, the gestures that accompany these sounds (these would be border cases), and the markings used in the process of writing. The non-linguistic world is made up of the referents of language--the objects, events, ideas, etc., which are referred to by language. Our purpose, then, is to study the ways in which people learn to use the linguistic world to deal with the non-linguistic.

There are a few questions that we might ask at this point; perhaps they might seem obvious to some of you, but I think we should still talk about them.

Suggested Discussion

1. How completely can we expect to separate the linquistic world from the non-linguistic world?
2. Can we study either one of these as independent of the other?
3. What kinds of problems do we face in trying to base our study on a complete separation?
4. Can the two "worlds" perhaps be equated? Are they exactly equivalent?

NOTE:
The suggested discussion questions will probably be too complex and too general for many students. It is not intended that students find answers that are conclusive at this point; indeed, there may not be conclusive answers. These are intended as beginning points, suggesting problems for consideration throughout the unit. Since student responses will vary greatly, they are not suggested here. Students should be allowed to continue the discussion until they have suggested enough alternatives to effectively lead into the body of the unit.

Sample Introduction

One of the qualities of the non-linguistic world which we frequently talk about is color. I'd like you to give me all the names of colors that you can think of; I'll try to list these on the board.

NOTE:
If an overhead projector is available, the teacher will probably find it easier to use than the chalkboard. If your students are unusually sensitive to colors, you will find it necessary to stop when an adequate list has been suggested.

So far you have been able to suggest _____ color names. I'm sure you could probably think of more if you had more time, but I doubt that you could find names for each of the seven million color variations that psychologists estimate the normal human being can distinguish. Seven million sounds like a rather large number of color variations but let's assume that their estimate is approximately correct. Here we come to an important question for the unit. How does the human being, faced with such a large number of possibilities, manage to compress them into approximately 4000 entries (the largest collection of English color names), of which only eight occur very frequently.

Sample Discussion

1. What kind of process must take place in order to make this possible?

   (The colors must be divided into groups, with general names for each of the groups. More specific names can be used for variations within a group.)

2. Let's assume we have two of these groups, red and yellow; when are these labels adequate, and when are they inadequate?

   (They are adequate when we're concerned with only the basic color groups, but if we need to name shades of red, for instance, the general term "red" is inadequate. If we are looking at a color that is on the borderline between red or yellow as a label.)

3. Continuing with the examples of red and yellow for a moment, what labels would you be likely to apply as you move along the spectrum from red to yellow?

   (Red, yellowish red, orange, reddish orange, yellow)

4. How do you identify these and distinguish them from each other?

   (Relative qualities of "redness" and "yellowness")

5. This all seems to be quite simple; obviously a normal human being can distinguish several different colors in the color spectrum. This leads us to a more difficult question. Do all people make the same color distinctions?

   (Students will probably say "yes" to this question.)

6. Actually there are cultures which do not use the same color distinctions as we use. Some, for instance, do not make a distinction between blue and green, using one word for both colors. Could we say, then, that people in these cultures cannot recognize any differences between what we see as green and blue?

   (No, not necessarily. These could be recognized as shades of the general color named, but evidently they don't find it necessary to make any distinctions.)

   For an example related to this I'll read a short passage from Harry Hoijer's book, Language in Culture.

   "To illustrate this procedure in brief, let us turn again to Navaho and one of the ways in which it differs from English. The Navaho color vocabulary includes among others, five terms: łigài, dìłxìł, łìžìn, łìčì, and dòɬìž, to be taken as one way of categorizing certain color impressions. ligai is roughly equivalent to English white, dìłxìł and łìžìn to English

> black, lici to English red, and do iz to English blue or green. We do not, it should be noted, claim either than English speakers cannot perceive the difference between the two blacks of Navaho or that Navaho speakers are unable to differentiate "blue" and "green". The difference between the two systems lies simply in the color category recognized in ordinary speech, that is, in the ordinary everyday ways in which speakers of English and Navaho analyze color phenomena."

Sample Summary

I brought up the examples of color to point out an important aspect of language. We've been talking about ways in which the linguistic world is used to deal with the non-linguistic world, and at this point you should be able to make two generalizations about this relationship.

ATTENTION

Important generalizations. Students might need help in the wording of these.

> (People set up linguistic names and group the non-linguistic phenomena under these labels. Not all people use the same processes of naming and grouping.)

Throughout the remainder of this unit, we're going to assign a rather specialized term--the category. Essentially the problems we have been discussing so far relate to the ways in which linguistic categories are used to deal with the non-linguistic world.

Sample Introduction

Before we go any further in this unit, I think we ought to clarify some terminology that we will be using from now on. The term "category" is not at all new to you, and when we discuss language learning, the general meaning of category is essentially the way we'll be using the term, but we will be talking about some rather specialized categorizing processes. Perhaps the most difficult terms for you to learn are those related to the ways in which language categories are formed and perceived. I think I can best explain these with some illustrations.

Sample Discussion

1. Suppose we have a person who is completely naive about automobiles. He wants to buy a car, but he soon finds out that there are many categories of cars. He has told a salesman that he wants to buy a car. The salesman, of course, has replied, "What kind of car?" For the moment, disregarding company names what categories of car models would this buyer be expected to know?

   (Two-door, four-door, sedan, hartop, convertible, station wagon, sports car, luxury car, family car, compact, etc., with many variations or combinations.)

2. Let's consider all of these, including the combinations, as categories. The question now is how one decides category membership. How, for instance, would you define convertible?

   (Students will probably suggest that convertibles have folding, fabric tops, and that this distinguishes them from other models. Some students might bring in the example of the 1957-59 Ford "convertible" which had a metal top; they should also be aware that the auto manufacturers chose <u>not</u> to call this a "convertible," and used the term "retractable hardtop." Students might also bring in the examples of the sports cars which have removable fiberglass tops, usually specially manufactured. If these examples are brought in, students should be able to hold a good discussion.)

ATTENTION

While students discuss the convertible category, the teacher should try to get the students to set up a criteria, hopefully finding the most basic and most reliable.

3. All right, you've been going through a process of suggesting and testing possible criteria or standards for judgment; I'd like to suggest a few more. Could you call a particular car a convertible because it has four wheels? Because it has an internal combustion engine? Because it has a radio?

   (Obviously not. Many others might have exactly the same.)

4. My suggestions wouldn't be much help in deciding whether the car is a convertible or not; suppose I tell you that a convertible usually has a stronger frame than a sedan or hardtop--could we then use this as one of the distinguishing characteristics?

   (Actually we could not. While it might be true that the convertible has this stronger frame, the station wagon, because of its weight, is also built on a stronger frame; this is often the same frame used for convertibles, so a person looking <u>only</u> at the frame wouldn't know whether it was for a station wagon or convertible.)

Sample Summary

We could probably go on arguing about the identification of car models for some time, but I'd like to step in at this point for some terminology. We've been talking about various characteristics of automobiles that might be used as the basis for identification by our naive buyer. Instead of the word "characteristics," we're going to be using the word ATTRIBUTES. This is perhaps a little more specific, and it is the term most frequently used by the linguists and psycholinguists. One conclusion about attributes which can easily be drawn at this point; there are different kinds of attributes when one is trying to base judgments on them. By using the manufacturer's own term "retractable hardtop," we eliminated that model from our "convertible" category, leaving the folding fabric top as the attribute to which we can finally turn for a fairly definite identification. This becomes an attribute that we can use as a criterion, so we will be using the term CRITERIAL ATTRIBUTES. <u>The criterial attributes, then, are those which allow us to say whether a given item is a member of the category in question</u>.

It should be obvious that we suggested a number of attributes that certainly would not be criterial for the category "convertible." You immediately attacked the possibility of using the four wheels or the internal combustion engine or the radio. We simply cannot use these as criteria for that category. We would have to admit that these are, in fact, attributes of an automobile, but we cannot say they are criterial, so we call these

Sample Summary Cont.

NON-CRITERIAL attributes. They are attributes, but they don't establish category membership for us. These same attributes might, in fact, become criterial if we would talk about a more general category. I say "might" here because the number of wheels, type of engine, and the radio could all be questioned. During World War II, for example, some German staff cars has six or more wheels. The type of engine is not completely criterial because they are now working on other types for passenger cars. The radio, since we find radios in so many different places and not in all cars, is almost worthless for criteriality. I'll try another example. We'll use the ability to carry passengers as an attribute. For the category "airliner" this would be criterial, but for the category "guided missile" it would be non-criterial.

There is one more term for attributes that I would like you to know. When I suggested the stronger frame as a possible criterial attribute for the category "convertible" we found that this might be confusing, since the station wagon might have exactly the same frame. <u>When an attribute confuses interferes with our ability to establish category membership, we call it a NOISY attribute</u>. It might be partially criterial, but it confuses more than it helps.

If students have studied the communication model, the teacher can refer back to the term "noise" in the communication process. The word is used in the same sense in the description of categorization.

NOTE:
Since the categorization process will be mentioned several times throughout this unit, the teacher might wish to hold further discussions of attributes and categories to fully develop students' understanding.

Supplementary Activities

These activities are intended for two uses: to develop and/or evaluate student understanding, and to provide material for subsequent discussion.

1. Students might be given an overnight assignment in which they are to find and report on a case of categorization in which the identification of criterial and non-criterial attributes has important implications. The categories "subversive" and "communist" would be two examples. This could be either a written or spoken report.

2. A short essay on one or a combination of the following questions:

   a. Why do people categorize the non-linguistic world with linguistic terms?

   b. What are the postive implications of categorization?

   c. What are the negative implications of categorization?

   d. Why should a student concern himself with categories and attributes?

3. A short quiz in which the teacher provides the category names. Students are asked to identify criterial, non-criterial, and noisy attributes of the categories. Examples: "a good book," "good looking girl," "sports car," "Republican," "moderately priced home."

Sample Discussion

So far, we've been discussing the process of categorization in somewhat isolated and rather theoretical terms. I think it's time we shifted emphasis a bit. It's one thing to simply take down definitions in your notes; it's something else to apply and justify this study. I'd like to ask a question that some of you have undoubtedly asked already. "So what? Why should we spend class time discussing categories and attributes?"

Note:
In subsequent class discussion, try to establish the following generalizations:

1. The categorization process is central to the learning process in general.

2. Much of what goes on in the school involves the learning and testing of categories and categorization systems.

3. Without categorization, a person would not be able to inefficiently deal with the non-linguistic world; each phenomenon would have to be dealt with separately. Our various classification systems would have no basis.

4. We might assume that the more a student knows about the categorization process, the better he would be able to understand and "learn" those situations in which the process is central.

5. While there is a definite necessity for categorization of the non-linguistic world, and while this might be a basic part of knowledge, it is also a basic part of mistake. If the category is ill-formed or too rigidly interpreted, the results can reflect naivete, prejudice, faulty stereotyping, unwarranted conclusions, etc.

Sample Summary

Perhaps the most important thing we've brought out is also the most confusing. On the one hand, it is not very difficult to see that the categorization process is central to the entire thinking process. We can see that without it, learning and communication would be extremely limited. On the other hand, it is equally easy to find examples of the faulty use of categorization resulting in severe social problems. In our previous discussions, we've used examples of political, religious, ethnic, and social groups, to name a few, that involve the use of categorizing. In the areas of politics, religion, racial and social groups, and others in which we respond categorically

Sample Summary Cont.

to people, it if rather painfully obvious that the category is not always such a positive force. The same essential process allows man to be both knowledgeable and prejudiced, so I think we'd have to say that our generalizations must be very heavily qualified or guarded at this point. Perhaps we can do no more than try to avoid the glibness that sometimes accompanies the use of terminology like we have been discussing.

Sample Transition

I think you now understand enough about the category and the types of attributes to put them into more specific use in the study of language learning. The unit is divided into three major parts: The Psysical Bases of Speeches, The Psychological Bases of Language, and the Cultural Bases of Language. We will be using the category as the main unit of our analysis. Throughout the unit, I would like you to ask two questions:

1. How does a person learn this?

2. Of what importance is learning this?

Procedure: Distribute copies of the selection from W. Nelson Francis' The Structure of American English ( ), pp. 62 to 66, beginning with "None of the organs" and ending with "Adam's apple while saying 'ah.'"

While I want you to ask these questions continually, I don't want you to expect to be able to adequately answer them all the time. I'm less concerned with the actual answers we can find than I am with the process of asking them.

NOTE:
The rather short section on the phsycial basis of speech is intended mainly as introductory. It is not the intention to provide students with a comprehensive understanding of speech production and phonetics. For the purposes of this unit, the excerpt from Francis and the accompanying diagram should prove sufficient for giving students a basic understanding of speech sound production. If you wish to go into more detail, teaching the relations between the speech organs and specific speech sounds, the section immediately following this one in Francis would be helpful. This should be viewed, however, as supplementary to the main purposes of the unit, and it would probably be more successful with able students.

NOTE Cont.
As it is structured here, the excerpt for student reading includes a diagram for reference. In subsequent class discussion, the overhead transparency accompanying the unit should be helpful. A short true-false quiz has been included as an option.

Optional True-False Quiz

Directions: Mark the following as true or false. When an item is marked false, write a brief explanation showing why the item is false.

1. For most of the organs involved in speech, speech is the primary function.

   (False; speech is a secondary function, subordinate to primary functions such as eating and breathing.)

2. The process of getting the air moving is called initiation.

   (True)

3. Phonation involves the production and shaping of sounds.

   (False; articulation shapes the sounds; phonation is the production of voice.)

4. In most language, most sounds are produced in inhalation.

   (False: Exhalation)

5. Most speech sounds are produced when the vocal bands are in a relaxed state.

   (False: just the opposite)

6. A glottal stop is produced when the vocal bands are completely closed.

   (True)

7. Whether the air moves into the oral cavity or the nasal cavity depends on the action of the velum or soft palate.

   (True)

8. The structures in the mouth have little function in articulation.

   (False: Most of the articulation in the English language is in the oral cavity.)

9. The condition of a person's teeth has little to do with the articulation of speech sounds, since the teeth are stationary structures.

   (False: Much of the action of the tongue depends upon the tongue's contact with the teeth.)

10. If the hard palate or roof of the mouth were not completely closed, leaving a passage between the oral and nasal cavities, much of the fuction of the soft palate would be ineffective.

    (True.)

Sample Lecture-Discussion

We've been discussing the ways in which speech sounds are produced. Now we can turn our attention to the ways in which the language is acquired. We'll be directing our attention to acquisition of the first or native language, the language which the child learns as he matures in his own culture. Before we consider human language acquisition, however, let's consider the question of animal communication a moment. You've heard the statement that language is a distinguishing characteristic of man. I don't imagine that the statement strikes you as terribly profound and I don't suppose it should. I'm equally sure that you know that some animals communicate with one another even if in only limited ways. A question comes to mind. Since animals do communicate, what prevents them from developing language, or, to put it another way, why can't animals acquire language? I think if we examine this question for a mement we might begin to get some idea about what makes language a "distinguishing characteristic of man" and about some of the more important features of the earliest steps in language acquisition. The article that I'll be distributing will provide us with a starting point for our discussion of these matters. It describes an attempt to teach a chimpanzee to "talk," While you're reading think about these questions.

The teacher might wish to refer to Unit 701 for examples and further explanation. Some students might want to argue that the communication of animals does constitute a language. Teacher reference: Charles Hockett's "13 Design Features of Animal Communication," Scientific American, September, 1960. You might paraphrase some of Hockett's design features in such a discussion.

Procedure: Distribute copies of Cathy Hayes' "Teaching An Ape To Talk," From Ape in Our House.

Sample Discussion Questions to be written on the board or duplicated and distributed to class.

1. What habit of human babies makes it easier to teach them to talk?
2. Viki had some inform "speech" habits. What were they? How did these habits differ from the habits of human babies?
3. When did they realize Viki wouldn't learn to speak by herself?
4. What means did they use to urge Viki to speak?
5. Why was Viki's "asking sound" so difficult for her to make?
6. What methods did Keith use in his attempt to give Viki human words?
7. Why did they choose "mama" for Viki's first word?
8. Did Viki know what "Mama" meant?

In the discussion growing out of this reading the teacher might make the following points:

1. Though they possess the necessary vocal apparatus apes do not learn to speak.
2. Apes do have certain instinctive vocal behaviors in their repertories.
3. Apes differ from children, however, in that their vocalizations are very limited in number and in that they have no babbling instinct.
4. The motor skill of vocalization and the voluntary production of sound which seems instinctive in the human infant can only be acquired through intensive training for the ape.
5. The ape was able to generalize the "ah" sound to many "asking" situations.
6. When the ape learned to say "mama" he learned this "word" as asking sound, but didn't initially identify the "word" with its referent.

Summary

If the teacher wishes to consider these matters in greater detail, he might again refer to the Hockett article and read pp. 12-16 in Unit 1203.

In summary, then, the ape didn't babble as human babies do, didn't have the motor skill that babies have, and didn't readily assocate sound with specific referents. If you were to read further in the research carried on in this area, you would find these results confirmed. You would also find that ape's ability was stretched almost to its limits in Mrs. Hayes' experiment. The ape eventually learned to identify Mrs. Hayes as "Mama" and other apes in other experiments have learned similar

responses. But there does seem to be a limit. One researcher summarized his investigation in this way:

> "It seems well-nigh incredible that in animals otherwise so close to us physically there should not be a rudimentary speech-center in the brain which only needed developing. I have made an earnest endeavor and am still endeavoring, but I cannot say that I am encouraged."
>
> from Furness, Observation of the Mentality of Chimpanzees and Orang-utans., p. 281.

In the light of these differences in the instinctive behaviors of apes and human babies, we can begin our consideration of human language acquisition by considering in detail babbling and the development of the motor skill of vocalization in infants. It is with these behaviors that human communication begins.

Those of you who have younger brothers and sisters have probably witnessed the process of a baby learning to speak. Most of you even helped a baby learn to talk--probably without realizing that you were. If you have ever talked in the presence of an infant, you have probably reinforced the baby's attempts to speak. While you are reading the next essay look for the main steps in a baby's speaking process, and consider these questions:

Distribute: Roger Brown's Words and Things, Chapter 6.

Discussion Questions to be printed on the chalkboard or distributed to students.

1. Can infant crying be considered speech? Explain.
2. What is meant by the terms "expressive" and "referential"--Give Examples.
3. Explain how a baby's whimper can communicate.
4. Why is the whimper, connected with some meaningful action, an important step in a baby's speech learning?

Discussion Questions
Continued

5. Does the animal originally intend to tell us something when he goes to the door and scratches? How does his scratching become an attempt to "tell us something?"

6. What kind of imitation is the infant first engaged in?

7. How is imitation important in infant speech learning?

8. When a baby says his first "word" does he usually have a referent for it?

9. How does he learn that the word "means" something?

10. How are words added to the "primal sentence frame?"

In the discussion growing out of the reading, the teacher might make the following points:

1. While infant crying is not speech, the fact that it is instrumental, that it causes parents to react is of importance in understanding the development of speech.

2. In a sense as the infant's crying becomes whimpering and whimpering plus miniature performance we see a movement from experience to referential vocalization.

3. Animals are not totally incapable of referential symbolism (cf. the preceding sections on teaching animals to "talk.")

4. Imitation, as typically explained, does not account for the infant's acquisition of speech sound. Self-imitation or the "circular reflex" must be considered if we are to provide a more accurate picture of this process.

5. As with the ape discussed previously the child's acquisition of motor skills and the development of his sound repertoire are somewhat independent of and prior to his discovery of the referential dimension of these sounds. (This is not to say that the child has no experience with or grasp of reference. The previously discussed "primal sentence" shows us the referential aspect of language in its earliest form.)

6. The sequence of development in these early stages is crying--whimpering--whimpering plus miniture performance--babbling (self-imitation and imitation of adults)--early referential speech. (It should be noted that these stages overlap and coincide to a large extent.)

Sample Transition

The article on infant babbling introduces some new problems. Somewhere within the process of babbling described in that article, the baby learns to make referential use of the sounds he previously made randomly or expressively. As mentioned in the article, any normally developing child has the ability to produce any human speech sound and you know that there are many sounds not used in the English language. By that time when the child is eleven or twelve months, though, he has learned that certain sounds are used in his speech community (in this case, this is limited). He learns this by hearing only certain sounds from the people he knows. He also learns this through the patterns of reinforcement from people who react to his speech. His own reinforcement was also mentioned as highly important, but this might or might not function in the limiting of his speech sounds to those of his native language.

On one level, perhaps, this seems to be a simple, natural process through which children learn. As you will see in this unit, however, this is a highly complex process through which a tremendous amount is eventually learned. If you'll think back a few days, you should remember the discussion of color categories. Through the process of categorization, we learn to identify and talk about the millions of possible color variations, using only a few terms and combination of terms. This certainly is a formidable job, but it is actually a minor task when it is compared to the categorization of speech sounds. The

Sample Lecture, continued

estimate of color variations I gave you was seven million. The variations in speech sounds are infinitely greater, even for one individual.

This is an extremely important point, but I'm going to have to ask you to accept some theoretical constructs in order to understand it.

1. No two human sounds are identical. This probably runs counter to some assumptions you've previously made The sounds may seem to be the same, but the differences are there, nevertheless. In order to see these differences, you need a machine far more sensitive than the human ear. You'll have to accept this without proof, since I don't have such a machine in the classroom.

2. The previous statement is true for each individual as well as any combination of individuals. Like fingerprints, any speech sound produced exactly like another speech sound by the same person or by different people is an accident.

3. Even though there are variations between all the speech sounds of an individual, there is a characteristic manner of speaking for each individual. This is called an idiolect. So within an idiolect of an individual speaker, a given speech sound will be produced in a similar but not identical manner.

These points will obviously need some clarification, which will happen as we go along. For our purposes right now, the point is simply this--that a person learning the categories of the linguistic world is faced with an infinite number of variations. Some of these will make a difference; many will not. Our job, then, is to try to find out how all this happens. At this point I should say that all of you have already gone through this process at least partially. You are still in it. My intention here is to provide you with an understanding of the process, a way of talking about it, a greater understanding of the language that is learned,

Sample Lecture, Con't.

and perhaps even improve your ability to handle the learning process.

The technical term for the individual speech sounds we've been talking about is the PHONE. That shouldn't be difficult to remember since so many words that deal with sound include "phone" or "phon". Our earlier statement, then , is that no two phones are identical. It is the infinite range of phones which must be categorized by the human speaker.

Simplifying considerably, the process includes the categorization of phones into classes of speech sounds called PHONEMES. You may already have heard this term. A phoneme is a class of phones, and it is most frequently defined as the smallest significant speech sound. In other words, a phoneme is a group of speech sounds which makes a difference and is recognizably different from other groups or phonemes. An example would be the last sounds in the word "CAB" and "CAP". The /b/ and /p/ sounds are recognizably different and they make a difference in meaning.

In the production and reception of speech sounds, the speaker of English uses 45 phonemes. So from the infinite variations of the speech sounds used within his language, he must learn to place these sounds into the forty-five categories. This is where the terminology you learned for categorization becomes important. If you try the /b/ and /p/ sounds, you should notice that there are both similarities and differences. The attributes of those sounds, then, can be classified in terms of criteriality.

Sample Discussion

1. What similarities do you notice?

   (Both are bilabial stops.)

2. Would the attribute "bilabial stop" be criterial or non-criterial to someone categorizing these phonemes?

   (Non-criterial.)

3. What, then, would be the crucial attribute?

   (Voiced-voiceless. /b/ is voiced, /p/ is voiceless.)

Sample Lecture, Con't.

We would carry on with this same process for each of the 45 English phonemes, using, of course, different attributes, but this is not the purpose of the unit here. I'm more concerned that you learn the general process now. One way of demonstrating the differences between phones and phonemes is to use an oscilloscope.

Note:
The lecture suggested here only talks <u>about</u> the oscilloscope as a measuring device. If you can arrange with your science department to use an oscilloscope in the classroom, students will be able to better understand this material. You will need an oscilloscope, an amplifier and a microphone for the demonstration. If this can be arranged, ask students to experiement with vowel sounds, trying to sustain the sounds for a short period of time. Note the variations in phones which will show up as oscillations along theline of the curve. Note also that similarity of pattern for a given vowel sound.

The oscilloscope, as many of you already know, is an electronic device for visually presenting sound waves. The sounds are electronically transmitted to a screen. The most important thing to remember for our purposes is that the oscilloscope does not perform like a human being receiving sounds. The machine reacts, within the range of its sensitivity, to the individual sound variations; it reacts to PHONES. The machine itself does not react to phonemes as a human being would. Each variation in a sound will show up on the

Sample Lecture, Con't.

screen, as long as the machine is sensitive enough to respond to it. If a person makes a vowel sound which can be sustained for any length of time, then, the oscilloscope will pick up the pattern of the sound and as many of the variations as it can. The oscilloscope will show a curve or pattern. It's important to note that the lines which show up on the screen are not constant, unwavering lines' if you would look carefully, you would see that the lines are continually vibrating or oscillating. The movements of the line demonstrate variations at the level of phones. On the other hand, even though there are the variations, there is still a basic pattern that usually can be seen. If the machine could make a photographic copy of the lines, this could also be done for consonant sounds, but the oscilloscope only shows these for a fraction of a second.

Whatever, pattern recurs, we have to remember that it is the person who uses the machine who perceives the pattern; the machine responds only to phones. In the direct perception of speech sounds, a similar process occurs. The human listener is the one who categorizes the sounds into phonemes, and we showed with the examples of /b/ and /p/ how this can be done. Actually, there are categories in between the phone and the phoneme, but we don't need to study them at this point. For our purposes, I'll be satisfied if you can learn the distinction between phone and phoneme.

All right, let's assume that the yound child has properly learned to perceive and distinguish between the phonemes of his native language. It should be easy to see

Sample Lecture, Con't.

that this is not all that he needs to know in order to communicate with other speakers of that language. If he walked around uttering phonemes in random fashion, the only thing he would communicate is a string of random sounds. This takes us to the next level of categorization--the meaningful combination of speech sounds into larger units. If I asked you what this would be, you would probably say "words," but I want to avoid using the term "word", since it doesn't accurately label the meaningful units of speech sound combinations. If you avoid the term "word" for a minute, thinking instead of the combination of phonemes to make meaningful units, you can see what I mean here.

1. What does the combination "un-" mean?

   (Usually means a negation of some sort.)

2. Could you call"un-" a word?

   (No)

3. What does the combination "pack" mean?

   (To put items into some kind of container)

4. Is that a word?

   (Yes)

5. All right, if you put those two combinations together, the result is another word, "unpack", meaning to take items out of their container. How many meaningful combinations of sound and how many words do you have?

   (Two meaningful combinations of sounds and one word)

This should illustrate the limitations of the term "word" for talking about the combination of speech sounds into meaningful units. There are meaningful units that aren't words. The technical term for these combinations is MORPHEME. Now you should be able to see from the example of "unpack".

Sample Lecture, Con't

that there are two types of morphemes. One morpheme is "un-" and the other is "pack". One cannot be used by itself, while the other can. The terminology here is rather simple, the type of morpheme that must be attached to another morpheme is called a BOUND MORPHEME. The morpheme that can stand alone is called a FREE MORPHEME.

1. Can you give some examples of bound morphemes?

   (un-. dis-, re-, mis-, -ing, -ed, -s, -es)

2. Have you ever heard these labeled differently?

   (Students may offer "affixes, suffixes, prefixes")

3. What are some of the functions of bound morphemes?

   (Show tense, negate, combine, show plurality, etc.)

Students might profit from some of the examples in Orwell's "Principles of Newspeak," which involves some rather interesting uses of bound and free morphemes and combinations.

If students ask about such plurals as "deer" refer to Francis, p. 190 for his discussion of the zero allomorph.

At this point, we would have to say that we still don't have enough information about the nature of language learning. Simply understanding the process of combining phonemes into morphemes is not understanding the ways in which the morphemes get their meaning in a language. The unanswered question now is how a morpheme like "un-" acquired the meaning that we use. Here, frankly, we move into an area of study that is much less settled than the study of phonemes and morphemes. Once the child hears and can produce the combinations of phonemes, how does he learn the referential function of language? How does he know that "Cup" means the dish from which he drinks? More specifically what happens within the individual when this "meaning" is

Sample Lecture, Con't.

learned. These are the questions we turn to now.

In the first unit studied this year, The Nature of Meaning in Language, you learned what meaning is and what meaning is not, but we didn't talk about the acquisition of meaning in the language learning process. There are a number of theories that attempt to explain the acquisition of linguistic meaning, but we won't try to survey them in this unit. Some have assumed that words call up mental images. In this kind of theory, when one hears the word "cow" he is supposed to visualize a cow mentally. This might happen in some cases; you could probably think of a number of words that call up some sort of image to you. The problem with these theories is rather obvious. What happens when the word has an abstract referent? How do you form a mental image of the abstraction, "happiness"? You might be able to visualize somebody being happy, but what does happiness itself look like? I think you can see the problems associated with this. Psycholinguists, for the most part have rejected this type of theory as a general explanation because there are so many exceptions. On the other hand, the psycholinguists have not yet agreed upon theories to replace these either.

The behavioral psychologists, notably Prof. B.F. Skinner, have avoided the problem of what happens within the nervous system, rejecting such matters as impossible to measure. These researchers have been more concerned with the measurement of stimuli and responses. A very oversimplified way of summarizing their work is to say that they measure the

Sample Lecture, Con't

stimuli going into the organism being studied and measure the responses that the organism makes to the stimuli. This kind of research has provided some insights into the behavior of organisms, but it does not tell us what happens within the organism that causes the responses that are made.

When we try to describe the processes going on within the nervous system or the biochemical system of the human being when he learns language, we are immediately faced with enormously technical research that is just in its earliest stages. At this point, there simply isn't much that we can use appropriately in this classroom; it's too technical and too speculative for our purposes. For now, anyway, we're going to have to be satisfied with the more external matters.

One explanation of the process of meaning acquisition has been suggested by Roger Brown. Most of our previous discussion of categorization is based primarily on his book, Words and Things. Now we will be applying these notions about categorization to the meaning of reference categories in language learning. Keep in mind the remarks I made in the first part of the unit about the linguistic world and the non-linguistic world. Our problem here is to try to understand something of the means by which the symbols and combinations of symbols in the linguistic world represent the referes of the non-linguistic world. Remember, too, that we are going to be looking at the language acquisition process in general; we will not be able to determine what happens internally when language is acquired.

Procedure:

Distribute copies of pp. 194-195 and 223-224 (Ending with "of the greatest importance") of Roger Brown's Words & Things to students. Allow time for reading.

Sample Discussion: The Original Word Game

1. What does Brown mean by "first language learning?"

   (The language the child learns first; this would usually but not necessarily be the child's native language.)

2. Review the functions of the tutor as Brown describes them.

   (Names things in accordance with the semantic custom of his community.
   Checks the accuracy of the player's attempts to categorize.
   Corrects or reinforces the player's attempts.
   Might change the referent category, as in the case of "bow-wow")

3. Review the functions of the player.

   (Forms hypothesis or guesses about the categorical nature of the things named.
   Tests those hypothese, after noticing phonemic equivalence.
   Continues to make attempts at categorization until his utterances are judged as correct by the tutor.)

Note: Some of these questions might be rather difficult unless students have experiences with other MPEC units. The questions here are only starting points; students themselves might suggest numerous related questions. Students should be invited to provide illustrations of the Word Game. If students have younger brothers or sisters, they should be able to provide excellent examples. Students might also be asked to relate Brown's "Original Word Game" to other word games , particularly those on television. They should be asked to show similarities and differences.

4. What does Brown mean by the statement that the total list of such categories that a child must learn is a cognitive inventory of his culture?

   (The child or adult may not learn <u>all</u> the categories in the culture of which he is a member, but he will be able to think about only these categories for which he learns names.)

5. What is the importance of the statement "The bounds of verbal categories are set by human beings."?

   (This might be difficult for students to answer. They should at least be able to point out from this that the verbal categories are arbitrary and conventional)

6. If these categories are inventories of one's culture, and if the bounds are set by people, what kinds of inferences should be made about the languages of different cultures?

   (The verbal categories would differ from culture to culture.)

Sample Disc. Cont.

We've greatly oversimplified the cultural aspects of referent categories, but we will be getting back to these matters shortly.

In order to relate the Original Word Game to the process of categorization, I want you to read another short excerpt. As you read, keep in mind the distinctions between criterial and noncriterial attributes. You might also recall brown's statements about recognizing and producing phonemically equivalent and distinctive sounds.

Distribute Excerpt #2

Sample Discussion

1. What is meant here by "empty category"?

   (We have a name for a category, but we don't know what it is that we're naming.)

2. Why is it that you begin to see the meaning of "skroogle" as you read along?

   (There are a number of attributes suggested It's something that can be seen, one sees it when fishing, it waddles, it has a large bill, it eats minnows, it has white wings, etc.)

3. What heppens as you read each of the clues, remembering Brown's discussion of the Original Word Game?

   (The reader begins to guess or form hypotheses about the meaning of the word "skroogle." These are tested as you read along; each time a new clue is given, the reader determines whether it is consistent with the earlier guess.

4. In the fourth paragraph, it says that the skroogle has three eyes, and therefore can't be a duck; would you be justified in calling it a duck after reading only as far as the end of the second paragraph?

   (You would justified in guessing that it might be the same as a duck, but not in definitely saying that it is a duck. The second paragraph says nothing about the eyes, one might take it for granted that such an animal would have two eyes, but as we find out later, this would be a faulty assumption.)

HOW WE LEARN WHAT SPEECH SOUNDS MEAN

A rather silly story illustrates some interesting gacts about the way people learn language. The story is about a skroogle. You don't know what the word skroogle means, but don't worry about that; we're interested in how you learn its meaning. To you now "skroogle" is an empty category to be filled with meaning later. Notice how the word takes on meaning as you read the story.

I saw a skroogle yesterday! While I was fishing it waddled near me and put its big bill into the minnow bucket. It was eating some of my minnows, so I screamed, "Scram, you skroogle!" And all I saw after that were white wings flapping and webbed feet flopping down the shore and into the water. I don't think it quacked once as it swam away. I haven't seen that skroogle since.

What is a skroogle? The empty category made by the word is filled with attributes and you have a "picture" of a skroogle. The next time you read or hear the word, you recall the attributes, "large bill," "white wings", "webbed feet", and "eats fish", "says quack", "waddles", and the combination of sounds or written symbols that make up "skroogle" has meaning. All language is learned in much the same manner. For instance, when the infant first learns to say "ba" by imitation, he does not know what a "ba" is. But after hearing his parents say "ball" when a ball is around, he soon associates of a ball with his word "ba".

Now some of you will think that a skroogle is a duck. And to defend your position you might say that all of the attributes of the skroogle category fit the duck category: large bill, webbed feet, says quack, etc. So, you reason, a skroogle is a duck. But you'd be wrong. How many eyes does a duck have? Well, the skroogle invented for the story has three eyes. Sothat naturally eliminates skroogles from the duck category. You see, one danger of categorizing is closing the category before all of the attributes have been observed.

Excerpt #2

A baby makes the same "error" when he calls an orange a "ba". Adults often make similar mistakes. Prejudice is sometimes caused by people who think that if one has some attributes of a certain category he has all of the attributes of that category. That is why some people think that ALL Italians are good singers, ALL Norwegians like lefse, ALL jazz musicians wear dark glasses, or ALL teenagees "Rod" around in cars. They close the categories, Italian, Norwegian, jazz musician, and teenager., before they have observed enough of the attributes of these categories. After a category has been supplied with enough attributes for one situation, we tend to stop looking for new attributes, even when we are in a completely different situation. It is simpler for us to rely on past impressions rather than reopen the category to new observations. In this case we are like a baby calling an orange a "ba".

The skroogle story would have been just as illustrative if we would have called the bird a pligle, because it's obviously a make-up name. But aren't all of the names of things words that some one made up? Is there any reason why things must be called what we call it? Why can't we call the round objects the pitcher throws to the catcher a "whiffer" of a "horse hide" or a "crack ball"?. Why must we call it a baseball? The answer is, of course, we don't have to call it a baseball. Many people are just as well understood by their listeners when they call it a "horse hide" or a "Hard ball". Words are conventional. People talking together accept common meanings for convenience, but there is no law that says a word must mean what it does. There is no reason besides convention why a house is called a house and a horse is called a horse. The words look more alike than their referents do. "Whale" is a small word for a big animal and "micro-organism" is a big word for a little animal. Words do not resemble the things they represent -- except in the case of onomatopoeia where a word sounds like the thing it represents (buzz, coo, hum). Thus, when we claim to "call a spade a spade", we might be misleading ourselves. What is a spade? Is it a kind of shovel, is it a suit of cards; anyting its users agree on. If everyone in a speech community decided to use the word to refer to an article of clothing there isno linguistic law

that would prohibit it--so long as the speakers agreed on the meaning.

Teenagers should be as aware of that fact as anyone. Their slang is the use of words given uncommon meanings. Fink, fuz, rod, (you can supply words that are in vogue at the moment) are words that have been given "new" referents.

We sometimes think that our way of using words is the right one, that our way of looking at the world is the best way. But when we do we are simply ignorant of the facts. The majority of the world's population gets along quite well without knowing a single word of English. They don't call a spade a spade; they call it something else. But their "spade" is just as real as ours.

To summarize, when we first hear or read a word, it establishes an empty category. As we keep running across the word we add attributes that define the category. We sometimes close the category too soon, and that can lead to poor judgment. And sometimes we try to put things into a category that does not suit them.

Words have the meanings users accept. Words are not things. They simply stand for certain objects as a matter of convention. As we have seen, words can be very unlike their referents. In spite of the similarity between the words, house and horse, there is little similarity between the objects they represent. No language is better than all others, but each is "best" for the society it serves.

Sample Discussion Con't.

5. What conclusion is drawn from this?

   (That the testing of hypothese should be a continuous process that avoids prematurely closing the category.)

6. There are a few closed categories suggested here; can you think of any more?

   (Students should be able to suggest a number of social problems involving closed categories. They should be cautioned <u>not</u> to assume that the closed category caused the problems. With student examples, ask them to identify the attributes that are mistakenly used.)

7. Comparing these last two excerpts, would you say that the Original Word Game constitutes a <u>complete</u> analysis of all language learning situations?

   (It's difficult to say at this point, but the second excerpt involves a situation in which the tutor-player relationship is not easy to explain.)

Sample Lecture

All right, we'll return to this a little later.

The last aspect of the psychological bases of language that we will be considering in this unit is the perception of longer units than phonemes and morphemes. Earlier, we said that it isn't enough to simply understand the ways in which sound categories or phonemes are produced and perceived. One next must learn how these are combined into meaningful units or morphemes. It goes without saying that it still isn't enough to know the morphemes into which speech sounds are combined. One would have probably more problems uttering a random string of morphemes than a random string of phonemes. If you only make random sounds, people would simply wonder about your sanity. If you utter a random string of morphemes, you are going to be calling up referent

Sample Lecture Con't.

categories that mean something to listeners, and the confusion would be compounded greatly. Some mental illnesses, among them aphasia, involve a similar problem. Aphasics tend to lose track of word order, and some researchers have coined the term "word salad" to describe the jumbled discourse produced by aphasics.

Those of you who have younger brothers or sisters have noticed the process of meaning acquisition at the morphemic level. Those who have noticed this have also probably noticed the child's attempts to learn and use the patterns of morpheme combination. Not long after the child acquires the ability to learn individual morphemes, he also begins to pick up certain combinations from the speech of those he associates with, and he begins to try using these patterns. This brings us to the categorization of syntactic patterns; the child begins to combine morphemes into longer utterances, some will be sentences and some will be fragments.

Sample Discussion

Note:
Ask students to explain their examples, showing how meaning is gained by the combination of words into longer utterances.

1. Drawing from your own experience with younger brothers and sisters or with other young children, can you suggest some examples of short utternaces that might be characteristic of a child two or less?

   (What's that? Whazzat
   Give me. Gimme.
   My book.
   Go bye-bye.
   These are only a few of the examples that students might offer. Keep a record of the best examples for later discussion.)

2. Do you remember what the utterance "Want car" was called in the excerpt titled "How a Baby Learns to Talk?"

Sample Discussion Con't.

(Primal sentence frame, kernel sentence)

3. Why would a child begin to attempt to use such sentences?

   (When he learns that simply naming the object he wants might not be successful in getting someone to get it for him.)

4. Which of these utterances is more specific: "Car" or "Want car"?

   (The longer one)

5. Do you think you could make any valid generalizations from this?

   (We could generalize that as a child grows and learns more about the use of the language, he begins to use longer utterances that are more specific and provide more information.)

6. Could you go further and generalize that longer utterances are more specific?

   (No. They might be, but not necessarily.)

7. Could you think of any examples of sentences that are quite long but not specific? How about specific short sentences?

Sample Lecture

From the discussions so far, we could reasonably infer that a child learning the language will move in the direction of using longer utterances that become more complex as he matures. This does not mean, however, that he will use only long sentences as he matures. This would be a ridiculous assumption. You already realize that people who are skilled with the language will use a great variety of sentences, and these sentences will vary in length and complexity. The point is that the child gains the ability to use longer utterances. Whether he uses them or not is a matter of judgment.

The learning of syntactic patterns is a most

Sample Lecture Con't.

complex matter, and we can barely begin talking about it here. You have already learned most of the normal syntactic patterns by the time you've reached the tenth grade. The remarkable thing is that you learned most of these in highly informal and unstructured situations. In fact, you knew many, if not most, of these patterns before you even reached kindergarten. To use Brown's terminology once more, the Original Word Game that has gone on before you reached school age has already given you a wealth of ability to perceive and produce the syntactic structures of the language. The education you have received in school has made some of this more recognizable, has given you some terms that enable you to talk about the process of combining speech units, and hopefully has increased the skill with which you make these combinations. I doubt seriously that your formal education has given you very many new patterns to learn.

Note:

The remainder of the discussion of syntactic combinations has been omitted here because of the wide variations in student backgrounds with the study of grammar. Up to this point, the unit has only discussed the simplest of morpheme combinations. Drawing upon their previous experience with the study of grammar, students should be able to discuss more complex combinations, but the terms on which these discussions might be based will vary. If the students have been taught the junior high grammar units of the Project Enlgish curriculum, these more complex patterns can be discussed with a structural basis. In either case, they should be able to discuss morpheme combinations of greater complexity by using the terms they have previously learned. The length of time spent on such discussions is a mattter of your own discretion.

Sample Lecture Discussion

Thus far we've been discussing language learning predominantly in terms of the teacher and the learner, the tutor and the player. This has been a profitable way of approaching our subject, but I wonder if it hasn't limited our understandings a bit. I think we've over simplified in some ways.

Sample Discussion Questions

Leading questions may be necessary here.

1. Can you point out some of the limitations of using the tutor-player model in describing the way a child learns language?

   (The model emphasizes some of the individuals involved in the learning process but ignores, by large, the total context in which language acquisitions takes place, the culture and social systems to which the tutor and player belong.)

If you think about what we've been saying for a moment, I think you'll agree that we've been ignoring a major aspect of language learning. Perhaps we can get some idea of just how much we've been ignoring by listing some of the sources of or influences on the linguistic development of the child.

2. In actual situations, what kinds of tutors could be listed?

   (In getting responses to this question, the teacher should seek to elicit as wide a range of answers as is possible, suggesting possibilities with leading questions. Answers should be listed on the chalkboard and students can discuss the relative importance of these tutors.)

3. How much of his language is acquired through direct tutoring?

   (Comparatively, a rather small amount)

4. Given, then, that direct tutoring accounts for a relatively small portion of the child's language learning and that the "tutor" is really a great variety of people whom the child encounters, how might we modify our explanation of language learning?

Sample Discussion Con't.

(The child learns his language from his community, as a feature of a social system, a culture. The language used is a means of communication in interactions between members of a group.)

Leading questions will be necessary here. If students have difficulty in arriving at this answer the teacher might ask them the following questions: a) What would happen if a child were reared one year in England by English speaking people, the next in Africa by the Bantu, the next in China, etc.? b) What would happen if a Chinese infant, as Eskimo infant, a French infant, an English, etc., were all raised in a Wintu Indian village by Wintu parents? After discussion of these questions the teacher will want to lead students to conclude that the normal child sees and hears his native language being used almost constantly from the very beginnings of his life and that the tie between language and interactions is characteristic of even his earliest contacts with language. Having reached these conclusions, the student could again be presented with the original question.

Attention

Important Distinction

In summary, then, we can say that perhaps it would be better if we spoke of <u>tutorial situations or the</u> tutorial functions of the various members of a community, rather than tutors when we talk about language learning. We can see that there are many influences on a child's language behavior, and many involve far more than a 1 - to - 1 tutor-player relationship. The child in learning a language is becoming enculturated in acquiring both one of the products of his culture and a means for becoming a part of his culture. This leads me to a question which I think you might like to ask. What difference does all that we've been talking about make? Why should we concern ourselves with whether or not we ought to talk about tutors or turoial situations or functions? For that matter, why should we concern ourselves with language learning?

I think the articles I'm distributing now will give us a starting point from which we can begin the task of trying to answer these rather difficult questions.

Read to students or distribute copies of pp. 229-231 of Roger Brown's <u>Words and Things</u>.

Keep the questions in mind as you read the articles and we'll talk about them when you've finished. I think you'll find these readings fairly diffficult and therefore I'd recommend that you read carefully and slowly. If you're having problems don't hesitate to ask questions.

The teacher might make this an in-class reading assignment. In the event that the reading proves too difficult for a majority of the students the teacher might try an analysis or a paraphrase. The following questions might be used for discussion.

Discussion questions for the Brown and Lee excerpts See Page 39A.

1. What does Brown identify as the popular view of language and thought?

2. How does Whorf's view contrast with the popular view that Brown identifies?

3. What argument does Dorothy Lee make against the axiom that the "word is not the thing?"

4. What evidence does Mrs. Lee give to support her statement that if we wish to communicate cross-culturally, "we cannot assume as a matter of course that our classifications are the same for people of all cultures?" Do you think the evidence is sufficient to prove her point?

5. What ties does Mrs. Lee see between sumbols and value?

6. How does Mrs. Lee's discussion of the customs of the Bella Coola illustrate the connections between symbols and values.

7. Whorf states and Mrs. Lee suggests that a language molds the minds of infants and "determines the cognitive cast of adults." Do these ideas suggest to you reasons for studying language learning?

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The following are some of the points that might be developed from discussion of the Brown & Lee excerpt.

1. Whorf and Lee are concerned with the way in which language controls perception. If each language can lead to differing perceptions of "reality," what, then, is the "true" reality?

2. Developing a sense that our own language facilitates our making certain observations, but hinders us in making others is useful in that it enables us to recognize the validity of alternative views and makes us more tolerant of differences.

3. The symbols of our culture or our language acquire value by participating in situations, and our language is learned in situations, in a social system, in a culture. In learning our language then, we acquire a system of values as well as a means of categorizing our experience.

4. Our concern with the cultural dimension of language learning grows out of a concern with the emotive or connotative aspects of language. While the tutor player model does a good job of explaining simple reference and some emotional responses, if we wish to explain why men are willing to die for a word like "liberty", we need to consider the broader, cultural aspects of language learning.

Supplementary Unit Activities

1. Observation and description of a language learning situation.

   Students can choose from situations ranging from young brothers or sisters to senior high school students. Closely observing the situation under study, the student will write a description of the learning process involved. In projects with smaller children, students will find it helpful to use phonemic transcriptions. A guide for this is provided in Unit 1005, Grammatical Formations. Students who are studying a foreign language might find it interesting to describe similarities and differences between first and second language learning situations.

2. Limited research papers.

   Throughout the unit, there are many subjects that are only introduced. Any one of these might be explored in greater detail. The teacher should, however, exercise some control over the choice of topics, as many of these subjects might prove difficult for some sophomores. Major topics from which limited research papers might draw are:

   The Original Word Game
   Categorization in Social Problems
   Speech Production
   Speech Problems (Stuttering, Cleft Palate, etc.)
   Perception of Syntactic Patterns (drawing upon student's previous grammar experience)
   Language-Culture Relationships
   Animal Communication

FINAL EXAMINATION

Part One - Essay

Directions: To a person who asked for a definition of jazz, Louis Armstrong is said to have replied, "Man, when you got to ask what it is, you'll never get to know."

Explain Armstrong's answer in terms of the material you have studied in this unit. How does this answer relate to our discussions of the Original Word Game? What assumptions does Armstrong make about the ways in which one "gets to know" something?

Part Two - True-False

Directions: Mark each item true or false. For items marked false, write a brief explanation why it is false.

1. The Original Word Game is the most complete way of explaining the process of language learning.

   (False - It was listed as <u>one</u> way of explaining it; we don't know how complete the other ways might be.)

2. First language learning can be explained as a process of learning to categorize phonemes, morphemes, and syntactic patterns.

   (True)

3. A phone is the smallest unit of speech sounds which makes a difference.

   (False - This was the definition of a phoneme)

4. An infant begins babbling in his native language exclusively and immediately.

   (False - An infant's babbling might include sounds from any human language.)

5. The child's language behavior is reinforced only by his parents and family.

   (False - At least some researchers say that the infant reinforces himself as well at the babbling stage.)

6. If a child were taken completely away from parents, family, and all speakers of his native language, he would probably speak an early Hebrew tongue.

   (False - What little verbal behavior would result would net reflect any particular language. After the test, students might be told that this theory was at one time acceptable.)

7. From calss discussions throughout the unit, we might infer that the pre-school learning situation has many important implications for the child's later school performance.

   (True)

8. At this point, students of language and language learning cannot say with certainty that language exerts a controlling force on the culture in which it is spoken.

   (True)

9. At this point, we would have to say that language and culture are, at best, loosely related.

   (False - We can show a close relationship between language and culture; it is the direction of this relationship that is not conclusively known.)

10. In the process of categorization, an attribute is either always criterial or always non-criterial for the category in question.

    (False - The criteriality of attributes is a relative matter, depending on the situation in which the category is used. One attribute might be criterial in one situation and non-criterial in another.)

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