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LANGUAGE

in Relation to a Unified Theory of the Structure of Human Behavior

Kenneth L. Pike

Part I
Preliminary Edition

Summer Institute of Linguistics
Glendale, California

1954

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in Relation to a Unified Theory of the Structure of Human Behavior

by

Kenneth L. Pike

Professor of Linguistics in English and Anthropology
University of Michigan

Part I

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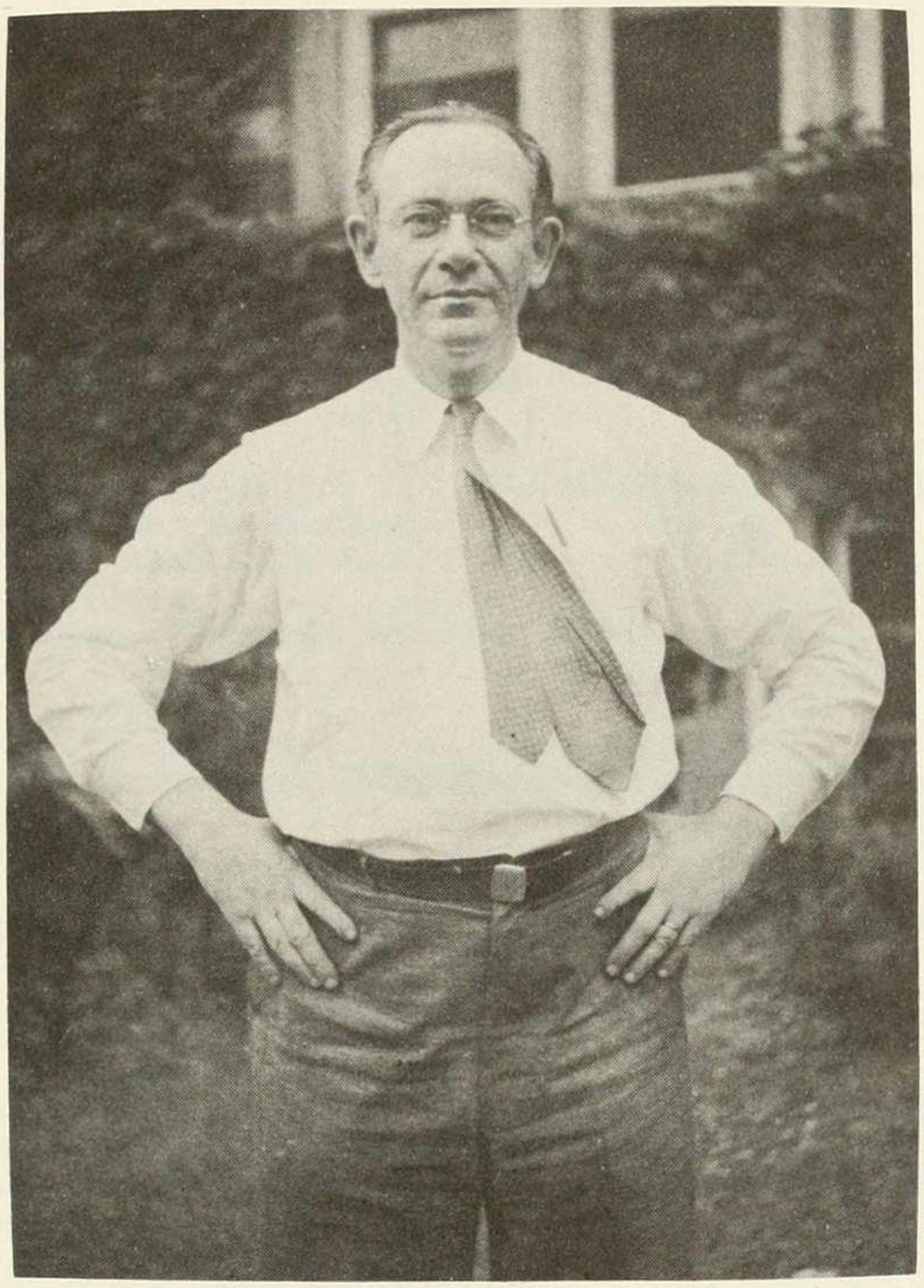

Trail blazer in the

study of sounds with reference to

'the inner configuration of the sound system of a

language, the intuitive "placing" of the sounds with

reference to one another,' and pioneer in the stating of

the relation of language to other cultural patterns of man.

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CHAPTER 1

LANGUAGE AS BEHAVIOR

1.1 An Illustration of the Need for a Unified Theory

In a certain party game people start by singing a stanza which begins Under the spreading chestnut tree... Then they repeat the stanza to the same tune but replace the word spreading with a quick gesture in which the arms are extended rapidly outward, leaving a vocal silence during the length of time which would otherwise have been filled by singing. On the next repetition the word spreading gives place to the gesture, as before, and in addition the syllable chest is omitted and the gap is filled with a gesture of thumping the chest. On the succeeding repetition the head is slapped instead of the syllable nut being uttered; in another round the arms may be extended upward as a gesture to replace tree. Finally, after further repetitions and replacements, there may be left only a few connecting words like the, and a sequence of gestures performed in unison to the original timing of the song.

This gesture song constitutes a single complex unit, a total experience which is perceived by the participants as beginning, as ending, and as constituting a unified whole--a single game. After it is finished a different unit of the party --the next game--may begin. Certainly the gesture-song game is in some way a single unit of activity--an event which must be studied as a cohesive set of actions.

Yet the structural analysis of the event as a single unit may be difficult or impossible under a fractionated approach to the analysis of behavior. If a language analyst has set up his tape recorder and captured the sounds emitted during the game, he can make good progress on analyzing and describing the first verse; it resolves itself into sentences, clauses, words, stems, affixes, vocal sounds, and so on. But for the second verse the language analyst, as such, is unable to 'make sense' out of the analysis; since language analysis by itself contains no techniques which provide ways of analyzing and describing bodily actions other than the articulating movements of the vocal apparatus, nor ways of symbolizing the relevant length of time elapsed during the gesture, nor a unified theory to allow for or explain the structural replacement of words by non-vocal movements, it cannot handle such data. By the time the language analyst comes to the last verse, which is almost all gestures and nonvocal thumping, he is able to find no organization in his remaining data--scattered words are spaced far apart, unconnected, unintegrated, unstructured.

Persons using theories and field techniques adequate for describing nonlinguistic behavior, but discontinuous with linguistic theory and practice, would, on the other hand, face problems complementary to those just described for the linguist. Starting with a moving picture record of the game, with supporting data, the sociologist or anthropologist could give an overall description of the social situation in which the game occurred, with its general character and content, and could in detail describe the gestures. Yet except for the general statements of the kind given in the first paragraph of this chapter, it would be difficult or impossible for him to give for the total event, as a unit, a unified description which--with no change of outlook or procedure--would simultaneously analyze and describe the nonlinguistic behavior as well as the smallest and most intricate elements of linguistic structure.

A musician, similarly, might give an adequate account of the musical elements of the first verse, and even record satisfactorily the first gap or two, but, by the time he had reached the almost total lack of vocalization at the end of the game, his record would be less satisfactory. If, furthermore, he did in some way manage to record the words, gestures, timing, and tune whenever present, these might be reported in reference to a theory which had not been correlated in detail with those linguistic concepts necessary to analyze the structure of the sentences, as the linguist has come to see that structure; in addition, these verbal and nonverbal elements probably would be labelled by terms which are different from and not correlated with those of linguistics.

In this chapter, therefore, it is suggested (1) that there is needed a theory which will not be discontinuous, and which will not cause a severe jar as one passes from nonverbal to verbal activity: there is needed a unified theory, a unified set of terms, and a unified methodology

which can start from any kind of complex human activity, with various sub-types of activity included, and analyze it without sharp theoretical or methodological discontinuities.

It is concluded (2) that language is behavior, i.e., a phase of human activity which must not be treated in essence as structurally divorced from the structure of nonverbal human activity. The activity of man constitutes a structural whole, in such a way that it cannot be subdivided into neat "parts" or "levels" or "compartments" with language in a behavioral compartment insulated in character, content, and organization from other behavior. Verbal and nonverbal activity is a unified whole, and theory and methodology should be organized or created to treat it as such.

Succeeding chapters in this book outline an initial attempt at the development of such a theory and procedure. First, however, the balance of this chapter illustrates further the fact that language must be treated as human behavior, as a phase of an integrated whole, by showing (1) that language behavior and nonlanguage behavior are fused in single events, and (2) that verbal and nonverbal elements may at times substitute structurally for one another in function.

1.2 Language Behavior and Non-Language Behavior Fused in Single Events

Since means of communication and description of events for archives are largely handled through the printed word, we tend to feel that, somehow, language stands apart from and outside of behavior and that the two go on simultaneously but independently. Such an impression may be heightened by experiences with radio (not television), where speech without visual contact with the actors may appear fairly adequate for giving a report of sports, news events, or for presenting a play; silent movies of the old type, and current wordless cartoons may heighten this impression. Yet in many events the visual record is by itself meaningless, and the auditory record is likewise unintelligible by itself; in such instances an analysis must embrace simultaneously both vocal and nonvocal activity.

1.21 Nonlanguage Reports Which Need a Language Supplement

Let us suppose, for example, that we are watching a moving picture record of an American wedding, and studying all of the movements of the participants except the movements involved in speech. Could we say that the description was significant, or relevant? Probably the participants, at least, would want to know that the clergyman had uttered in some legal way the phrase 'I pronounce you man and wife.' The wedding record must include this verbal component of the behavior. Similarly, if a pseudo-baptism ceremony were performed in such a way as to include all the normal activity except the verbal formula which says 'I baptise thee in the name of the Father, Son, and Holy Spirit', the event would presumably be without validity in a Baptist community--meaningless in terms of the normal expected response of that community to the regular ceremony. On the other hand, I have observed such a ceremony in a river out in the country, with no audience, where the proper words by the acceptable clergyman gave the immersion full community sanction.

Recently I attended a farewell banquet given to a class of departing students. Here, again, a report of that occasion would completely distort the function and structure of the event if it were described without reference to the fact that speeches were given. The banquet was not merely a dinner, but an occasion for certain kinds of things to be said within the matrix of a formal meal.

Many other occasions can be observed on which a report of nonverbal actions is meaningless unless it is accompanied by a report of some of the concomitant verbal activity. For example, play-by-play reports of a game would be inadequate without a report as to any decisions of the umpire which were verbally expressed (and not otherwise signalled to the officials or to the audience), with no report as to who is 'out', or who is ruled to have gone out of bounds (possibly in direct contradiction to the evidence that a moving picture record might give), or who has 'scored a touchdown' or has 'made a point' or, even, who has 'won'. Pronouncements as to such decisions must somehow be reflected in any adequate report. Similarly, one interested in foreign cultures would want to have information on the existence and nature of any incantations considered by the participants as essential, say, at planting or harvest time; or the presence and meaning of 'boos' and 'catcalls' or 'whistles' (meaning approval in USA, the opposite, I am told, in some European areas) following a vocal number during a concert; or the presence and meaning of a 'wolf whistle' in a picture of a street scene, and so on.

This last instance leads to the mention of an elaborate cultural situation in the Mazatec language of Mexico, where conversation, buying, selling, and bargaining is sometimes carried on entirely by means of whistles. Here there are

no known limits to the length or type of conversation which can be carried on by whistles without words (Cowan, 1948). Conversations may begin at a distance with whistles (rather than with shouts, as in our culture), and may be continued in words as the participants come closer together, or boys may be carrying on a conversation in quiet whistles so as not to disturb their elders who are having a regular conversation in the same room. The whistling would not ordinarily be called speech, so presumably in a fractionated approach to behavior it would have to be analyzed by nonlinguistic techniques. Such an approach would be impossible without overlapping on language matters, however, since the 'tune' whistled is merely the abstracted tones which are normally a part of the words of the language and which would have been used had the conversation been spoken instead of being whistled. Mazatec is a "tone language" with four pitch levels (high or low relative to the norm of the voice of the speaker at that moment), one of which accompanies each syllable of the spoken sentence, and these same pitches are retained without the consonants and vowels in the whistle speech. Hence in the analysis of the whistle speech the description of the structure of the pitch sequences must often parallel the analysis of the sequences of words in spoken speech--yet this is impossible if the theory and techniques of analyzing speech are discontinuous with the analysis of whistles.

1.22 Language Reports Which Need a Nonlanguage Supplement

Just as nonlanguage reports must often have language reports added, if they are to have significance and if they are to be analyzable, so language reports must often have nonlanguage reports given, or they too will be unintelligible.

If, for example, one has a tape recording of the word No!, with silence for a long period on either side, the incident in which it occurred would not be structurally significant; one needs to know, as well, through a moving picture or a verbal report about the incident, that a child has just reached for a fragile article on a table and his mother has called No! to him. Similarly, a tape recording of the phrase Why, Mommie? needs an accompanying verbal or pictographic record of the mother gesturing for the child to come, before the incident emerges as a significant behavioral entity.

Recently I heard two people talking, and during the conversation one of them said quietly, No thank you. This phrase did not fit culturally into the rest of the conversation; the total conversation as a unit therefore was meaningless--culturally unanalyzable in any way which would treat this bit of vocal material as an integrated part of the remainder--unless one is also told that I was listening to these two people while they were eating, and that the phrase No thank you was uttered as an aside to a waitress who, without a word, had held a plate of cakes over the shoulder of the man then talking.

Today, I was playing water polo. A tape recorder set at the pool would have recorded calls for attention, shouted directions, and cries of various kinds. That record, as a document of organized behavior, would fail to contain the data from which a significant record of the game as a coherent unit of behavior could be described. For that, the tape recorder would have needed supplementation by a movie camera as well. Similarly, a record at a basketball game would simultaneously, in hopeless confusion, have registered cheering, calls from the crowd, calls from one player to another, reports of the scorer, and the umpires' decisions. Only a simultaneous visual report, and structural data allowing the various speakers to be sorted out in terms of their function as spectators, officials, players, members of a cheering section, etc., would allow the unit as such to be described usefully for purposes of understanding the nature of that kind of game or the progress of that particular match.

Recently I recorded the following: I see a hat. See it Ted? May I have your attention, please---whistling---It is a great honor to welcome... The sequence was part of utterances by various speakers during a brief street program welcoming a celebrity who was passing through the town. Only in the light of the nonlinguistic facts would the verbal report make sense. Craning of necks, with comments and exclamations by the students; cheers and clapping upon the appearance of the University president; groans at continued presentation of speakers other than the guest of honor; Thank you from the guest's wife, as she received a corsage; interruption of the guest's speech by the striking of the big clock in the tower--and the modification of his speech to accommodate to that interruption; reference to a neighboring school and its football teams; ominous reference to the third world war in which university men were now engaged--these, and other vocal and nonvocal items, became intelligible only against the background of the whole behavioral incident and of a larger and more inclusive outlook than that of any unit of mere verbal behavior heard on that occasion.

Analysis of the linguistic phase of events, like the description of such a phase following its analysis, is also seen to be heavily and

essentially dependent upon its relation to non-language behavior. Probably at no time, for example, does the interdependence of language and nonlanguage behavior appear more strikingly to be interlocked than when one is trying to analyze a language which one does not understand, and to do so without written or translated documents and without an interpreter (i.e., with a 'monolingual approach'). Under these circumstances the analyst is compelled to correlate particular sequences of sounds (words, or sequences of words of unknown meaning) with the particular environment in which they are uttered and with the particular nonlanguage activity which is then going on. Well over a score of times (twice by necessity, for the lack of interpreters, and many more times in public and under laboratory conditions for demonstration purposes or to test the validity of my operational methods, in an environment where bias from translation by the informant is eliminated) I have taken the first steps in the analysis of various languages of Asia, Africa, Australia, New Guinea, Europe, and North America, by such a monolingual gesture approach without any translation help. In order to find the meanings of words or expressions without an interpreter it is certain that some of the nonverbal activity must also be observed--whether it be the gestures of pointing and the like, in special learning situations, or the common daily activity accompanying common speech activity in the community. Furthermore, one never completely outgrows this analytical necessity; no matter how long one studies a language, many of the meanings of new words which he meets (e.g., in a culture with a vocabulary being rapidly enlarged by new names for new technical processes) can only be determined by watching the new processes being named, or by obtaining directly or indirectly a report from some other person who has done so.

1.3 Verbal and Nonverbal Elements Substituting for One Another in Function

The preceding section has illustrated the concomitance and interdependence of language behavior with nonlanguage behavior in single events, but their interrelations are structurally much more intimate than such a statement can show. Language behavior and nonlanguage behavior are structurally so analogous that on some occasions certain of their parts are interchangeable as we have already seen in the illustration introducing this chapter--a game in which a sung word is replaced by a gesture. Now we wish to give a further illustration which will show that such incidents are part of everyday living--not just special party situations--and to emphasize that such substitutability must be interpreted as evidence that language behavior and nonlanguage behavior must be comprised of structures which are partly alike in principle, in order to allow for this interchangeability of parts. Here, indeed, there must be no discontinuity of analysis.

Let us assume that we observe successively the following five incidents:

Incident A:

John, walking down the street, sees Bill standing on the other side. He calls out: Howdy, come along with me?

Bill replies: No.

John says: Bye!

Incident B:

John, walking down the street, sees Bill standing on the other side. He calls out: Howdy, come along with me?

Bill says nothing, but shakes his head negatively.

John says: Bye!

Incident C:

John meets Bill, as in A and B. He waves a greeting, with elbow flexed up in the air, and open hand pivoting slightly at the wrist, but with no word uttered. He then 'crooks a finger' (forearm extended, palm upward, three fingers and thumb clasped lightly together, index finger extended and then bent, at the two end joints, toward the palm of the hand) to urge Bill to come with him.

Bill replies: No.

John then waves goodbye (arm extended, slightly bent at the elbow, forearm slightly raised, palm downward, fingers loosely extended, hand moves up and down with flexible wrist).

Incident D:

John meets Bill as in A, B, C. He waves a greeting and signals Bill to come, as in D.

Bill silently shakes his head negatively (rotating it slowly from side to side through a small arc).

John waves goodbye.

In each of these incidents there are several important parts: greeting, request, reply, sign off. These parts occur at FUNCTIONAL SPOTS crucial to the understanding of these particular incidents. Numerous options exist for filling these particular functional spots. For the greeting there might have been used: Howdy!; Hi!; Hello!; Look who's here!; or others. For the request there might have occurred: Come; Listen; What are you doing there?; You ought to have been with us last night; and innumerable

others. For the response there are: Yes; No; Tomorrow; and so on. For leave taking there are: Be seeing you; So long; Be good; Take care of yourself; and many more, all appropriate to the setting.

Bills' gesture of response in incident B, it should be noticed, becomes one of the CLASS OF ACTIVITIES APPROPRIATE to that functional spot, and as such the nonvocal response is integrated into the vocal system. The implications of such integration must not be ignored, nor must the integrations be treated as "exceptions," nor be by-passed by assuming that gesture is here just "functioning as language"; the implications go much deeper, pointing the way toward a unified theory of structure for all types of human behavior, in each of which there are crucial functional spots filled by their corresponding classes of activities.

In the last of the incidents, no vocalization was heard. Such an exchange is common in our culture between people who know each other intimately, either when they need to exchange semi-private signals in the presence of others (Investigate that noise and see what the children are up to. Shall I bring in the tea now? Hand me that hammer), or in solitude (a squeeze of the hand and a directed glance of the eyes: Look at and enjoy silently with me that gorgeous sunset).

In some other cultures, such gesture communication seems to be used between strangers more often than it is with us. One of my colleagues observed the following incident in a large Latin-American city: A poorly dressed man had been standing a long time in a queue at a post office window. Just as he got up to the window the official closed it and then came out of a door near the window. The man turned toward him, threw his hands out sideways, rotating the palms upward, while tossing the head back and up, with lifted eyebrows (i.e., How come, what now?). The official, also without a word, raised his hand, thumb downward, thumb and forefinger extended slightly apart, as if measuring half an inch (i.e., Just a little while, patience!).

In situations in which only one person is involved such substitutions may also occur. A man who hits his fingernail with a hammer or hurts himself in some other way, for example, may on occasion either silently, with a grimace, throw the hammer, or he may vocally exclaim, or he may merely draw in his breath sharply to produce a culturally specified kind of hissing sound without more violent reaction.

In thinking through a mechanical problem, one can use trial and error by actually placing two pieces together to see if they belong thus, or the action can be omitted and the person can, as he looks at them, say aloud to himself (or silently): Now let's see, if I put this piece there, and that one here, they would not fit.

Even the analysis of thinking, therefore, cannot in this broad structural sense be handled discontinuously from the analysis of the mechanical movements of problem solving: mechanical movements and thinking are structurally mixed together in events, not just haphazardly so. To use a chemical figure of speech, they form compound molecules which can be analyzed as structured; they are not mere physical mixtures.

From this point of view, we see that it is not enough that language behavior and overt physical activity be handled by one approach. All psychological processes, all internal structured responses to sensations, all of thinking and feeling, must also be considered as parts of human behavior which will become structurally intelligible only when a theory, a set of terms, and an analytical procedure are provided which deal simultaneously and without sharp discontinuities with all human overt and covert activitiy. Language is but one structured phase of that activity.

1.4 Bibliographical Comments on Chapter 1

One of the points of view suggested by this chapter--that language events and nonlanguage events may constitute structurally equivalent members of classes of events which may constitute interchangeable parts within larger unit events--has been anticipated by Sapir, without development of its structural implications: 'If one says to me "Lend me a dollar," I may hand over the money without a word or I may give it with an accompanying "Here it is" or I may say "I haven't got it" or "I'll give it to you tomorrow." Each of these responses is structurally equivalent, if one thinks of the larger behavior patterns' (1933, Selected Writings, p. 12; see also Hjelmslev, 1953, p. 66).

Sapir also treated language itself as behavior, though more specifically 'purely linguistic facts may be seen as specialized forms of symbolic behavior' (1929, Selected Writings, p. 163). For Kluckhohn, 'language is just one kind of cultural behavior' (1949, p. 148); similar opinions of various other authors are to be found in Kroeber and Kluckhohn (pp. 115-24); and in Levi-Strauss and others (1953, pp. 27-32). Compare also Zipf, 'speech is but a form of human behavior' (p. 7); and Malinowski, 'Language, in its primitive function, [is] to be regarded as a mode of action, rather than as a countersign of thought' (1923, p. 296; cf. also Weber, 1947-- a translation of earlier works--pp. 88, 94).

For a somewhat different approach to

language, note Morris, 'a language is a system of comsign-families' (1946, p. 36), with the prior statement that 'A sign which has the same signification to the organism which produces it that it has to other organisms stimulated by it will be called a comsign' (p. 33).

Some writers emphasize, as I have done here, the close relation of language to nonlanguage behavior. Thus Malinowski shows such interdependence in situations of the hunt, or of planting, fishing, and the like. Malinowski insists on the importance of 'context of situation' in the relationship between speech and activities such as hunting, fishing, planting (1923, pp. 306-316); J. R. Firth also emphasizes context of situation, but differs from Malinowski by pointing out that '"context of situation" is, however, more often used to refer to a scheme of general categories' (1952, p. 7), or to the 'actual verbal context' (1935, p. 51n) so that 'For linguistics, the pivotal or "focal" term of the context of situation is the actual verbal context' (1935, p. 51n; see also 1950, pp. 42-43); so that, for Robins, 'the cardinal principle of linguistics, at least in Great Britain, [is] that language must always, and in every analysis, be studied as a part of social process and social activity, and every utterance must be considered and understood within its context of situation. ... and it is contextual function alone that constitutes and guarantees linguistic meaning (1950, p. 91-92; see also p. 89, language as a 'part of social action').

In spite of the intimate linking of language and nonlanguage behavior in many large units of human activity, however, some workers have maintained 'that the line between linguistics and non-linguistics could be clearly drawn' (Voegelin, and Ray, in Levi-Strauss and others, 1953, p. 30).

Attempts to show pattern similarities between language and nonlanguage behavior, however, have so far been disappointing. Thus Kroeber and Kluckhohn say: 'What the "cultural" equivalent of phonemes, or the linguistic equivalent of "cultural traits," may be has not yet become apparent' (1952, p. 124). In the same year, for example, Voegelin and Harris seemed to imply that the attempt to find such equivalents was hopeless, since linguistic approaches were unique to language: 'It became clear that anthropologists and others working with languages had in their hands a tool [i.e. phonemics] which simplified the description of languages, and proved to be uniquely fitted to language [i.e., not applicable to nonlanguage activity], since all attempts to extend this phonemic tool to the analysis of culture have been in vain.' And: 'Like the phonemic method, so also the combinatorial method [i.e., descriptive techniques, such as morphemics, applied to grammatical analysis] proved to be uniquely fitted to the data of language, rather than to culture in general' (1952, p. 54).

Nevertheless, in that same year, also, two widely different studies appeared which made some progress in this direction. Birdwhistell, building on a considerable tradition of the study and symbolization of gesture and of other bodily movements, carried forward these studies and, under stimulus from Trager and Smith, pointed out numerous parallels in theory and technique between the study of such motions and the principles of linguistics, even though it stopped short of an integrated theory of the type for which we have felt the need. (A later study by Hall and Trager, 1953, is excessively compartmentalized, with an attempt at an a priori classification of systems of behavior, but actual behavior events--with all their integrated complexities--receive but scant attention.) The second study was one by Fries, on the English sentence; it was developed purely as a linguistic analysis of a body of mechanically recorded utterances, but as a matter of fact it made, in addition, a most important contribution to the study of the relationship between verbal structure and nonverbal events, by founding a classification of basic sentence types on linguistic data combined with nonverbal data--the kinds of responses, which included "action" responses (characteristic of type II) in contradistinction to "oral" responses (characteristic of type I) (p. 53). Compare, also, Hoijer: Language may no longer be viewed as something entirely distinct from other cultural systems but must rather be viewed as part of the whole and functionally related to it (in Kroeber, 1953, p. 554).

My own attitude toward the relation of language to nonlanguage behavior grew out of three kinds of experience: (1) When I was first learning Mixtec, of Mexico, by a monolingual approach (i.e., without an interpreter), I was forced in 1935 to consider language and other activity together. The next year at the Summer Institute of Linguistics I developed a method for demonstrating to students--many of whom could not be certain of finding interpreters in the areas to which they were heading--the way in which they could learn a language by gesture. Under such conditions, language, or "propositions," without reference to other activity became operationally meaningless. (2) In 1948 I began to devote all my research to a study of basic units of language structure in preparation for this present volume. Early in 1949 it appeared that a useful definition of each of these units had to include information concerning the distribution of these units in larger organized units. When, however, I dealt with the largest language units under attention, this principle necessitated the postulation of their distribution within similarly organized but larger

units, units of a nonlanguage type, if the elsewhere useful insistence on mentioning the distributional characteristics of the units was to be preserved. This at first seemed outside of my range of investigation until I suddenly noticed that in describing the formal characteristics of a certain document--a business letter--I had actually left the area of vocal matters which I had been studying, and was in something quite different, but an area in which the principles developed for vocal utterance were already serving adequately without my having noticed the change from the one area to the other. From this point onward I kept in view nonvocal activity in the development of the theory. (3) It was not until there came to my attention certain instances where language behavior and nonlanguage behavior were structurally interchangeable (§§1.1, 1.3, above), however, that I was fully convinced that a satisfactory theory of language must assuredly contain some reference to the structuring of nonvocal activity and to units comprised of vocal and nonvocal activity in single composite events.

CHAPTER 2

EMIC AND ETIC STANDPOINTS FOR THE DESCRIPTION OF BEHAVIOR

There are two basic standpoints from which a human observer can describe human behavior, each of them valuable for certain specific purposes. In the one, the ETIC* approach to the data, an author is primarily concerned with generalized statements about the data, such that he (a) classifies systematically all comparable data, of all cultures in the world, into a single system; (b) provides a set of criteria to classify any bit of such data; (c) organizes into types the elements so classified; (d) studies, identifies, and describes any newly found data in reference to this system which has been created by the analyst before studying the particular culture within which the new data have been found.

In contrast to the etic approach an EMIC** one is in essence valid for only one language (or one culture) at a time--or, more specifically, for only one minimum dialect at a time or for the relatively homogeneous and integrated behavior of people of one culture area or culturally defined class of people; it is an attempt to discover and to describe the pattern of that particular language or culture in reference to the way in which the various elements of that culture are related to each other in the functioning of that particular pattern, rather than an attempt to describe them in reference to a generalized classification derived in advance of the study of that particular culture.

Within an emic approach to the data, however, comparisons of individual emic patterns can be made after their emic analysis has been finished. Thus the emic analysis of small dialects (perhaps beginning with dialects of individuals) can first be made, and then these separate analyses may be compared so as to get an overall description of the structure of a multidialectal language. Yet in preparing this generalized but purely emic statement the minor characteristics of the individual emic systems must never be distorted or ignored in favor of a 'broad' pattern of some kind; to do so would be to depart to that extent from an emic description. An emic investigation begins as the study of one particular language or culture; and even a sweeping composite picture of them which purports to be rigidly emic must never distort or deliberately conceal such data for the sake of the kind of large classification which an etic approach so usefully gives us.

2.1 Characteristics of the Two Standpoints

The emic approach is a structural one, in which the investigator assumes that human behavior is patterned, with the patterned system itself, the units of that patterned system and the structural classes of such units all constituted by the actions and reactions of the members of that particular society (without them being aware of many of the units which they so build), not constituted by the action of the analyst merely to obtain constructs which can be "applied to" data to describe it. Thus the goal of the emic approach is to discover and describe that behavioral system with its structural units and structural classes of such units.

The etic approach is comprised of a complex of goals and procedures. (1) One of the component goals may be said to be nonstructural or classificatory*** in the sense that the linguist, in using this approach, devises logical categories of systems, classes, and units therein without attempting to make them reflect the structuring discoverable in particular individual languages. This "nonstructural" classification, furthermore, may be one of several types or combinations of types. Thus (a) it may start from any set of criteria selected systematically or arbitrarily by the analyst without reference to known emic systems as such or (b) the criteria may be applied to units selected from various emic systems of activity but classified by his logical criteria without reference to the emic systems from which the units were

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*A word coined here by utilizing the last part of the word phonetic.

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***The word 'comparative' as used by some anthropologists in discussing linguistics of this type --say Mead, 1952, p. 344--would be very useful here were it not for the fact that the phrase 'comparative linguistics' has a quite different usage already current in linguistic circles, in reference to comparing related languages with a view to reconstructing parent forms, etc.; the term 'cross-cultural' is not subject to this misunderstanding.

abstracted. Similarly, (c), the units of behavior so classified may be treated in reference to their physical characteristics only--i.e., ignoring, so far as is possible, the fact that these elements are abstracted from a system of human action and reaction or (d) the units of behavior, though classified without reference as such to the individual systems from which they were abstracted, may nevertheless be classified in reference to the fact that they were in fact abstracted from purposive human behavior, so that elements of meaning or purpose constitute one of the sets of criteria for such etic classification.

A second major goal of etic activity is the application, in the early stages of an emic investigation, of a prior etic classification of one of the preceding types to a particular language or cultural system. In this instance the etic approach is prestructural in that it is used specifically as a first approximation toward reaching an analysis of the emic structure of that language or cultural system. In such cases, the analyst chooses from among various possible etic general classifications that one which experience leads him to believe will allow him in the early stages of his analysis to come as close as possible to an emic result with the least effort; he rejects as inefficient any etic systematization of general knowledge which does not easily lend itself to this transfer. In this way, his first etic analysis of a cultural system is a prestructural one, a tentative emic approximation; this first approximation in etic terms is then refined, as a second etic approximation to the emic system, etc., until he arrives at an emic analysis, the analysis which seems to him to reflect the structural internal relationships of that cultural system.

One can, if one chooses, subdivide these various etic approaches, and give them separate technical labels. For our purposes, this is not desirable, since, in actual operation of analytical procedures, the various etic types constantly overlap, fuse, and change in one's attention, or move from one to another by imperceptible stages. The important observation, for our discussion here, is that they are all in contrast to the structural outlook of emic analysis. Whenever specific mention needs to be made to subvarieties of the etic approach, therefore, we shall do so by appropriate descriptive phrases in line with the kinds of components mentioned here.

An important epistemological question now confronts us: If we assume that all purposive human behavior is emically structured, how can we say that the linguist may achieve an etic classification? The answer is quite clear, and the implications of the answer will concern us many times in subsequent chapters. The linguist may produce either an emic analysis of a particular language system, or--say--a physical etic analysis of that same data; but in each of these instances the labelling of emic or etic concerns the relationship of the linguist's analysis to the internal structuring of the data as constituted by the actions of the members of that society; in each instance it is the actions of the members of the society which are focused on and being described either etically or emically. If, now, we turn our attention to the action of the linguist, himself, as a member of a scientific community, and attempt to analyze the units of his purposive behavior within that community, then, to be sure, an adequate description of his behavior must, according to this theory, be couched in emic terms and in reference to emic units of his activity--and one of the large emic units of activity engaged in by such a linguist would be 'the process of producing an etic analysis of a language,' whereas a contrasting emic unit of his activity would be 'the process of producing an emic analysis of a language.'

This solution to the difficulty is no mere quibble. By this method a great many perplexing problems can be handled within our basic theoretical framework, whereas without it the entire system of structural analysis would, I think, eventually collapse or lead to insoluble contradictions. In each of the next three chapters such questions will arise, under the guise of participating versus critical attitudes, lowering of the attention threshold, and so on.*

The penalty for ignoring the etic-emic distinction, and of attempting to utilize (without knowing it) an etic description when an emic one is needed, is best stated in the words of Sapir, who anticipated this position years ago:

> 'It is impossible to say what an individual is doing unless we have tacitly accepted the essentially arbitrary modes of interpretation that social tradition is constantly suggesting to us from the very moment of our birth. Let anyone who doubts this try the experiment of making a painstaking report [i.e. an etic one] of the actions of a group of natives engaged in some activity, say religious, to which he has not the cultural key [i.e. a knowledge of the emic system]. If he is a skillful writer, he may succeed in giving a picturesque account of what he sees and hears, or thinks he sees and hears, but the

*The reader may locate a number of these by watching for the occurrence of the term '(non-functional) hypostasis,' which has reference to an observer's focusing upon some unit of activity without being a full normal participant in that activity.

chances of his being able to give a relation of what happens, in terms that would be intelligible and acceptable to the natives themselves, are practically nil. He will be guilty of all manner of distortion; his emphasis will be constantly askew. He will find interesting what the natives take for granted as a casual kind of behavior worthy of no particular comment, and he will utterly fail to observe the crucial turning points in the course of action that give formal significance to the whole in the minds of those who do possess the key to its understanding '(1927, Selected Writings, 546-547).

2.11 Domestic vs. Alien Standpoints

An emic analytical standpoint, furthermore, might be called "internal" or "domestic" since it classifies behavior in reference to the system of behavior of which it is immediately a part; that is, in reference to the activities immediately preceding or immediately following the event under attention, and in reference to the various classes of comparable events or habits within that one particular culture. An etic analytical standpoint, on the contrary, might be called "external" or "alien," since for etic purposes the analyst stands "far enough away" from or "outside" of a particular culture to see its separate events, primarily in relation to their similarities and their differences, as compared to the events of other cultures, rather than in reference to the sequences of classes of events within that one particular culture.

2.12 Relation to Wholes

An etic approach can, by its techniques, deal with some one comparable characteristic of many languages or cultures without reference to the entire data from each of those cultures. An emic approach, however, should never in theory be completely satisfied with the analysis of even the smallest bit of data from a language until the entire language--and the entire culture --has been analyzed, since the emic analysis of the part depends upon its relation to the whole. In practice, however, a part may be considered to be satisfactorily analyzed emically if it is relatively small in comparison to the relatively large analyzed element of which it is a part, and in structural relation to which it has been thus analyzed, with the understanding that there remains a margin of error which may later need correction for particular purposes.

An emic approach must deal with particular events as parts of larger wholes to which they are related and from which they obtain their ultimate significance, whereas an etic approach may abstract events, for particular purposes, from their context or local system of events, in order to group them on a world-wide scale without essential reference to the structure of any one language or culture.

An illustration remote from human behavior may be helpful: in an emic approach, the analyst might describe the structural functioning of a particular car as a whole, and might include charts showing the parts of the whole car as they function in relation one to another; in an etic approach he might describe the elements one at a time as they are found in a stock room, where bolts, screws, rims, fenders and complex parts, such as generators and motors from various models and makes of cars, have been systematically 'filed' according to general criteria.

2.13 Physical Nature, Response, and Distribution

Oftentimes--though not essentially so for certain types of behavior--an etic analysis focuses attention exclusively upon the physical characteristics of an event as such, without reference to the response which that kind of action tends to elicit (i.e., without reference to its purpose, or meaning, or use), and without reference to the potential or actual places of occurrence of that event in relation to sequence of occurrence of other events.

In my view an emic approach, on the other hand, must of necessity, at all levels of the analysis, have reference directly or indirectly both to the physical characteristics of an event, and to its distributional characteristics as well; linguistic units, for example, must be studied in reference to their extralinguistic as well as their linguistic occurrences. On the one hand, the emic structures must not be divorced from the physical activities which manifest them (i.e., must not be resolved into nonmaterial systems or universals abstracted from actual behavior of some type), and, on the other hand, they must not be analytically divorced from their place in a sequence of events, both potential and actual. Emic units, that is to say, are manifested by physical events within a matrix of other physical events.

The physical events which must be kept in mind for an emic analysis of verbal materials, furthermore, are of at least two types, neither of which, in the view presented here, can be ignored at any level of language structure without ultimate repression of some relevant data, or distortion of the system being studied. These two types of events are (a) linguistic--i.e., verbal, and (b) extralinguistic--i.e., nonverbal. Every emic unit of language behavior must be

studied in reference to its distribution--but distribution in reference to verbal behavior, and distribution in reference to nonverbal cultural behavior. Within the study of the distribution of language units in nonverbal contexts is included the extremely important consideration of the nonverbal responses of individuals to speech addressed to them. Just as the verbal replies of a speaker help one determine meanings of elements of communication, so the nonverbal ones do likewise. To attempt to analyze or describe language without reference to its function in eliciting responses--verbal and nonverbal--is to ignore one of the crucial kinds of evidence which is essential--according to this view--if the emic structure of language is to be determined, whether one is dealing with the larger units of that structure, such as the sentence, or smaller ones, such as some of the emic units of the sound system.

This dependence can be in part concealed, to be sure, by delicate phrasing of the materials upon their presentation after the language structure has been analyzed. But this theory maintains that in the analysis there is tacit or explicit reference, whether concealed or unconcealed, to cultural distribution, nonverbal as well as verbal. If one is working through a second language, by interpretation, it is easy to succumb to the illusion that there is no such dependence, since one may appear to be using "words," only, to get data and to determine its function and structure; with a monolingual approach (cf. §1.4), the dependence directly upon nonverbal contexts is more easily seen. In either case, once the analyst notes his ultimate reliance upon cultural distribution of nonverbal as well as verbal types, he is ready to appreciate, in further detail, the insistence of Chapter 1 that a theory of language is needed which is not discontinuous with a theory of other phases of human activity.

2.14 Sameness

For etic research the criteria of sameness (or identity) of kinds of events are the elements systematically noted and provided as a scheme for all cultures by the analyst, on the basis of general experience, before beginning his emic analysis of the particular culture in hand. For emic purposes, the criteria of sameness in the phase of the structure under attention are determined afresh for each language or culture, in reference to sameness or difference of response to various kinds of activity.

Etic criteria, in this sense, have the appearance of absolutes, within the range of sensitivity of the measuring instrument (or of the expertness of the analyst); emic criteria savor more of relativity, with sameness of activity determined in reference to a particular system of activity.

2.15 Value of Standpoints

Both etic and emic approaches are of great value for special phases of behavioral analysis. The etic approach to behavior is of especial value, first, in giving to a beginning student a broad training as to the kinds of behavior occurring around the world, so that he may be the more prepared to recognize quickly the different kinds of events observed, and to help him see slight differences between similar events. Second, during this process he may obtain a technique and symbolism (say a phonetic alphabet) for recording the events of a culture. Third, even the specialist, coming from one culture to a sharply different one, has no other way to begin its analysis than by starting with a rough, tentative (and inaccurate) etic description of it. No matter how skilful an emicist he may be, he can complete his emic description only after the analysis is complete--not before --and that analysis must be begun by recording data etically in terms of his prior experience (systematic training, or unclassified knowledge gained in terms of his own culture). Fourth, in studies of the geographical occurrence or diffusion of single kinds of activity, or of a pre-selected list of activities within an area, the analyst may not choose (because of financial limitations, pressure of time, and so on), to make a complete emic study of each local culture or dialect; under such circumstances an etic comparison may be used--or, better, a widespread etic sampling of many local areas with additional intensive emic studies of a few strategically located areas.

The value of emic study is, first, that it leads to an understanding of the way in which a language or culture is constructed, not as a series of miscellaneous parts, but as a working whole. Second, it helps one to appreciate not only the culture or language as an ordered whole, but it helps one to understand the individual actors in such a life drama--their attitudes, motives, interests, responses, conflicts, and personality development. In addition, it provides the only basis upon which a predictive science of behavior can be expected to make some of its greatest progress, since even statistical predictive studies will in many instances ultimately prove invalid, except as they reflect samplings and classifications which are homogeneous--but homogeneity in behavior must for many of these purposes be emically defined. Later in the chapter (§2.6) we shall return to one phase of predictability of behavior.

2.16 Caution--Not a dichotomy

A caution needs to be given at this point: in many instances, an etic and an emic description may appear to be almost alike--so much so, in fact, that the unwary reader may say that there is "no difference," say, between the phonetic and phonemic descriptions of the system of sounds of a language, or that the difference is so slight as not to warrant the extra effort an emic description requires.

To be sure, much of the data is the same, and the general content looks much alike. Yet this is also true of the two separate pictures which go into a stereoscopic viewer; an untrained person usually sees them as identical, but the three-dimensional effect evoked by seeing simultaneously through the stereoscope the two views of the same scene--taken at the same time, under the same lighting conditions, but with viewpoints scant inches apart--makes this added perception startling indeed. And so it can be with the two viewpoints of etics and emics. Through the etic "lens" the analyst views the data in tacit reference to a perspective oriented to all comparable events (whether sounds, ceremonies, activities), of all peoples, of all parts of the earth; through the other lens, the emic one, he views the same events, at the same time, in the same context, in reference to a perspective oriented to the particular function of those particular events in that particular culture, as it and it alone is structured. The result is a kind of "tri-dimensional understanding" of human behavior instead of a "flat" etic one.

It must be further emphasized that etic and emic data do not constitute a rigid dichotomy of bits of data, but often present the same data from two points of view. Specifically, for example, the emic units of a language, once discovered by emic procedures, may be listed for comparative purposes with the similar emic units from other languages so studied. The moment that this has been done, however, the emic units have changed into etic units, since they are divorced from the context of the structure of the language from which they have come, and are viewed as generalized instances of abstract stereotypes, rather than as living parts of an actual sequence of behavior events within a particular culture. Similarly, if a person working in one dialect moves to a very similar neighboring dialect, his first transcription is an etic one, perforce, because he is alien to that dialect, but it may actually be very close to the final emic transcription which he will produce; many of his tentative etic units will turn out to be emic units as well.

We turn, now, to illustrations of differences in outlook on particular events where a camera recording of the physical event would not be enough--but where other data must also be used.

2.2 Illustrations of Purposive Emic Differences Within a Culture

Within a particular culture there are many events which on the surface appear to be similar or identical, but which function very differently. This difference often consists in the different purpose of the actors. This purpose is frequently obvious to the outside observer or other participants; at other times it is obscure both to the outside observer and to the participant. When the difference of purpose is easily seen, it is detected in terms of the kind of observable larger sequence of events within which the smaller event occurs (i.e., its distribution) --and in terms of the response which it immediately receives. When the purpose is temporarily hidden from the other participants, the choice of alternate responses may be delayed until after other events have made the purposive difference clear, or a response may be given which the participants may later judge to have been inappropriate.

In the United States Senate a camera and recorder on different occasions might register two speeches which were physically similar. The first, let us say, is intended to affect the attitude of listeners, such as to convince them of the necessity of the course of action being presented. The second is discussing the same course of action, with the same words, but without any such purpose. It is a filibuster designed not to affect that irrelevant issue which happens to provide the words, but is calculated so to delay the course of business as to force the speaker's opponents to give up the attempt to pass a measure unpalatable to him. Some of the immediate reactions to a filibuster (such as inattention by the audience) may be quite different from that of the same data given as part of a different address.

A partial small-scale parallel with such an instance would be the speaking of any pair of homophones such as pare, pair; rite, write; seal (animal, noun), seal (of wax, noun), seal (verb). Here, too, the outward visible form may be the same, whereas the words as a whole must be considered different because of the responses which they elicit from the hearers, and the kind of verbal sequences into which they enter.

Units of size intermediate between a filibuster and single words may occur which must be similarly differentiated. Note such items as mimicry, where a child is trying to learn to speak by repeating sentences after adults; the

homonymous repeated sentence is often inappropriate to normal conversation since the child may fail, for example, to change you to I, or to replace question with answer. A lie is homophonous with a parallel normal sentence, but must be considered different emically, in spite of the identity of their internal structures. Even the immediate response--and hence its apparent meaning--may be the same. In order to detect the essential difference between them, the observer must be prepared to notice reactions (say, a spanking) delayed for a much longer time. In lying, therefore, we have an illustration of an emic difference, where the natives themselves cannot immediately detect that difference--or it may go permanently undetected by the hearers. Here, then, there is some temporary or permanent indeterminacy of meaning.

Irony brings us a different type of homophony which includes, usually, the intention of having at least part of the audience to so detect it; if that purpose fails, the irony will be "lost on" the receiver of it--though it may cause the amusement of onlookers. Mimicry of the lisping character of someone's speech is similar to such irony--and quite different from the mimicry of an adult by a child learning to talk. An adult in learning a foreign language may be badly inhibited from adequate mimicry by reacting to his own learning process as if it were the kind of socially inacceptable mimicry rather than the other.

Nonverbal mimicry shows a similar patterning: a child utilizes small-scale implements to 'do like Daddy,' in raking the lawn, digging a hole,' or fishing. With his father gone from the scene, and the mimicry purpose removed, the child may not finish raking the lawn.

On an adult scale, the working activity may be quite similar, whether the regular workers or strike breakers are performing it, but the reaction to the first is one of normal community relations, whereas reaction to the second may include violent attempts by the strikers to interrupt the work of the strike breakers. The killing of a single fly by a Western adult might be an act of cleanliness, but by a Hindu might have implications of profound religious significance, because of their beliefs concerning the possibility of the reincarnation of human souls into animal bodies. Tea drinking at 4:30 in some parts of the U.S.A. would imply a somewhat formal social gathering; in Australia it often means little more than quenching one's thirst. In meetings of the United Nations, the circumstances (i.e. distribution) and purpose of activities affect the reaction of people--to seeing one of, e.g., the participants "walk out" as a political measure to indicate disapproval (rather than to go to the toilet).

In our culture there are, furthermore, specific legal procedures which are used in an attempt to differentiate between events which are physically similar but emically different, with sharply different cultural penalties: Was the man carrying a pistol when he robbed the house? Did the driver run through a red light when he hit the man? Was the violence premeditated or the result of sudden anger? Was the author of it insane or was he deliberately cruel? Was the prisoner really trying to escape, or did the guard misunderstand, or pretend to do so, or even stage the event under orders? Nonlegal activity similarly attempts to apply criteria to determine such matters: Is this explanation the real reason, or is it just an excuse to mask laziness or irresponsibility or viciousness? Was the plate really cracked?

In nonverbal activity as in verbal activity there may be temporary ambiguities which can only be resolved by a study of a larger context. For example: Do the people of Country X know the issues which lead to their activity and choose that activity deliberately, or are they following the lead of someone else blindly or under compulsion?

Perhaps the illustration of such emic differences best known to linguistic circles is one given by Sapir (1925, Selected Writings, p.34). A candle-blowing wh, though physically similar to the wh of which, why in some dialects of English is, nevertheless, 'entirely distinct' from it in the series of kinds of events to which it belongs. For both of them the lips are puckered up, and air is blown out of the mouth with a slight friction sound. In the first, the purpose is to blow out a candle, and the event is part of a series, such as 'going to bed'; in the second, the sound becomes part of a word, and the word becomes part of a sentence, and the sentence becomes part of a conversation.

An emic approach would treat as significantly different the preceding pairs of events. One kind of etic approach--one which ignored meaning or purpose--might treat them as nearly identical pairs. In between these two approaches would be a different etic classification of these emic types, listing them in relation to differential purpose, meaning, or response, but not in relation to the full systems from which they were abstracted.

2.3 Variants of Emic Units

Sapir says that

> 'Every typical human action has a certain range of variation and, properly speaking, no such reaction can be understood except as a series of variants distributed about a norm or type' (1925, Selected Writings, p. 34).

In the preceding section we illustrated events which were physically same, or approximately so, but emically different. Now we show how events may be physically different but emically same.

It proves impossible for a person to repeat any movement so that it is exactly duplicated. Delicate measuring instruments will show some variation, a "scatter" or "spread" of slight differences when a person tries to do so. Whether it be shaking the head to signal no, or moving the lips, tongue, and vocal cords to say no, or jumping out of the way to refuse to catch a ball --none of these movement types can be repeated without deviation; minor differences are certain to appear.

There will be such minor physical variants of any unit of purposeful activity. Etically, each repetition of such a unit may be considered to be distinct, within that variety of etic study which is looking for absolute physical differences. Emically, such a scatter of variation would be irrelevant.

Often, however, the physical variation between repetitions of the same emic event is much greater than the physiological characteristics of man impose on his activity. Although, in some instances, the variation may be so small that the eye cannot see it--nor the ear hear the resultant acoustic differences, for speech--the variation in other instances may be large enough for trained alien observers to notice it very clearly and easily, even while untrained native participants do not ordinarily notice it at all, or may fail to see it or hear it even when one attempts to point it out to them. Following the last sound in the phrase, Here is a cup, spoken in a matter-of-fact manner, for example, the lips sometimes remain closed; at other times they open slightly, allowing a puff of breath to escape. Such pronunciations of English are etically (here, absolutely) different but emically the same.

Any other kind of activity may have comparable variants. In hopscotch, for example, it is irrelevant to the progress of the game whether a child hops high on one foot, with the other wildly swinging, or whether the hop is low, with relatively steady opposite foot; relevant--emic --factors are rather the success in reaching the next square without stepping on a line or letting both feet touch ground, and so on.

Etic, non-emic differences occur elsewhere than in sheer repetition of emically same events: the variants may be caused by inevitable, minimal changes of movement accompanying the slurring of one emic movement into a following (or preceding) movement. Every movement is so modified. The movements of the tongue in forming s differ etically in missle from what the movements can be in forming s in task; starting from a position during the pronunciation of the i of missle, the tongue glides by degrees into movements which in part constitute s. The border between i and s cannot, in fact, be determined--but that problem must await discussion in §§ 3.15 and 8. The first part of the s is inevitably modified by the movements which produce the last part of the i; similarly, in task, the first part of s is modified by the end of a; likewise, s differs before l and k. To some extent, no matter how small (even if below the threshold of perception), every sound differs etically according to the sequences of comparable movements within which it occurs.

Every movement, including nonvocal ones, is so affected. The movements of the first hop of a child playing hopscotch differ considerably from the others. The first hop starts from a standing position, whereas the middle ones may have movements slurred together from the momentum of earlier movements, and the last hop into the center must (lest the child receive a penalty) have the movements checked from going too far and throwing the child off balance.

As with repeated movements, however, so with those in sequence, the observed difference between emically same movements may be considerably greater than is necessitated by the physiological mechanisms involved. Like the repeated types, also, the etic difference may be so great as to be easily noted by an alien observer even while the native actor, reacting emically, fails to see any difference between them. I clearly remember, for example, the surprise--almost incredulity--with which I first received the information that the two p sounds in paper were not the same--that a puff of breath followed the first one, but no breath, or a weak puff only, followed the second; it was probably two years before I heard the difference easily.

These types of etic differences occur simultaneously in sequences. Thus, every repetition of missle by itself finds the s different each time, and every repetition of past has each s different. This scatter of differences in repetition is in addition to the etic differences caused by (or accompanying) the differences in environment when, say, s slurs from or to i and l, a and k.

It should also be observed that the first p of paper differs not only in movement type but in movement sequence from the second. Whereas, perceptually, the second seems etically to be a "single" sound, the first may seem etically to be two--the p plus the puff.

The type of variant seen in sheer repetition may be called FREE; that resultant from or accompanying a slur into or from neighboring

movements, CONDITIONED; that from a sequence of movements acting in some way as a single unit, COMPLEX. Free, conditioned, and complex variants occur in all general types of behavior; the analyst must be prepared to find them at any stage in the analysis.

In addition to being simple or complex, variants may also be fused, such that a single etic segment is a fused composite of two emic segments; these types of variants will be discussed later (see, especially, Chapter 14 on fusion).

2.4 Differences in Etic Observers

In the alien reporting of observations, the human element brings in great differences. One observer may have much more etic training than another; one may have keener hearing of pitch differences, or of intensity, duration, rhythm, or timbre; or one may have a longer memory span than the other. The one observer may fix his attention on one set of etic details through accident, or intention, or training, and hence "see" and record them; the other may not notice these details, though watching the same event. Likewise, the one observer may be interested temporarily or permanently in one component of behavior and fail to report other components.

Each observer will also have some bias in terms of the behavior events most familiar to him--those which are emic in his own activity. These he tends to take as his point of departure, as his norms, so that cultural background may affect an etic report.

Adequate etic training lessens these differences a great deal, so that individual phonetic reports of the sounds of a language tend to be similar. Nevertheless, the differences in the etic reports of different observers frequently cause confusion.

In order to refer to certain etic types we may label as an INSTRUMENTAL etic report one which records details as absolute, i.e., as accurately as some particular measuring machine is capable of recording. A THRESHOLD etic report will be one which attempts to give differentiations as fine as the physiological limits of a particular individual--or, the average of a group of such individuals--permits. A PERCEPTUAL etic report would be the report of a particular observer at a particular time, reflecting within it the variables and idiosyncrasies of individual ability, training, and momentary focus of attention.

Emic reports of a particular phase or component of behavior of a particular culture should be much more uniform than etic ones, however, since the emic procedures are specifically designed to help any observer report the data from an internal structured standpoint.

2.5 Organization of Similar Etic Units Within Distinct Emic Systems

In §2.2 illustrations were given to show that items apparently (etically) alike could be structurally (emically) different, and in §2.3 it was pointed out that items apparently different could be structurally alike. Now we wish to carry one step further the insistence that structural likeness or difference is determined by and should be analytically related to an emically structured whole, a SYSTEM. The nature of the intricate convolutions of such a system will not emerge until later chapters; it is only the fact of such a relationship that is now to be demonstrated.

We will assume that a game constitutes a small cultural system or sub-system--somewhat analogous to a small dialect, or special style, or some language. Two games--say two card games--may be sufficiently similar that an untutored onlooker may not know which game is being played, even though he is vaguely aware that two such games are played in his community. The cards of the two games may look alike; the players may have similar seating arrangements; they may hold a similar number of cards in a similar fashion in their hands; they may in rotation put cards face down on the table; they may pick up groups of these cards after a certain number are down; a scorer may record some number at intervals; the cards may be re-dealt to the individuals periodically--these items and many others may all be etically very similar. Yet one game as a whole differs from the other, and any particular act in one of the games attains its significance only in relation to the total sequence of events constituting that game.

Recently I observed, as an alien, my first cricket match. In it there were many events to remind me of baseball. A pitcher (called a "bowler") hurled the ball; the batsman on occasion swung his bat at the ball, and sometimes hit it, and if he hit it he sometimes ran; fielders caught the ball in the air, or picked it from the ground, and returned it quickly to one of the players near the path of the runner; the players were organized into teams which changed places during the middle and end of an inning.

There were, to be sure, some differences in these activities: the bowler ran upwards of five to ten steps before throwing the ball, and then did so with a full overhand sweep of the arm, and a stiff elbow, instead of pitching with a snap of elbow and wrist; usually (all but once, on this occasion) he threw the ball on the ground, so that it reached the batter only on the bounce, instead of pitching it entirely through the air; the batsman stood relaxed, often making

little attempt to hit the ball forward or with any swing--but frequently just put his bat limply in front of the ball, so it glanced or bounced off it in any direction an enormous (from my alien viewpoint) number of times. An outfielder on one occasion threw the ball at the "stumps" (i.e. "home base," made of three sticks stuck vertically into the ground, with "bails"-- two small sticks--lying horizontally on top of them) instead of to the catcher; the innings were long--such that the last half of the last inning lasted four hours, even though only two thirds of the complement of ten players were out, instead of an entire game lasting two to three hours as in baseball; and so on.

Yet these visible differences fail to show, in themselves, the basic differences in strategy and sequence of events into which the particular events fitted. At the beginning of the game the fastest bowlers (upwards of eighty miles per hour) hurled the balls violently onto the playing field (called the "pitch") in front of the batsmen, in part of a deliberate attempt to injure its surface and the surface of the ball (as well as to get the ball past the batsman); this, in turn, was designed (so my hosts told me) to prepare for the slow bowlers, who would then hurl a spinning ball into the resultant depressions in the turf, which would impart to the ball an unpredictable bounce in addition to a curve imparted by the air as the roughened surface of the ball traveled through it; this in turn was designed to get the ball past the batsman so that it would bump the stumps, knock off the bails, and put the batsman out. Unlike baseball, with its relatively few tries allowed the batter, the cricket batsman can keep at his task indefinitely--say an entire day of a several day game. Thus in one inning of the particular match to which I have referred, two of the men made over one hundred runs each, since they did not have to hit the ball unless they felt it endangered their "wicket" (stumps plus bails), nor were they required to run even if they hit the ball; they ran only when they felt--after hitting the ball or letting it to past them from one to twenty times--it was safe to do so. In fact, the desire of the first batsman in a game is not so much to make runs as to maintain calm, and to spoil so many bowls that the bowlers will tire, lose control or speed, and allow later sharpshooting batsman to hit safely for runs. All this, in turn, contributes to the deliberate relaxed stance of a man setting himself for a grueling period of many minutes of constant attention to trick bounces, spins, and speed--in contrast to the baseball batter who has a much shorter period of opportunity, with fewer variables to consider (for example, the atmospheric condition, short of rain, in baseball, is seldom likely to have enough effect on the flight of the ball through the air to allow the baseball pitcher to utilize atmospheric changes sufficiently to interest the fans in their effect on the batter--but the contrary is true in cricket).

As the activity of the batsman "makes sense" only in relation to the whole system of the game, so a consonant, or a vowel sound, is relevant to communication only as it is related to the whole system of sounds of which it is a part. Within two languages, a pair of sounds which are so similar as to seem the same to an alien observer may nevertheless have entirely different places in the functional system in the respective languages in which they occur. It is conceivable, for example, that two languages might etically be comprised of lists of sounds which were perceptually almost identical, but with the sounds organized into emic systems which were very different. Let us suppose, for example,* that language A and language B each contain the following list of consonants:

p	t	k	K
p^h	t^h	k^h	
b	d	g	G
f	s		
v	z		

The first row of symbols here represents sounds characterized in their production by vocal movements which (among other things) close the oral cavity; during p the lips perform this movement; for t the tongue tip does so; for k this is accomplished by the top part of the tongue, and for K the closure is made by a part of the tongue farther back in the mouth. The p^h, t^h, k^h are the same as p, t, k with a slight audible puff of breath after the closure is released. The b, d, g, and G are also the same as the first row, except that the vocal cords are vibrating during their production. In f and s, movements are made in the same general direction in the mouth (except that for f the lower

*This material reflects one kind of illustration used in Sapir's "Sound Patterns in Language" (1925, reprinted in Selected Writings, pp. 35-40). This article is the pioneer in such a point of view. The serious student is urged to consult this article, which, in my opinion, has never been equalled for clarity of presentation of emic matters.

lip touches the upper teeth instead of the upper lip) and by the same parts of the mouth as for p and t respectively, but without quite fully stopping the air stream; v and z add vocal-cord vibration to f and s.

Now in language A the p^h is a member of the same emic sound unit as p; the p^h is an etic variant restricted to occurrence at the end phrases; similarly t^h is a variant of t, and k^h of k. No words in A can ever differ by these sounds alone. In language B, however, the two series are emically distinct. In language A, furthermore, the K is an etic variant of the emic unit which contains k; the back variety, K, occurs only preceding back vowels such as a and o (whereas the k precedes the front vowels i and e or precedes another consonant, or comes at the end of words); the G must be considered part of the emic sound unit which contains g, for a similar reason. In language B, on the contrary, the k and K constitute separate emes, with many distinct words differing only by the occurrence of one or the other of them.

In language A, the f, s, v, and z are all distinct emic sound units, but in language B the f and v are members of a single unit as are also s and z, since v and z are etic distributional variants which occur only between vowels, where f and s do not so occur.

The list of emic units for language A, then, follows, with one symbol representing each such unit:

Language A, ten emic units:

p	t	k
b	d	g
v	z	
f	s	

Language B, nine emic units:

p^h	t^h	k^h	
p	t	k	K
f	s		

If the etic variants with restricted distribution were added to these lists, but placed in parentheses close to the symbols which represent the units as a whole, the two systems would appear thus:

Language A

p	t	k(K)
(p^h)	(t^h)	(k^h)
b	d	g(G)
f	s	
v	z	

Language B

p^h	t^h	k^h	
p	t	k	K
(b)	(d)	(g)	(G)
(f, v)	(s, z)		

Of incalculable importance to the analysis of international and personal misunderstandings is the appreciation of the fact that not only sounds, grammar, games and overt activity can contain similar etic inventories of events arranged in different emic systems, but that thinking processes also may be similarly different in so far as these processes utilize words whose meanings are subject to a comparable kind of structuring, and in so far as basic epistomological attitudes, emotional outlook and moral character is also so structured. People of one nation (or class of society, etc.) may sometimes appear to another to be "illogical" or "stupid" or "incomprehensible" simply because the observer is over a long period of time taking an alien standpoint from which to view their activity, instead of seeking to learn their emic patterns of overt and covert behavior.

Let us suppose, for example, that in a uniform culture area A that participants observe, either there or in neighboring cultures known to them, the following list of activities: (a) people drop ballots in boxes secretly, (b) people drop ballots openly, (c) only one list of candidates is presented to them, (d) several lists of candidates are presented to them, (e) people receive cultural penalties if they do not vote for the party in power, (f) many rebels to the policies of the ruling group are executed by the government without trial, (g) occasional members are lynched by mobs for real or supposed violation of its code; etc. Now let us suppose that culture A has an emic unit, a unit of covert activity by which they group into attention, as components of the total unit, the items (a), (d), and others unamed but not listed here. Suppose, furthermore, that part of this emic unit consists in the activity of speaking the word democracy in reference to a culture containing these activities...

Now we assume some passage of time, and a change of activity within Culture A such that some of its members (Group A') act in such a way as to use the term democracy when they are pointing out activities (b), (c), (e), and (f), but to deny the use of the term in reference to any group in which (g) ever occurs. Several comments need to be made concerning this situation:

(1) For the Sub-Culture A' there is an emic unit of group activity and outlook which overlaps etically with an emic unit of Culture A: as a minimum, the etic overlap consists in the

articulatory movements needed to pronounce the word democracy; as a maximum it might happen to overlap in all but one minor point.

(2) To the alien observer likenesses may appear, as in baseball and cricket, but misunderstandings may go deep indeed.

(3) The analysis of meaning thus becomes a problem of the analysis of structured activity and can only be understood adequately in reference to a unified theory of behavior and an emic procedure of analysis.

(4) Emic units get their significance only in reference to sequences of activity and a system of such sequences; such distribution results in the combination of etic elements into emic units.

It follows, then, that slanted propaganda is in part effective because a deliberate presenting of etic elements within a temporarily artificial but new sequence can begin to change the emic alignment of the etic data. This result follows even when the new distributions are in clash with the old, or even if the sentences of A' in which they occur are deliberate lies. (A related mechanism is of necessity and quite legitimately used by scientiests, translators, philosophers and housewives to discuss new ideas with old terms--cf. artillery, a word once used, among other things, for bow and arrow.) Slanted propaganda merely uses the same method for purposes which we disapprove of--for communicating deception instead of illumination.

(5) Persons from Culture A, in talking to those from Culture A', must now (a) employ an interpreter who will have to coin new words or phrases for his task, or (b) resist--ineffectively, perhaps--the extension of the old term to new contexts, arguing that it is not fair or right or truthful to do so, or (c) accept the new usage--and new meaning--himself. If he does the latter, he must either (a) replace the old emic unit with a new one covering the same activities as the old, which is the same except for the new vocal movements (a new term) to label it (say, freedom), or (b) he will otherwise be likely to end up by acting in the new culture pattern himself, that is by adopting the emic cultural structure of A'. The latter may be done either deliberately or unconsciously. Culture A may then say of him that he (a) has changed his ideas to those of Culture A', or (b) has had his mind 'washed,' or (c) has 'been converted' to Culture A'; Culture A', on the other hand, may say that he (a) has 'learned,' or perhaps (b) been 'converted' to their point of view, as regards this one item under discussion.

On a smaller scale, the same theory must deal with certain problems of individual communication or of child education. Each person to some extent constitutes a separate sub-culture, with his own emic organization. This follows inevitably from the assumption that emic units are units of activity--with the emic grouping of etic elements determined in part by the distribution of these etic elements in sequences --since one's experience constitutes such a sequence, and individual experience varies. For a common emic structure a common experience is therefore prerequisite, both verbal and nonverbal, in a unified whole. Since this never occurs for any two people, there are always problems of understanding.

After long married life together a well-adjusted couple does learn to communicate many emic attitudes with the faintest of etic hints. Between people who have less in common, or between disciplines in science, the achievement of mutual understanding becomes more difficult. In this book, for example, the term 'morphology' will refer to a phase of the structure of grammar--not to the structure of plants (biology) or of topographic features (geology).

We shall turn again to the structuring of meaning in a later chapter (17), after we have laid the groundwork by setting forth other phases of emic structure.

2.6 Predictability of Difficulties in Learning to React Emically to an Alien Emic System

Now that we have briefly discussed (§2.3) variants within emic units, and the relation of units to the whole system, we are in a position to turn to the possibility of predicting certain kinds of behavior.

Before I had seen cricket played--and before I knew anything about its rules--I attempted to teach baseball to persons who had played the former but not the latter. There were moments of frustration. What, for example, is there to be said in the heat of the game when the new batter hits ahead into the field but nonchalantly stands and is put out? An urgent Run, run, RUN! for some time continued to get only blank looks--or even a protest, Do I HAVE to run? to which one is tempted to reply, none too gently, Yes, run (that is what the game is made for, isn't it)!

Had I known cricket, however, the failure of the beginners to run on a short infield hit would not only have brought no surprise, but it would have been expected. In view of the fact that in cricket the competent batsman would normally wait for a safe hit before trying to run at all, I would have predicted that they would meet some difficulty in learning that for baseball they must run, since they would be given no other chance to try again before being put out,

and that this slim chance of success at reaching first base was the only chance they had.

It should follow, too, that a course designed to teach baseball to cricketeers should be drastically different, for best effect, from one designed to teach it to people who had played only chess. The skills learned by the cricketeer in catching the ball, in throwing it in from the field (as distinct from the 'bowling'), in shifting position in the field to meet the threat of different kinds of batsmen, or the shift under different pitchers--these and many other skills should be utilized and built on immediately. It would be folly to waste the time of such a man by making him undergo, in the same detail and in the same way, many of the first months of work in ball handling which the chess player would need. Of the etics of ball handling, and of watching the ball curve as it came toward him, he would already know a great deal--perhaps much more, in particular instances, than his baseball teacher.

On the other hand he would need specific training to prevent certain activities (such as throwing to hit home plate instead of to the catcher at the plate) and to dissociate certain activities, to break up certain sequences he had trained for in cricket, and to replace them with baseball sequences (e.g., hitting the ball to the infield, dropping the bat, and running). Much of this training is an emic re-training--teaching what not to do, the breaking up of old patterns and substituting new ones.

The reader is now in a position to see why it is that Fries (1945) insists that for every language situation, a newly designed textbook is necessary. A single "model," with translation for a variety of languages, will not do. A speaker of Spanish learning English needs one textbook; the Chinese speaker of English needs a very different textbook. Many of the specific details--the etics--of English, Spanish, and Chinese sounds, grammar, and vocabulary differ, so they may need to be taught as items. But, in addition (and, for language, this is perhaps even more difficult), the ways in which these items are grouped into emic units and sequences of emic units varies enough to necessitate separate treatment.

Nor is this all. Just as the cricketeer needs, for most rapid training, special instruction on some points of baseball, so the baseball player needs special training on the way to play cricket--but the rules are not necessarily reciprocal. It may be easy to crawl through a large funnel in one direction, but not in the other, and passing from one system to another may in part be analogous to that. Thus a textbook for teaching English to Spanish speakers may need to be quite different from one designed for teaching Spanish to English speakers.

The more one knows about two comparable but different systems of activity the easier it is to predict the kinds of difficulties which will face a learner. Where game A is complex, and game B simple, one can in general predict that it is easier to pass in one direction--toward the simple--than the other; the same is true for systems of activity, whether they be games or languages. More specifically, if two languages contain like emic units of sound, with like variants similarly distributed, there is relatively little difficulty in learning to pronounce those items intelligibly. If, however, in language A there are two emically separate sound units but in language B these same etic sounds are variants of a single emic unit, the speakers of B will have great difficulty in speaking A intelligibly at that point, but the reverse is not true. In English, for example, the first p of paper and the second are variants of a single emic sound unit, but differ etically in that the first is followed by a slight puff of breath, as we have stated before. English speakers, therefore, have considerable difficulty in learning to pronounce correctly the sounds of languages in which this difference is emic; note, for example, an illustration from Pame (of Mexico): *lakèdn? 'he will pull' in which no puff of breath follows k, but lakhèdn? 'they will pull.'

One may also predict that a native member of a culture will have various kinds of difficulties in analyzing his own behavior--in learning to notice free or conditioned variants in the physical form of an emic unit of his own speech, for example.

2.7 Bibliographical Comments on Chapter 2

2.71 On Etic versus Emic Viewpoints

By an earlier quotation (§2.1) and discussion we indicated that Sapir had anticipated the basic viewpoint of this chapter, that etic and emic viewpoints must be distinguished, and had specifically indicated for phonological systems the manner in which two languages might have identical etic systems but different emic ones (§2.5). I consider this latter study the source of the basic understanding in the linguistic field of the systematic relation of emic units, and of the nature of emic systems as such, although other authors had earlier reached some understanding of phonemic units, without the same depth of understanding of their relationship to a total emic system. (See Chapter 8 for further references to some of these other authors.)

*Data from Lorna Gibson, Summer Institute of Linguistics.

Two further quotations from Sapir may be of interest:

> 'External observations on the adjustment processes of individuals are often highly misleading as to their psychological significance. The usual treatment, for instance, of behavior tendencies known as radical and conservative must leave the genuine psychiatrist cold because he best realizes that the same types of behavior, judged externally, may have entirely distinct, even contradictory, meanings for different individuals' (Sapir, 1932, Selected Writings, 520). And, 'It is as though an observer from Mars, knowing nothing of the custom we call war, were intuitively led to confound a punishable murder with a thoroughly legal and noble act of killing in the course of battle' (Sapir, 1927, Selected Writings, p. 556; see, for a related theme developed in more detail, Pike, 1952b, p. 618).

Compare Kluckhohn, 'Two cultures could have almost identical inventories and still be extremely different' (p. 34), and 'the first responsibility of the anthropologist is to set down events as seen by the people he is studying' (pp. 299-300). For some examples where the same or approximately the same custom is functionally different in two cultures, see Benedict (Chapter 4, pp. 78-82).

The development of the relationship between phonetics and phonemics, especially since Sapir's important article appeared (1925), has been carried on by many workers in numerous parts of the world. Similarly, the study of morphemics has grown rapidly, with the principal stimulus, after Bloomfield (1933), being an article by Harris (1942). Further references to such matters will appear in following chapters.

For my own understanding of the phonemic principle I am indebted principally to Sapir (1925), Bloomfield (1933), Swadesh (1934, 1935a, 1937) and--to a much lesser extent--Trubetzkoy (1935). From Sapir, at a luncheon conference in Ann Arbor in 1937, I first heard language compared to a game--tennis. My own reasons for moving from language matters into the etic-emic cultural parallels of the present theory, however, came independently from problems met in linguistic theory, in the manner indicated in Chapter 1; it was not until the present theory was well advanced that I came across the anticipating quotations from Sapir which were given earlier in the present chapter. The emphasis on the necessity of separate textbooks for each situation in which a student is transferring from one emic language structure to another, on the other hand, comes from Fries (see especially 1945; it is also interesting to note that Fries has used a game--baseball--as an effective source of linguistic illustrations, 1952).

2.72 On the Nature of Structure

As regards the nature of emic units, and the nature of the systems containing them, the present volume is written from the point of view that emic systems and emic units of these systems are in some sense to be discovered by the analyst, not created by him (cf. Pike, 1947c, p. 64n). Etic systems, on the other hand, are assumed to be classifications created by the analyst--constructs for the handling of the comparative data, or for the handling of data before its emic ordering can be ascertained. Etic units, within this point of view, would vary: insofar as they approached the emic system and emic units of a system, they would be discovered within that data but to the extent that distortion occurred, they would be only provisional constructs of the analyst. In addition, it should be carefully noted that the etic-emic approach is useful--and necessary--whether or not one adopts this attitude toward the data. Practically, the conviction that there is an emic system to be discovered serves as a stimulus to refuse to accept too readily, as definitive description of a particular set of data, any pair of analyses which appear to be equally valid but contradictory. In such a situation the outlook given here would insist that, before accepting such a result, we try to find a third analysis which does violence to neither of the first two, but merges both analyses in a synthesis at a higher level--possibly by bringing in kinds of data or other levels of data which each of the earlier partial analyses rejected as nonrelevant to the immediate problem, but which now appear relevant.

On the other hand, this viewpoint specifically does not rule out alternate descriptions of a single system (especially if these purport to be partial descriptions, only), descriptions differing as to starting point, order of presentation of the relevant materials, and the like. Nor does it rule out alternate ways of symbolizing such a system, as a means of such alternate descriptions. It is precisely here that a much referred to (e.g., Haugan, 1949b, p. 57; Harris, 1951, p. 2) article by Chao (1933) is relevant. The title, "The Non-uniqueness of Phonemic Solutions of Phonetic Systems," has often been cited to indicate that systems are non-unique, with little if any attempt to summarize Chao's argument. The article needs re-studying, to see whether it is not in fact alternate possible symbolizations of the emic units which is the principal point made, rather than an implication that a language has no fixed system to be discovered. An intermediate viewpoint is that of Hockett, who insists that 'a language is what it is, it has the structure it has, whether studied and analyzed by a linguist or not' (1948, p. 271), and 'His purpose in analyzing a language is not

to create structure, but to determine the structure actually created by the speakers of the language' (p. 270); but who elsewhere indicates that 'The "phonemic structure" of a language is not to be equated to any [one] such phonemicization; rather it is the "least common denominator" of every possible sufficient phonemization' (1949, p. 38; also, more recently, Hockett, 1953, p. 165; compare Haugen, 1951, p. 222, versus Pike, 1947c, p. 61b). Compare, also, Hjelmselv, 'It is the aim of linguistic theory to test, on what seems a particularly inviting object, the thesis that there is a system underlying the process--a constant underlying the fluctuation' (1953, p. 5); it 'searches for the specific structure of language' (p. 4), with the 'correct' solution identified by various criteria (pp.10-11); compare Hjelmselv: 'If it is true that language is a social institution, existing outside of and independently of the individuals...' 1936, p. 49.

Our point of view in reference to the nature of linguistic structure is in general opposed to that of Harris:

> 'it therefore does not matter for basic descriptive method whether the system for a particular language is so devised as to have the least number of elements (e.g. phonemes), or the least number of statements about them, or the greatest over-all compactness, etc. These formulations differ not linguistically but logically. They differ not in validity but in their usefulness for one purpose or another (e.g. for teaching the language, for describing its structure, for comparing it with genetically related languages)' (1951, p. 9n, italics added; see Hockett's criticism of this viewpoint, 1952, p. 98).

Yet we are in agreement with Harris 'The fact that the determination of elements is relative to the other elements of the language means that all such determining is performed for each language independently' (1951, p. 8n, and see p. 9). Trager and Smith, on the other hand, listen to their English data with an a priori bias in favor of a particular analysis--i.e., 'careful observation and analysis have been made chiefly for American, Canadian, and Southern British speakers, but all the regional proveniences mentioned [including, previously mentioned, New Zealanders, Australians, Scotch speakers, and South Africans] have been heard with the analytical frame of reference in mind' and 'By extrapolation it is stated to be the analysis for the total pattern of all the dialects' (1951, p. 9). Such an ubiquitous frame of reference and set of conclusions can be clearly seen to constitute, within the present theory, some kind of quasi-etic system, rather than a series of specific emic analyses for the various systems; for a penetrating review of this work, suggesting that it 'seems likely' that they may be using 'a sort of map grid for the arbitrary demarcation of other dialects' see O'Conner (1951, p. 43)--a review seen by Trager, however, as 'denunciatory and uncomprehending' (1952, p. 21).

For the viewpoint of another linguist who, like Harris, assumes that emic units are abstracted constructs, only, compare Firth: 'Our schematic constructs...have no ontological status and we do not project them as having being or existence. They are neither immanent nor transcendent, but just language turned back on itself' (1950, p. 42). Compare Twaddell 'A phoneme, accordingly, does not occur; it "exists" in the somewhat peculiar sense of existence that a brother, qua brother, "exists"--as a term of a relation' (1935, p. 49), and the term 'fiction' applied to it describes 'a relational, abstractional class, the sum of terms of differences' (1936a, p. 297). Note also Robins--'The grammarian must discover, but not impose, regularity in the structure of a language' (1950, p. 52). For a discussion of contrasting viewpoints of this type, labelled the "God's truth" and the "hocus-pocus" positions, see Householder (1952, p. 260).

For certain abstracted emic components--as against emic units--which within this theory are treated as created constructs rather than as discovered behavioral units, see §§ 7.321, 6.43, 18.

For an epistemologist's view of the problems of order and system, see Sinclair (1951, pp. 38-46, 60-61, 75). If I have succeeded in understanding him at this point, then the underlying reason why I was empirically forced to adapt the theory to allow for the emic analysis by one anlyst of the etic or emic activity of a second analyst was to avoid 'the epistemologist's fallacy' (above, § 2.1, and Sinclair, p. 41). For the problem of non-unique solutions, compare Sinclair, pp. 23-25, 171; and Whitehead (1925, pp. 4, 13).

2.73 On Extralinguistic Cultural Distribution as Relevant to the Emic Analysis of Language

We have already given references, in Chapter 1, for the relevance of 'context of situation' to language study. The point would not need to be discussed further, here, were it not for the fact that some linguists in this country are trying hard to eliminate or to reduce to a minimum such cultural references in certain phases of linguistic analysis. While insisting on the validity, in general, of distributional studies in the analysis of linguistic units in verbal contexts,

and even making it a key to their entire outlook, they fail to see that distribution of verbal elements in cultural but nonverbal contexts--and hence their analysis in reference to their distribution in relation to meaningful units whose meanings are in part determined by such cultural distribution--can also be structurally valid and procedurally essential at every level of the emic analysis. This oversight seems to be due to an assumption typical of our present linguistic climate: that rigid water-tight compartments or levels are esthetically satisfying, and provide the only valid scientific conclusions, even if they must be purchased at the price of concealing data which clearly indicate that such compartments and levels do in fact have interpenetrating parts. It is precisely at this point that certain residues of data, not fitting into such a compartmentalization, have forced the development of the present theory and the rejection of such an overly-compartmentalized outlook. The implications of this integrated approach will not appear clearly in detail until later sections--e.g., Chapter 15; but in the meantime we indicate certain of the sources of our conclusions cited earlier in this paragraph, even though the integration of some of these elements with the balance of the volume will have to be kept in abeyance until later chapters. Lest we be misunderstood, however, it should be mentioned that we have no objection to an "as if" procedure, in which the analyst temporarily and deliberately ignores all data--even relevant data--except that which comes centrally into a chosen circumscribed, compartmentalized area of study, provided that he does not then conceal the fact that this was an "as if" analysis and that the description is limited in validity by that initial selection, and provided that he does not then insist that such a particular limited selection of data is the only "respectable" or "scientific" one, as over against a different selection which allows for a wider view of relevent materials, and a synthesis of knowledge on a broader base.

For documentation of the current attitude as regards separation of phonological from grammatical levels of structure, note: 'I believe that the phonemes of a language should be analyzed without reference to syntax or morphology' (Moulton, 1947, p. 225n); also Hockett, 1942, p. 20; for a discussion of these and other items by Bloch, Smith, Trager, Wells, and Welmers, see Pike, 1947a, and 1952a. For emphasis on levels: 'Hill said that the history of linguistics has been characterized by sharper and sharper divisions of levels, each stage marking an advance' (in Levi-Strauss and others, 1953, p. 29); also Trager and Smith (1951, p. 81); or, more recently, Hall and Trager: 'we have emphasized... [also, that] culture integrates at various levels of complexity, and only by taking into account the nature of these levels, and keeping them strictly apart, can the analyst of culture hope to arrive at a clear picture of what he is dealing with' (1953, p. 57; italics added by me to point up the conflict between the ideas of integration, on the one hand, and elements strictly apart, on the other; this conflict between empirical interlocking and theoretical compartmentalization I am trying to resolve by treating with systems but with provision in the theory for their overlapping, interpenetration, etc., at various points).

Note, in addition, Harris (1951): 'The main research of descriptive linguistics, and the only relation which will be accepted as relevant in the present survey, is the distribution or arrangement within the flow of speech of some parts or features relatively to others. The present survey is thus explicitly limited to questions of distribution, i.e. of the freedom of occurrence of portions of an utterance relatively to each other. All terms and statements will be relative to this criterion' (p. 5; italics added by me, to point out that Harris' use of the term 'distribution' is in reference to verbal distribution, as in contrast to my usage of cultural, nonverbal distribution and of verbal distribution as well). Later (p. 7) in a footnote, the basic inadequacy of Harris' position is seen in the necessity for the word if in the following quotation: 'However, this differentiation of life and rife on the basis of meaning is only the linguist's and the layman's shortcut to a distributional differentiation. In principle, meaning need be involved only to the extent of determining what is repetition. If we know that life and rife are not entirely repetitions of each other, we will then discover that they differ in distribution (and hence in "meaning").' The difficulty here is the fact that the evidence that two utterances are or are not repetitions may in some instances come from cultural distribution, not from the verbal context, in any adequate test case--i.e., in a situation in which a monolingual approach is used, so that there can be no ultimate use of cultural, nonverbal distribution, disguised as verbal, through the use of an intermediate language known by both investigator and native speaker. In such a situation, the fact that there may be 'data about a hearer accepting an utterance or part of an utterance as a repetition' (Harris, p. 20), is likely to be nonverbal, and the use of this nonverbal element, like Harris' verbal affirmation, 'seems inescapable' (Harris, p. 20), and 'in addition to the data concerning sounds we require data about the hearer's response' (Harris, p. 20; italics added). The necessity for the rejection of Harris' basic assumption, then, becomes apparent on the evidence of his

own procedures which are 'inescapable', not just a 'shortcut'. For a similar unsuccessful attempt to reject the implications of one's own procedures in using meaning and cultural distribution, by labelling them as a shortcut, see Trager and Smith (1951, p. 54; for analysis of this material, see Pike 1952a, p. 116). For a further protest against Harris' rejection of extralinguistic cultural data, see McQuown (1952, pp. 496-97, 501, 503, 504). For a very careful argument that, by a rigid application of his techniques, Harris cannot obtain his first morpheme as a starting point, see Fowler (1952, pp. 505-08). Bloch, in a similar attempt to set up 'basic assumptions that underlie phonemics, ...without any mention of mind or meaning' (1948, p. 5), accomplishes that goal, it seems to me, by the simple--but irrelevant--expedient of using a synonym for that word. Thus, in setting up his Postulate 2, with a corollary which states that 'Some utterances contain auditory fractions that are the same' (p. 7), he admits that this corollary is 'crucial'--but then states that 'While we grant that this sameness is no doubt ultimately a matter of biosocial equivalence, we prefer to account for it here simply in terms of recurrent auditory fractions that are (by assumption) the same' (p. 8). Since the phrase 'biosocial equivalence' is footnoted to refer to an article by Hockett, and Hockett defines the phrase such that 'Two speech acts are BIOSOCIALLY EQUIVALENT if they are produced under similar conditions and act similarly as biosocial stimuli' (Hockett, 1942, p. 6), I can conclude only that the phrase is equivalent to or at least overlaps with the phrase 'have the same meaning'--and that Bloch, in admitting that 'ultimately' this is the basis of sameness has in fact by-passed the mention of meaning without by-passing the use of meaning. This conclusion is supported, in addition, by the statement that 'meaning, at least, is so obviously useful as a shortcut in the investigation of phonemic structure--one might almost say, so inescapable...' (p. 5).

If one attempts to take a compromise position between the use of no extralinguistic data (or the use of no meaning), and the use of a great deal of such extralinguistic data, one may try to restrict oneself to the use of a formula such that he will use just enough linguistic or extralinguistic informant reaction to establish whether elements are the "same" or "different," or are "repetitions" (see references to Harris, above). For example: 'MICROLINGUISTIC analysis proceeds without recourse to meaning except as DIFFERENTIAL MEANING. The informant is asked only whether items under consideration on various levels of analysis, from phones through sentences, are the same or different, but 'the consideration of WHO IS TALKING TO WHOM AND HOW THEY ARE INTERACTING (AND REACTING) IN TERMS OF THEIR COMMON CULTURAL EXPERIENCE...constitutes the METALINGUISTIC MEANING (or METAMEANING or, more simply, the MEANING[)] of the material, and this is 'left for the consideration of the analyst only after the linguistic system has been completely described' (Smith, in Castiglione, 1952, p. 59). This point of view seems to be a later development than the position in Trager and Smith (1951, p. 68), where in respect to phonemic transcription, establishing of words, constructions, intonation patterns etc., the authors state that 'It is emphasized that all this is done without the use of "meaning"' (a position evaluated in Pike 1952a, p. 116).

From the point of view of the theory of the present volume, several objections to Smith's statement (which can earlier be seen in Trager, 1949) should by now be easily seen by the reader: it over-compartmentalizes; it rejects the interaction and reacting of informants as legitimate data even while the "same or different" test is specifically one kind of such response; it assumes a bilingual analytical situation, whereas a test of the assumption in a monolingual environment or by a monolingual analytical procedure would have forced extralinguistic gestures --reactions and re-enactments of scenes--to be used in addition to those data purportedly to be admitted as legitimate; it implies that the linguist as such is not interested in language as it functions, i.e., as a communicating device, and cannot analyze the communication process as such--i.e., the content of the communication, as an integrated, interlocking part of the larger cultural patterns of the community. Two much more subtle difficulties, however, should also be pointed out.

The first of these difficulties is that the reaction of "same" or "different" by an informant is an exceedingly complex process (e.g., cf. §§ 7.321-22)--not the simple choice of a "yes" or "no" which the proponents of such a scheme might lead the unwary to suspect. Specifically, we ask: How does the informant know what level he is supposed to be responding to? Surely other linguists have received responses such as I have, where an informant would on occasion insist that homonymns such as English seal (e.g., on an envelope) and seal (animal) were "different"--which is precisely the response the linguist is after, when dealing with morphemes, but wrong, when dealing with significant sounds. Yet even more complex is the situation if one asks: Are the three sentences The seal is over there, The seal is over there, and The dog is over there, the same? When we are dealing with classes of words, and the structure of sentences, it is important that the informant state that all

three of these are the "same" (cf. Fries, 1952, p. 74n), but that in reference to the earlier goals mentioned, the seal and seal in one instance are the "same" and in another are "different." Smith, who in the quotation given above mentions levels of analysis, does not appear to give sufficient weight to the fact that, in order to operate with the procedure mentioned, he must be able either to use elaborate nonlinguistic gestures, in a monolingual test, or else be able to help the informant identify the level on which the analyst is working, by an elaborate gestural situation, or by some degree of specific linguistic training, either of which destroys the apparent simplicity of the procedure. This is a far cry from avoiding encroachment on the innate linguistic naïveté of the informant recommended by Bloomfield (1942), and from Bloomfield's insistence on the use of meaning in linguistic analysis (1943, p. 102, quoted in Pike, 1952a, p. 116n). For a sharp rejection of the criterion of "same" or "different," starting from an argument such as this one, see Bloch and Trager, 1942, pp. 38 and 40, but compare Hockett (1952, p. 96), Chao (1934, p. 379).

The second of the special difficulties with this attempt to avoid meaning while analyzing the grammatical units is that it commits the linguistic analyst to a dualistic view of language. If the linguist can in fact analyze the word man without any tacit reliance on the fact that it has, in relationship to the total language system, a specific meaning--more than just a differential one--then he has demonstrated that there is a dichotomy between form and meaning which is innate, deep, and far reaching in its implications. I suspect that carried to its logical extreme it would result in a variety of a mentalistic view of meaning which the authors would themselves repudiate if they saw its end point. In ordinary speech, like every one else, however, I frequently utilize statements based upon such an outlook. Nevertheless, in the present theory I am attempting to develop a point of view within which form and meaning must not be separated in theory; there are rather form-meaning composites concerning which we, for convenience, may on occasion discuss the form and meaning aspects as if they were separate, while taking pains to indicate that such an expedient is a distortion which must be corrected at proper intervals and in the relevant places in the discussion (cf. for example, conceptualized hypostasis in §§6.43, 7.321, 18). For the same reason, therefore, we reject the theory of signs of de Saussure (1931), and of Hjelmselv--who says that 'A "sign" functions, designates, denotes; a "sign," in contradistinction to a non-sign, is the bearer of a meaning' (1953, p. 27); our present theory would not allow us to say--when we are on guard, or consistent--that a linguistic item 'is the bearer of a meaning,' since there would be no available linguistic units to "bear" meanings, in view of the fact that there are only form-meaning composites. Compare, also, Bloomfield who states that 'In language, forms cannot be separated from their meanings' (1943, p. 102); compare also his 'fundamental assumption of linguistics' that 'In certain communities (speech-communities) some speech-utterances are alike as to form and meaning' (1933, p. 144; but compare an outdated form of this assumption--from a work in 1926--without direct mention of meaning as such, utilized by Bloch, 1948, pp. 7-8). For a theoretical rejection of form-meaning dualisms, see Firth, 1952, pp. 5-6; for an empirical demonstration of the necessity and usefulness of a composite linguistic-extralinguistic approach, see Fries, 1952, pp. 42-53, who makes his basic dichotomies of sentence types based in part on extralinguistic distribution. Note, further, that a dualism of form versus meaning is correlated with a dualism of verbal versus nonverbal behavior; and it is toward a unified theory of language and behavior which avoids such a dualism that this present volume is in part directed, as we stated in Chapter 1.

2.74 On Clash between Systems as a Source of Evidence or Assumptions Relevant to the Emic Analysis of Language

In physics, a great deal of information about the invisible structure of particles is obtained by bombarding them with other particles; changes in the target particles, in the bombarding particles, or in the production of new particles all contribute to a fuller understanding of the nature of these particles--and in some instances prove that the target particles do have a structure, though prior to the bombardment this fact may not have been known. This procedure in physics may serve as a useful analogy to help the reader see how it is that the coming together of two linguistic systems, or elements thereof, may give an observer an opportunity to learn something about both their structures. The utilization of the data obtained by seeing language systems "clash" as speakers of one language come into contact with speakers of a second language, is just as legitimate a source of data for the linguist as nuclear bombardment is for the physicist. It is this kind of material which served as the basis for the discussion of baseball versus cricket, and of the prediction of difficulties in language learning (§2.6).

For an excellent discussion of specific difficulties in pronunciation, in reference to language systems, see Polivanov (1931)--Japanese versus

Russian, Northern Chinese versus Russian, Russian versus Northern Chinese. For brief comments, note Rowe (1950, p. 140, English versus Inca), Sapir (1925, Selected Writings, p. 44, Nootka versus English), Swadesh (1934, p. 118), Marckwardt (1946, pp. 109, 111, Spanish versus English), Fries (1945, p. 16), Fries and Pike (1949, pp. 36-37), Nida (1950, p. 110), Jones (1950, pp. 36, 37, 38, 138), Harris (1951, p. 30n); a number of these emphasize that a person coming from one language to another will have difficulty if the second language has two somewhat similar phonemes in its system where the first has only one.

Perhaps the reader is now ready to go a further step with us, in granting that the difficulties of a student in a phonetics class room are, in some respects, similar to those which he faces in learning a second language: he is confronted with sounds which are "emically distinct"--but their emic nature is established relative to the phonetic system being dictated at that moment by the teacher, and by the teacher's arbitrary norms, rather than being established relative to a natural language. In principle, however, the clash of systems is in part the same (though the extralinguistic distribution is artificial, and limited to utilization of the sounds in the classroom, and the linguistic distribution is artificially limited to the drills, etc.); to whatever extent they can be adequately observed and controlled, these classroom data are as valid, in linguistics, as data obtained from the artificial bombardment of a target with fast-moving particles (in the "artificial" disintegration of atomic nuclei) are valid in relation to the data obtained by "natural" radioactivity. Difficulties encountered by students in the phonetic classroom have been used in some of my previous writings as essential elements in establishing the necessity for assuming that a language has a phonemic structure; I still know of no way to demonstrate this fact more effectively. Note Pike, 1947c, pp. 64-65 (and p. 160n), in reference to the difficulty in hearing the difference between the two stop sounds in paper, etc., as the source of a premise concerning conditioned variants. Note, also, a reaffirmation and amplification of this point of view in Fries and Pike (1949, p. 50), 'Evidence for the phonemic structure of a language is of two kinds: (1) phonetic and distributional data of the traditional kind; and (2) the observable reactions of native speakers as they attempt to write or analyze their own language or to speak a foreign language. If, as we believe, the second kind of evidence is actually the foundation on which postulates concerning the first kind must be built, then the two kinds should lead to similar or identical results, provided the phonemic system of the language is uniform.' Note also Sapir (1933, Selected Writings, pp. 48, 58), Pike (1947b, pp. 151-53, in reference to English diphthongs), Welmers (1950, p. 494).

The problem of learning to write one's own language may in part be considered a clash of systems (if the orthography is nonphonemic), or a class in phonetics (to the extent that one is learning to equate symbols and sounds). It should be seen, then, that the utilization of objective observations carefully made of persons learning to write must also be considered data which should receive the attention of the linguist --the more so when one realizes that this was the basic source from which Sapir got his whole outlook as to the fact that a language has a system of sounds, and from which basis he pioneered in showing that languages have contrastive patterns of sound, not merely different sounds. For the first reference to his discovery, see Sapir, 1921 (p. 58); for the pattern theory based on it, see Sapir, 1925 (Selected Writings, pp. 33-45); for a detailed account of the earlier experience, see 1933 (Selected Writings, pp. 46-60). For other arguments based on observable native reaction as they attempted to write their own languages, or other languages, see Pike, 1947b, p. 152, and Fries and Pike, 1949, pp. 30-31, 34.

In spite of these reasons, which seem to me very weighty, it is the fashion for linguists to reject evidence from such sources. Twaddell denies the validity of Sapir's orthographical data on the ground that it is merely evidence for eliciting 'a uniform response to different stimuli' (1935, pp. 11-13). William Smith objects to 'Pike's persistent use of non-phonetic criteria in phonemics' on the ground that it is 'unprovable speculation' (1950, p. 8). Hockett rejects 'Pike's non-phonetic criteria' in reference to phonemics, but suggests that they 'belong somewhere in the total task of linguistic analysis' (1950, p. 55). Bloch rejects 'non-phonetic evidence' (1950, p. 122), and states that 'no phonemic description is valid...if these [phonetic] qualities are not the sole basis on which it is built' (1950, p. 92). Hjelmslev states that 'no phoneme can be correctly defined except by linguistic criteria, i.e. by means of its function in the language. No extra-lingual criteria can be relevant' (1936, p. 49), and Fischer-Jørgensen states that 'the glossematic approach...does not take native reactions into account' (1945-49, p. 105).

Yet some linguists may be straining out a gnat but swallowing a camel, in that the test, utilized by them, of asking an informant whether items are "same" or "different" is valid only if one grants the general validity of the use of observable native reaction, of which the test "same" or "different" is one variety; they may

be rejecting a general principle while using a specific instance of it. That is to say, that the response "same" or "different" or its gestural equivalent is itself a reaction, a highly complex one, in reference to elements of the informant's own language, on various intricate phonological and grammatical levels, in response to an artificial request by the investigator, rather than the interaction developing normally between two language systems as their native speakers mingle, without thought in mind of linguistic analysis as such, but with the happy accident that the linguist is observing them.

Why, then, the reader will ask, has there been such strong objection to evidences based on observable native reaction, in general? One answer has already been implied earlier in the discussion--that the admission of these data seems to lead in the direction of integration of levels of analysis, rather than the compartmentalization which so many current authors favor.

But there are at least two other answers. The first of these is that informant reaction is not uniform in these situations. Out of, say, ten speakers of a particular language, possibly eight or nine of them will act as one's predictions indicate, but one or two of them may diverge from that expected course. This lack of consistency gives to the evidence an appearance of non-objectivity, of "private," subjective techniques of the analyst which cannot be checked by other observers, and casts doubt on the validity of the data. In reply, I would suggest that such a conclusion drawn from the data is a non sequitur. Rather, (a), it is quite possible to set up experiments objectively, so they can be duplicated by other observers; Marckwardt (1944, 1946) has made a start in this direction, in the problems of Spanish speakers using English nasals and sibilants. If we had a large mass of data of this type, carefully documented and experimentally controlled, the objectivity of this kind of data would be more apparent. Then, (b), the results may need to be expressed in statistical terms, or in terms of probability, to allow room for deviant responses (cf. Fries and Pike, 1949, p. 37)--a technique which must enter elsewhere, to some degree, when meaning is defined in part as elicited response but with the listener occasionally refusing to comply with requests or obey a command. In addition, (c), it should be emphasized that such data is to be used, in general, as source material for the setting up of basic postulates and procedures which are then to be rigorously followed in any particular language without any further use of such data, unless one meets evidence which leads one to suspect that, at some point in that language, the system is unstable (Fries and Pike, 1949), at which point further rigorous supplementary techniques need to be developed.

Another reason why the use of observable native reaction to clashing systems, and the like, is unacceptable to a number of workers is probably the fact that it appears to them to be a reliance upon the "feeling" of native speakers toward their own language, and that such feelings are subjective, "private," untestable, and an unwarranted intrusion of psychology or of a "mentalistic" approach into linguistics. Jones, for example, rejects the 'mentalistic view' 'that a phoneme is a single "abstract sound" or "sound image," which the speaker is capable of bringing to mind at will' (1950, p. 212). Trnka, however, uses 'linguistic consciousness' to confirm conclusions (1939, pp. 23-24), and, in regard to English, states that 'We must point out that [British] English speakers feel unmistakably the three long vowels to correspond to the short ones and this feeling of correspondence entitles us to the assumption that the correlation of quantity is represented in English' (1935, p. 187). Note, further, Sapir's use of such matters in his basic article: 'In most languages, what is felt by the speakers to be the "same" sound has perceptibly different forms as these conditions vary' (1925, Selected Writings p. 37); also: 'Once more, a naïve native's phonetic "ignorance" proved phonologically [i.e., emically] more accurate than the scientist's "knowledge" [i.e., etic knowledge]' (1933, Selected Writings, p. 56). Compare also Bazell, the phrase, '... without appeal to native linguistic instinct, the ultimate basis of our working hypotheses' (1948, p. 287, and compare p. 279).

As against items of this general type, Twaddell, in commenting on various definitions of the phoneme objects to explaining behavior in terms of "mind" since 'The linguistic processes of the "mind" as such are quite simply unobservable; and introspection about linguistic processes is notoriously a fire in a wooden stove' (1935, p. 9). Bloch and Trager state that 'The native speaker's feeling about sounds or about anything else is inaccessible to investigation by the techniques of linguistic science, and any appeal to it is a plain evasion of the linguist's proper function. The linguist is concerned solely with the facts of speech. The psychological correlates of these facts are undoubtedly important; but the linguist has no means--as a linguist--of analyzing them' (1942, p. 40). Chao, on the other hand, has suggested giving the feeling of native speaker 'due consideration' (1934, p. 384).

It is now important to note clearly the difference between an appeal to a "feeling" which is inaccessible to direct observation, as over against observable, testable, independently verifiable abilities or objective responses of language

speakers. One must not throw out the baby with the bath water; one must not reject the utilization of observable objective evidence just because attention to it may historically have developed in a 'mentalistic' context. Much of the objective data can be utilized as evidence of structure while avoiding many of the kinds of statements which in the past have proved to be inadequate. Even so, however, there occasionally may appear, in certain contexts, useful statements implying a structuring of some type within the speaker. Compare, for example, Bloch's statement in 1950 in reference to a 'cultural correlate of the linguistic structure' that 'The Japanese speaker's "feeling" for the number of syllables in a phrase is no doubt partly due to his knowledge of how the phrase is written in the native syllabary; but the syllabary, in turn, must reflect the speakers' naive structural analysis of their language' (p. 92; compare Haugan, 'Its [the syllable's] reality to the native speaker is pragmatically undeniable, at least in the languages with which I am familiar' (1949, pp. 280-81). Compare Twaddell's discussion of the degree of competence necessary for the native speaker to be able to count syllables, versus phonemes (1946, pp. 106-07). Compare, also, the way in which an informant with 'linguistic intelligence' was a help to Freeland (1951, p. iv); or the manner in which Harris and Welmers utilized the informant's 'reports that the words are foreign' (1942, p. 322), or a similar comment by Oftedal (1949, p. 267); Nida's use of informant reaction in reference to word division (1947, p. 140); or Sapir, with grammar 'defined as the sum total of formal economies intuitively recognized by the speakers of a language' (1933, Selected Writings, p. 9); or Trager and Smith, 'The remark that someone speaks "well" or "crudely" or "with a Brooklyn accent" is a datum' (1951, p. 83); or even the implications of psychological structuring in testing for mutual intelligibility between dialects (Hickerson, Turner, and Hickerson, 1952); or Preston and Voegelin, with the informant signalling at a halting place in text (1949, pp. 23-24); or Hockett, that 'ALL morphemic analysis is in a sense folk-analysis' (1950a, p. 84); or Bloomfield, in reference to native reaction to immediate constituents (1933, p. 161).

In sum, then, we may say that the linguist wishes to discover the structure of language behavior, but that since this behavior is a part of total human behavior, and obtains its structuring only in reference to that larger behavior field, and relative to the structural units of that larger field, the linguist must on occasion refer to that larger field in order to get access to that frame of reference within which the linguistic units obtain part of their definition. The linguist, then, should not hesitate to utilize any observable data which will help him discover the emic units of the language--whether that data be extra-linguistic, in actions simultaneous with speech, or resulting from speech, or eliciting speech; and he should be prepared to utilize any observable data of a verbal type, whether it be speech of the informants in normal cultural settings, or in special cultural settings which are abnormal due to intrusion of the linguist himself; or whether they consist of comments about his own speech (taken, of course, as data needing weighing and analysis, and not as a substitute for hard work or analysis by the informant--see Pike, 1947c, p. 160n, and Fries and Pike, 1949, p. 30); or about the speech of his neighbors of that same speech community; or about the speech of persons with a language foreign to him; or may include errors, successes, and comments in the process of trying to learn to speak a foreign language or phonetics in the classroom, and the like.

For a similar type of problem in reference to the analysis of nonverbal materials, note Nadel: 'Radcliffe-Brown, Malinowski, and many others have emphasized that we must not expect correct answers when questioning people about the reason for or the meaning of some cultural activity. But their answers are not altogether without value; though they are sources of error in one sense, in another they are themselves significant social facts, data in their own right, and so sources of knowledge' (1951, p. 37, and cf. pp. 39, 68).

. . . . . .

We would now like to be able to present a careful point-by-point and "logical" development of the theory with which we hope to meet the need, to some degree, for a unified theory of verbal and nonverbal human behavior. We meet a practical difficulty in attempting to do so, however: the theory postulates a system of behavior in which each element in part defines every other element so that no one element can be defined before the whole is vaguely seen, nor can the whole be seen before many components are partially known.

In order to get past this difficulty, it seems wisest to delay the more formal matters until Chapter 5, and in the meantime to immerse the reader in a discussion of some large unit of activity which can be viewed as a whole, and yet serve as an illustration of the way in which smaller parts of a unit are related to that total unit. For this purpose, we need an activity which combines as essential, prominent features both verbal and nonverbal elements, which is long enough and complex enough to include many of the most perplexing analytical problems,

which is short enough to be observed on numerous occasions and to be discussed as to its broad outlines and some of its details within the limits of a chapter, and which is sufficiently rigid in form or ceremonial to be repeatable in general type with recognizable recurring elements. As meeting these specifications we have chosen a church service for discussion in Chapter 3.

CHAPTER 3

THE STRUCTURE OF BEHAVIOR ILLUSTRATED

3.1 Glimpses of a Church Service

A few days ago* I attended the morning service of a young independent church of a rather informal evangelical type--a church which I had attended on numerous previous occasions. Each week as the congregation begins to arrive, the people entering the front door are met by one of the men of the church stationed there, are given a word of greeting, a handshake, and a partially printed, partially mimeographed program of bulletin containing a schedule of the activities for the week.

The early comers enter the auditorium, sit quietly in some pew, or talk to friends in tones low enough as not to disturb any Bible School class whose teacher may have held it too long.

With the start of the organ prelude a few minutes later, talking quiets down, or ceases. A song leader, standing by the pulpit, raises his arms to signal to people to rise as he leads them in singing the doxology to the accompaniment of the small pipe organ and (sometimes) the simultaneous playing of a piano. The doxology is followed by a brief prayer from the pastor, and a couple of hymns.

On this particular day, however, doxology and invocation were omitted, and an opening hymn followed immediately after the prelude, with the hymn, in turn, followed by a prayer and two further hymns. This last hymn was introduced: Now for another old hymn...more familiar. After all its verses had been sung, the chairman of the executive board of the church gave the announcements--in the absence of the pastor,--emphasizing certain items printed in the bulletin, and mentioning the number of people (children or adults) who had attended the Bible School classes during the preceding hour. He then announced the collection; the ushers came forward; he led in brief prayer; the ushers took up the offering, with a collection plate sent in from the outside aisle toward the receiving usher in the middle aisle past the people in the pew who put in their money or envelopes containing it; at the same time the middle-aisle usher started another plate, one row further back, toward the outside usher; and so on. While this was being done the organist was playing a hymn ("Tell me more," by Randolph).

The "order of service" or program for that meeting had so far listed "Hymn #14," "Prayer," "Hymn #3," "Hymn #81," "Announcements," "Offering," and "Choir"; but this time--a quite infrequent occurrence--no choir was present in spite of the listing, and the next item, "Hymn #131," was announced, with mention of the fact that no choir number could be sung that day because of so many choir members being ill.

A visiting speaker then preached the sermon. He requested--and received--considerable cooperative activity from the audience, as many of them turned to their Bibles to look up numerous references to which he referred in sequence. On the other hand, there was some simultaneous activity not directly related to the service or sermon--scattered coughs in the audience; a yawn; someone fidgeting with collar, glasses, ear, or hair; holding chin in hand; wetting of finger to turn a page; reading a Bible School paper;--and, muffled in the distance, but nevertheless intelligible during the quieter moments in the auditorium (during the first prayer, for example), the singing of children for Junior Church in a neighboring part of the building (Hear Christ Calling Come unto Me).

At the conclusion of the sermon the song leader led in "When I Survey the Wondrous Cross"--a hymn chosen so as to carry on something of the theme of the sermon. The speaker then pronounced a benediction. The "Choir Response," listed in the bulletin as following Sermon and Hymn, was by-passed, and the audience stood up to speak to friends or strangers and to leave the church, while the organist played a postlude, consisting of a repetition of the music of the last song sung.

3.2 Segments and Waves of Activity

Within this church service there were crucial parts; the service, though a single continuum of constant physical activity, nevertheless was divided into significant major chunks of activity. Such a service is by no means describable,

*October, 1952.

emically, by the single smooth curve of a graph. Rather there are SEGMENTS of the sequence during which the purpose of the service is being vigorously forwarded by activity, and separated by moments where one type of significant activity slurs into the next segment of activity.

3.21 Nuclei of Segments

The sermon constituted the nucleus of one such segment (bordered at its beginning--on this particular day--by the introduction of the visiting speaker and at its end by his turning to the song leader to have him take over the direction of the service). Each hymn, likewise, was a segment (introduced by the song leader and closed by his gesture). The prayers, offering, and period of announcements similarly constituted major segments of the service.

Within the larger segments which divide the service into its major parts, smaller segments may be observed. Within a hymn, for example, there are stanzas; within the sermon there is usually an introduction, three or four principal sections, and a conclusion; within the period of announcements, each announcement constitutes a smaller segment. Then, noting smaller segments still, there are within an announcement, sentences, within the sentences are words, while within words are segments constituted of the sounds. Within the general activity of singing a hymn, there is for the individual singer the segment comprised of picking the hymnal from the rack off the back of the pew, the segment of opening the hymnal to the proper number, of standing up, of singing, of closing the book, of sitting down--and many more.

The nucleus of a movement sequence may often be identified as the point at which that movement reaches its culmination--its most rapid movement, or most extensive movement. In single sounds, for example, this may be seen as a peak or trough of movement, when the moving part of the mouth comes closest to closure (as at [i] in the sound sequence [aia]), or when it reaches its widest extension (at [a] in the sequence [iai]).

3.22 Borders of Etic Segments

One segment ends, and another begins, whenever there is an appreciable CHANGE in activity. The most apparent changes are seen when the actors differ. For the prelude it was the organist who was the prominent one advancing the emic course of the service--although an alien observer might have noticed, rather, people taking their seats in the pews, and have failed to see the activity of the organist, who was partly hidden behind the console. When the song leader stood up, and the congregation with him, a new segment (simultaneously etic and emic) began; when they sat down and the board chairman stood, a further segment got under way; the action of the ushers started the taking up of the offering; and the visiting preacher, taking his place behind the pulpit, initiated the sermon.

The change in a sequence of motions from one moving part of an actor to another moving part of his body likewise causes a break between segments, though these segments are usually small ones within the large segments. For pronouncing Samuel, for example, the front part of the tongue moves toward the upper gum while air forced out of the mouth from the lungs makes the noise [s]; when the vocal cords begin to vibrate and the tongue drops, a different segment, a vowel, is heard; when the lips close as the nasal passage is opened, a third segment-- [m] --is produced.

A change in the direction of movement of some body part will also institute a new segment, usually a small one. When the song leader moved his arm up, it indicated the crucial part of a beat; when he started it down and up again, that produced a further segment. Similarly there are small action segments as each of the people turn the pages of their hymnals, stand, sit down, look up, and so on, or sing [ai] (in which the tongue is low in the mouth for [a] and rises toward the top of the mouth for [i] at the end of the word).

3.23 Etic Segments as Waves of Activity

It is this process of changing actions and actors which gives to a behavior sequence a character of pulsations of activity. The nucleus of a new type of activity acts as the peak of a WAVE OF MOTION--and segments within segments are pulses within pulses which are added together to form complex waves of activity (analogous to the manner in which ripples can be superimposed upon a larger water wave).

The song leader's arm motion, for example, becomes part of a larger complex of activity which includes the motion of his eyes (to follow the book, the audience, and choir), of his head (to help emphasize important stresses, or turning to look at book, audience, choir), of his leg movements (in standing), of his lip movements (for [m,] [b], [p], [o]), tongue movements for [s], [t], [l], [i]); and of audience movements for looking, standing, vocalization, of pipe organist movements (of fingers, arms, feet, ankles, head, eyes); of ushers' movements (seating latecomers--or looking, walking, gesturing); and so on.

3.24 Markers of Emic Segments

Those segments which constitute significant, emic units in the service are often marked at either beginning or end--or both--by special forms of activity which signal to the participants (1) that crucial changes are coming, and (2) the nature of the next segment.

Most obvious of these markers are vocal activity. In one such service there were, (among others) the following*: 5/7 Let's begin this morning by singing the Doxology--we will stand. 5/8 Our heavenly Father, we come to Thee this morning... 5/10 ...in Jesus' name, Amen. 5/13.9 Turn now to number fifty-two. 5/16 Several announcements I would like to bring to your attention. 5/18.8 Now as you give of your offerings this morning... 5/24 Now at this time we'll hear from Brother F--. 5/24 It's a real joy to be with you this morning... 5/25 I want to read one verse of scripture this morning... 5/2/27 Shall we bow our heads; ...suggest a four-fold outline...; Finally we come back...; Next...; First of all...; ...to...for our closing thought; In closing I'd like to suggest...; That's the message for us today...; Shall we pray; We'll sing the first and the last verse; ...Amen.

In addition, certain nonverbal activities without verbal activity signalled some of these changes: the playing of the prelude; the gesture to stand; the raising of the arm ready to start people on the first note of a song; the passing of the offering plates as a signal to make individual offerings; the gesture to the choir to rise.

3.25 Indeterminacy of Segment Borders

In spite of the indication of segmental borders by change of activity or by verbal or nonverbal special signals, it is impossible to state exactly where one segment leaves off and another begins. The first reason for this indeterminacy is that the physical movements of a particular moving body part glide or slur from one to another, so that often at no one instant could one cut the continuum and say that the preceding segment ended and the following one began exactly at that point. In beating time, for example, the arm and hand movements often end in a loop perceptible to the eye, and not in a very sharp point. Similarly, there is no sharp physical line of demarcation between the first sound of [ai] (the [a]), and the second (the [i]).

Secondly, when the motion of two body parts produces a sequence of two segments, the motion of the first body part may not be finished before the second begins. This results in an overlap of segments, as when the movement of the lips, rounding for the first vowel of today, has begun before the tongue-tip releases from its position for the first [t]--or, at the notes of the organ, when the congregation begins to rise before the leader has finished his gesture to them. Anticipation of action, then, may be relevant to two motions of a single person or to overlapping motions of different people.

Thirdly, segmentation is often not sharp cut at its borders because, when numerous activities are going on simultaneously, they may be loosely integrated or integrated only in a much larger whole, or into units of different lengths. The actions of the organist's feet and fingers are designed to be in time with (i.e., to be segmentally integrated with) the gestures of the song leader--as are the vocal movements of the audience; yet if the audience is 'dragging' its singing motions are "out of phase" with those arm movements of the leader--they begin too late to be simultaneous with his, so that the border of any one complex segment is fuzzy.

Much less integrated are those movements of the audience which have no direct relation to the emic course of the service--their motions constituting whispering, fidgeting, looking around at neighbors, and the like.

Those vocal movements registered as the distant singing of junior church have no immediate emic integration with the regular service. Their movements must first be described in reference to the matrix of the junior service but treated as "noise" (the result of activity nonemic to the segments under immediate attention) insofar as senior service is concerned. Yet, in reference to the entire activity of the church as a whole, they would be highly relevant (emic) as components of the junior-senior systems coexisting at that moment. On this high level of focus, there is a very specific integration of segmental borders--junior church must not end more than a moment before senior church does, lest nondirected loud activity of the children constitute noise sufficient to disturb the senior service.

Highly integrated into the senior service was the choir number on another Sunday. Yet for certain phrases one melody was sung by some of the choir members, but a different melody with different timing by other members. Although the sequences of words were the same, and the members ended the song together, there were times when the two groups were--from the point of view of the verbal segments--out of phase, and hence it was not possible to show a

*Taken from recorded event no. 10; other numbers in the key refer to time and place in the mechanical recording.

single series of significant internal word segments simultaneously applicable to the choir number as a whole. Here, however, the lack of phase was deliberate, for artistic effect.

3.3 Focus and the Whole

Although the preceding paragraphs were not specifically designed to show that behavior structure is built like "wheels within wheels," very little can be said about the details of any complex behavior pattern without this fact being implicit in the description. The church service includes the singing of a hymn, the hymn a stanza, the stanza a line (or phrase), the line a word, the word a sound, and the sound is sung by a composite of articulatory movements; or the song leader attends the service, he leads the singing throughout, stands, gestures and sings for a particular song, lifts his arm for a particular note; his small motions are part of a larger series of motions which is part of a larger one, and so on.

Even the church service itself is a segment in a larger series. For the individual it is part of a series of activities of that particular day of worship, and of a weekly cycle of church activities. The Bulletin, itself, indicates this clearly: the bulletin for the day first referred to in this chapter has sections entitled Today, This Week, and Coming--i.e., a view beyond the immediate cycle, which would ultimately lead to a yearly one with regularly celebrated special days such as Easter. The section on This Week includes items for every evening--though the announced participants vary from choir members (rehearsal), to members of a committee (missionary program), to members of the church (business meeting). The section Today includes four simultaneous services for different age groups during church time, and a later jail service, youth groups, and prayer service.

Considered as a total single segment, the church service has fuzzy borders as its parts do. Whereas the song leader on one occasion stated, after the prelude, We will start our service by singing number..., and the audience was not completely quiet until then, there is printed on a number of the bulletins, just before the prelude, the injunction: Let the first note of the organ be a call to worship the Lord in quietness and reverence. Similarly, after the choir finishes singing a response following the benediction, people start moving and talking to their neighbors (in part as a deliberate attempt to be friendly to strangers); this shows that the service is finished--even though the organ postlude is being played during this time and in another sense is part of the service.

3.31 Hierarchical Structure

The indeterminacy of borders leaves impossible of solution the question: Exactly where does such and such a segment begin and end?--and forces us to set up theory and techniques that allow us to identify the nuclei of segments without prequisite rigid delineation of their end points. We assume that such etic segment centers will be constituted of the "peaks" or "troughs" of waves of activity.

Nevertheless, etic segmental identification leaves unsolved the question: What segments or segment sequences shall we consider to be wholes, from an emic point of view? Is the church service a whole? If so, how can the preaching of the sermon which is part of the whole service be itself a whole (even though it may seem obvious that it is such)? Or what if a sonnet is quoted in a sermon--is the sonnet not a whole? If, as a point of departure for a study, one decides as I do that sonnet, sermon, and church service are each in some way wholes, then one must conclude that there is in behavior a HIERARCHICAL STRUCTURE (which we referred to as wheels within wheels) in which smaller emic wholes may be viewed as parts of larger emic wholes, which in turn are parts of still larger ones--somewhat in the way in which on an old-type Dutch Cleanser can is a picture of a Dutch maiden holding in her hand a Dutch cleanser can on which is a picture of a Dutch maiden holding in her hand a can on which...

3.32 Focus and Participants

Now a person contemplating a church service or participating in it may have his attention vary a great deal. One kind of participant may be somewhat drowsy and be uninterested in the details, on which he does not focus with clear concentration at any point. When he has gone home after the service he has "gone to church" --but can give no coherent report on the songs sung, or the content of the sermon, or other detail--except possibly details not emic to the service itself, such as that Mr. X winked at him. For him, the service began and ended (perhaps to his relief), and was a vague whole.

A second participant--possibly the parent of the first--may have been highly attentive to the entire service, following carefully all its parts, and yet end the service with an appreciation of the service as a whole. He might even be heard to say, afterwards, Wasn't that an inspiring service, everything fitted so beautifully together and was helpful.

Later, however, the second participant might be discussing with a third the sermon heard that day--its content, purpose and

effectiveness. Under these circumstances he has lowered focus, by considering a shorter sequence of activity; his attention, in retrospect, has changed so that he is now considering the sermon as a unit. For him, at this point, the sermon is a whole.

The boundaries of the top level of FOCUS at any one time constitute in this way the essence of the boundaries of a whole. Focus can shift up (to include a larger time span) or down (to include a shorter one), and the "whole" shifts with it. This shift, for the second kind of participant mentioned, may occur during the service many times: at the beginning this focus is on the entire span of the service in anticipation of the whole; during it, his attention may lower, to focus on the singing of the choir number; he may temporarily shift focus up again, to feel, that the "preliminaries" are over, as he settles down for the sermon; and son on; then, after lowering focus to the sermon--or to a poem in the sermon--he may at the end raise focus to the whole service again, "picking up" the whole, to finish in fact that which he earlier felt by anticipation.

3.33 Lower Limits to Focus

There are lower limits beyond which the ordinary participant in a church service does not normally go in changing focus. If he does so, he has become an analyst, rather than a worshiper--or "critical" rather than "enjoying it." Possibly most observers will not react to many units of structure in the sermon as wholes other than the entire sermon itself; the chief exceptions are likely to be sporadic illustrations (especially an illustrative joke, which one may later recall as a unit without being able to specify the context--the larger immediate whole--from which it was drawn or the point it was intended to illustrate. Other observers, especially those who do some speaking themselves, may look for major structural breaks, the young preacher's rule-of-thumb, "introduction, conclusion, and three points well illustrated." Others may have private "pet dislikes," and notice, as wholes, an occasional grammatical infelicity, or noncurrent pronunciation.

3.34 Indeterminacy of Focus

The analysis of the structural wholes in behavior is therefore complicated by individual differences. What can be done, in the face of this indeterminacy of focus, to find "the" essential wholes within the behavior patterns of the church service?

In part we can never be certain, since any particular person may be acting analytically rather than participating in the purposes for which the service is intended--and this difference of purpose results in a different set of emic units, as the filibuster differed from a persuading talk in chapter 1.

3.35 Criteria for Closure

If, however, we assume that in order to demonstrate that a segment is emically a "whole" we need to do so only in reference to persons acting as actual participants--not in reference to critics, or pseudo-participants--then a usable though not precise criterion can be found.

This criterion consists of clues observable in the actions of the participants. These are clues which in some way, whether by nonverbal action or by direct statement, indicate that the church goers (as worshipers or in their capacity as regular attendants) consider that a large unit or a small one has begun, or has ended, or is in process. This, to be sure, still leaves room for great fluctuation in individual or group attention, but there is no avoiding this complication since a denial of such focus changes would be a rejection of vast amounts of the empirical data itself, which indicates that such variation actually occurs. In spite of such focus changes, however, cultural units of activity can be found; they begin (though fuzzily) and end (also fuzzily), but are nevertheless part of our experience.

That the church goers consider the church service to be a unit is seen, then, in the following kinds of stray remarks heard preceding, following, or during the service: Hurry, we'll be late to church. Has church begun yet? No, you're still on time. Shh! church has started. We will open our service by... Stop whispering, tell me after church is over. In closing... Did you go to church yesterday?

Even a young child sometimes recognizes these units. My young* son, two days ago, as he danced a little jig outside said: Church is ALL OVER. Once in a while, he has detected the ending of a church service with amazing skill; he will have been quiet, with not a word aloud throughout an hour's service, and then, less than a half second following the final prayer (so close that I can hear no pause whatever between the preacher's voice and his--and before more staid members of the congregation have "shifted gears" for the next behavior pattern), he will have started to speak aloud in delighted tones about something irrelevant to the service.

Similarly, the non-coordinated activity of the congregation after church is dismissed--the

*Three years old, when this paragraph was written.

lack of integration and lack of co-terminal etic segments in the action of members, choir, preacher, and song leader--let the observer see when "church is out." On the other hand, the relevant, joint, integrated activity shows that church is in progress.

Within the service, similar clues give evidence that the worshipers recognize sub-wholes: Our choir number this morning... Mr. ... will lead in prayer. Shh (whispered) listen, son, the lady's going to sing. Likewise, nonverbal activity plays its part--the getting adjusted for listening to the sermon--feet shuffled, books arranged, shoulders twitched, hair adjusted, throat cleared, or a half-hundred other individual mannerisms signalling the relaxing of the audience as its most active "preliminary" units are now ended; and either the alert focusing of attention to listen for encouragement, and inspiration, or else the setting of the mind in neutral so it can idly dream of things while the ear registers word by word, but with no connected thought while the eye stares vacantly in space,--all these things at times mark the change to the sermon, and most of them are observable to an alien analyst--or to any competent preacher, who attempts to lead all minds to focus on the message instead of on the window panes, ceiling, neighbor's hat, or a letter that needs to be written.

Specifically, then, such wholes are culturally marked as having beginning and ending; they may be said to have CLOSURE, so that one feels them to be satisfactorily ended, and would miss any deletion in the same way that all would be unsatisfied if the choir left the last two notes off the anthem. Just a month ago, a university colleague told me that he might attend the church I have been describing except for one thing--he missed the Amen at the end of each hymn; he had been brought up to expect it--but here, he said, they just stopped! For him, this informal service failed to mark the hymn with the signal requisite for acceptable closure of that type of *emic* unit.

3.4 Spots and Classes

3.41 Functional Spots in Larger Wholes

For this particular service we have already indicated that a strange thing happened: the song leader referred to an event which in one respect was part of the service, but in another respect was not part of the service--the choir number, which was to be omitted. How could something be omitted which was never present? And why was it listed in the bulletin if it was not part of the service?

The answer: There is an optional SPOT (cf. §1.3) in the behavior unit "morning-service-of-church-X" for a choir number or other special musical selection; it is expected, planned for, counted on by pulpit, pew, and choir loft. The particular number cannot be predicted by the congregation, but the fact that there will be such a number is probable. The pressure to fill the pattern spot is so strong that even in its absence a short verbal substitute (i.e., an explanation for the absence) was given. This incident was not a mere "change of program" such as might occur at a concert, as evidenced by the fact that the church secretary seems to have included in the bulletin a mention of the spot, even without an advanced listing of the specific number expected to fill it; and the lack of special music would also have been noticed and regretted by many worshipers even if there had been no bulletin whatever. (On two recent occasions, similarly, I have noted that a hymn was sung in the place in the service for which a hymn was listed, but for which the particular number was changed: here the functional spot was preserved, and only the particular segment filling that spot was replaced.)

With this in mind it is possible, now, to see more clearly the manner in which the church bulletin served us: it listed for that service the principal spots to be filled; by number it mentioned, in addition, the particular hymns to fill the hymn spots; it also named the preacher, i.e., the actor for the sermon behavior, but did not give the title of his sermon for that week. On various other Sundays the title of the particular sermon has been listed, and as such corresponds structurally to the number or name of the hymn. Further, the church service is seen listed as filling a spot in the activity of the time unit Today, while it is also related by implication to a larger time unit, This Week.

It is evident, then, that focus comes into play in reference to spots as it did in the consideration of segments--a large whole (say the service) may contain spots into which fall smaller wholes, such as the singing of a hymn. If focus is lowered to the hymn as a new whole, then within it one finds spots filled by stanzas, while stanzas as wholes have spots filled by particular lines (or phrases), and lines as wholes may have spots for rime at their ends. And so one continues analysis to the lower limit of immediate (cultural or analytical) relevance.

3.42 Segment Classes

The musical number sung in the spot just before the sermon was a hymn. It was Number 181, chosen from the hymn book and entitled

"My Hope is Built." Almost any of the songs in the book would have been appropriate for use in that spot--but not quite all of them. I have never heard--nor do those participants I have consulted ever expect to hear--Number 392, "Gloria Patri" sung there, nor Number 395, a chant called "Nunc Dimittis"; and it is only slightly less improbable that the short chorus, Number 385, "Shine Just Where You Are" would occur there in senior church, even though in primary church it would not be startling.

That is to say, for each kind of spot there is a CLASS (§1.3) of segments APPROPRIATE to that spot, and actually or potentially observed there. It is their occurrence in this and similar spots which, from this point of view, makes hymns constitute a class. "Sweet Adeline" and "Jingle Bells" would not occur in this spot. Participants would know this fact (could make the negative prediction with a very high degree of certainty) since they react consciously or unconsciously to other characteristics observed to belong to members of the class, characteristics which serve as a yardstick to determine, for example, whether or not "Sweet Adeline" is a hymn.

If the normal worshiper from this church were to attend a service somewhere and hear "Sweet Adeline" in a pre-sermon spot, or if he were to hear "My Hope is Built" used as the theme song of a beer advertisement, he would consider both activities sacrilegious.

At each level of focus in the church service, classes of segments occur and are determined by the spots they fill: there are classes, so defined, of organ preludes, of invocations, of announcements, sermons, and benedictions; of junior, senior, and primary services; of morning and evening service types; of musical introductions to the hymns; of types of arm movements for leading the singing; movements of the congregation standing, sitting, bowing the head; of words or phrases to serve as subjects of sentences, words to serve as modifiers of subjects; consonants in prevocalic position in the syllable, and so on. On these other levels, too, segments inappropriate to a spot but occurring in it may get reactions as sacrilege: whispering instead of listening; or children's misbehavior during the service.

3.43 Indeterminacy of Class

Individual and group usage varies enough so that it is not always clear to the participants what the behavior appropriate to a particular occasion would be. Hesitant people are likely to get help from someone who has observed more of the kind of activity involved than they have: parents instruct their children when to stand up in church; old timers often help visitors find the proper place in a hymnal; incipient clergymen are taught in school how many major spots can occur in a typical sermon and still have it effective.

Change may also occur over a period of time; the tempo and structure of some of the newer church songs has changed sufficiently to cause some uncertainty as to their appropriateness for particular kinds of services. This in turn leads to differences in selection by different leaders, and to some indeterminacy of class. An evening service in this church, for example, would frequently contain songs or choruses inappropriate to the somewhat more conventional morning service.

3.5 Modes of Units

Thus far we have looked principally at emic units as total chunks (or segments) of activity. To be sure, we have here and there indicated that some behavior was irrelevant to a particular emic unit (distant singing of children during the senior service), but the balance was divided up into segmental parts (although with fuzzy borders where components of the behavior segments did not all end at the same time).

Now, however, we are ready to see that on any level of focus each such emic unit, each chunk, even one for which the borders seem relatively clear cut, is divided structurally into three specific kinds of complex overlapping components which I shall call MODES.

We have already discussed numerous components of the three modes, without an attempt to indicate the relationship of these components to trimodal structuring as such. In this section we shall make a start at doing so, and the next few chapters will carry this process further. The basic strength of this kind of an analytical theory will not be fully in view, however, until Chapter 15, when the interpenetration of systems, and the askewness of boundaries between units of various kinds of systems and modes of the systems seem to us to necessitate a trimodal theory--or at least some modal theory--for its analysis. The reader is asked to try, if at all possible, to suspend his judgment as to the usefulness of this kind of approach until that point is reached in the argument. To one who can stay with the general point of view until then, even if disagreeing as to details, Chapter 16 will add further support to its validity by illuminating an approach to meaning in terms of modal components.

For those linguistic readers who would like at this point a crude "rule-of-thumb" to aid

in understanding our approach to the analysis of the modes, even though, like other rules-of-thumb, this one is only a helpful approximation, the following may be of interest:

(1) The feature mode of an emic unit of activity will in general be viewed as comprised of simultaneously occurring identificational-contrastive components, with its internal segmentation analyzed with special reference to stimulus-response features (including purpose or lexical meaning, where relevant).

(2) The manifestation mode of an emic unit of activity will often be viewed as comprised of nonsimultaneously occurring physical variants (or nonsimultaneous components), with its internal segmentation analyzed with special reference to the hierarchy of the mechanisms of its physical production.

(3) The distribution mode of an emic unit of activity will be seen as comprised of relational components, including its class membership and its spot function, with its internal segmentation analyzed in reference to its spot distribution (including reference to choice of emic alternatives, where relevant).

Each of these modes covers the same physical data, however, with a simultaneous structuring in these respective ways. Each of the modes, in turn, can be discovered only in reference to a system which embraces all three, such that the units of each enter into a network of units characterized by and discoverable by their relationship to the entire system of modes and units of modes of which they are a part.

3.51 Distribution Mode

The chief complex of components of the distribution mode is its SPOT-CLASS CORRELATION: the distribution mode of the church service, as described above, includes within its structuring not only the fact that the church service fills a spot within a larger behavior unit (the complex of religious activities of the week) and has within itself interior spots filled by smaller units of activity, but it also includes the fact that a class of emic units of behavior may fill that spot--the class comprised of variants of the regular church service on the one hand, and of special types such as a Christmas program or Children's Day program on the other. Since, however, most of our attention has been focused here on the church service as our top focus, it is simpler to lower our analytical attention to review these matters in reference to a smaller unit included within that service--e.g., the singing of the pre-sermon hymn, Number 181, "My Hope is Built."

The activity consisting of singing the hymn Number 181 has, as part of its distribution mode, a number of important characteristics. One of these is precisely the fact that it can--and here does--fill the pre-sermon spot; secondly, that as such it is a member of a class of activities (comprised of the singing of various other hymns) which can similarly so occur. Thirdly, however, this hymn--and the class of which it is a member--may appropriately have occurred in the other hymn spots of this service, and this spot-class POTENTIAL for so occurring is an important component of its distribution mode, just as its immediate occurrence and its class membership are such components. This potential, furthermore, may be re-expressed as a set of positive and negative predictions as to future occurrence, based upon the spot in which it is at present occurring, and those spots in which it may be discovered to have occurred in the past. Thus the distribution mode includes a relationship to past and present occurrence and future probability of occurrence acceptable to the actors within a certain emic spot or set of emic spots. (Cf. §6.63.)

As a fourth characteristic of the hymn's distribution mode we note that it also has an internal structuring, with spots internal to it. In the singing of this hymn, for example, there are four major spots filled by the singing of one stanza for each of these spots, alternating with a further spot filled by a chorus repeated after each stanza.

The spot-filling nature of a third stanza outside of a series of more than three can occasionally be observed, furthermore, as when the leader states: We will sing the third stanza as the last,* in which the spot of last is filled by a stanza used there, but not structurally last in the hymn as fully used on other occasions. Within each stanza are four rhythmic spots of one line each, whereas the chorus has only three such lines. Each line of each stanza and chorus has six spots filled with stressed syllables, with the second and fifth followed by spots filled with unstressed syllables. (An unstressed syllable and its preceding stressed syllable together are equal in timing to one of the other stressed syllables.) In each syllable is at least one spot filled by a vowel, and sometimes other spots filled by consonants. Simultaneously, the stanzas as sung are comprised of sentences with subject, object, action, and modifying spots, and so on, filled with appropriate nouns, verbs and other classes of linguistic elements.

The DISTRIBUTION MODE of that hymn-singing activity is a composite of all these distributional characteristics: its potential for

*In my data for a different hymn, two weeks later, at an evening service.

occurrence in various spots and classes in this service or elsewhere in other kinds of religious meetings, its actual occurrence in this particular spot and class on this particular day, and its internal spots and classes on lower internal focus levels.

3.52 Manifestation Mode

The activity of singing Hymn 181 is a unit, an emic one (Chapter 2). If the hymn had been repeated immediately by choir and congregation the vocal movements would not have been exactly the same (§ 2.3); an infinite number of slight etic differences would have occurred; none of the thousands of individual tongue and lip movements could have been quite duplicated; timing of individual pronunciations of consonants and vowels would vary; arm movements of the song leader (one of these leaders beats upwards, another downwards), finger movements of the accompanying organist, --all would have varied freely (§ 2.3), sometimes imperceptibly and at some points perceptibly.

The emic unit comprised of the activity of singing Hymn 181 in a church service is not limited to just the one occurrence of the singing of that hymn but is a composite of all such occurrences. The particular, single, physical event, the bodily and singing activity at a particular time and place in a particular spot, is just one single manifestation of that emic unit. Repeated occurrences of that singing would result in further manifestations of that emic unit, just as the word turn repeated fifty times contains fifty manifestations of the one emic unit /t/.

Suppose, however, that Hymn 181 is now sung in junior church. Is that activity a manifestation of the same emic unit of activity as the singing of the same hymn by senior church? In spite of a different audience, a different leader, a piano instead of organ (or organ plus piano), a slightly different tempo, different voice quality (resultant from different age of singers), we consider them the same emically. The differences in the two manifestations are, in part, conditioned variants (§ 2.3) with differences in the manifestation as a result of their differences in distribution.

Let us suppose, again, that the senior church sings Hymn 181 the next week, but that this time it omits the third stanza;--is it, or is it not, emically the same activity as before but with a different manifestation in which one spot is unfilled? We consider it to be the same emic unit; the audience would still report: We sang Hymn Number 181 or We sang two verses of Number 181. (Compare, for example, the sentence Turn again to Number 443; if now we also hear Turn to Number 443, the two sentences differ, in that one potential spot on a low-level focus is unfilled in the second, since the place where again occurred has no word there, but from the point of view of high level focus, its basic arrangement in terms of spots is similar.) This, then is a kind of free variation in which potential spots internally on a low-level focus need not be filled in every manifestation of the same emic unit of activity. On a still lower focus level, I'm here is the same sentence as I am here. Possibly, too, we could see in such variation an analogy with complex variants (§ 2.3) such as the sub-emic variation between [p] and [p^h] at the end of the English sentence Let us stand up.

Differences in manifestation occur on every focus level. On a level higher than that of the hymn, the entire service may be repeated in considerable detail an hour later for an overflow audience, as I have seen done frequently in a certain Southern Baptist church; or regular senior "Morning service" as a whole, as a spot in the religious activities of the week and year, may be considered on this high focus level as a single unit of emic activity, with manifestations radically different each week--i.e., with different hymns, different choir number, different sermon, but with the same major spots.

A complete description of the MANIFESTATION MODE of an emic unit would include a statement of all actual and potential variants in the unit at its top focus layer and internal lower-focus layers as well. Since, however, such potential variants are infinite in number, the descriptive task is made manageable by treating subperceptual variants in special studies only, which can concentrate on the minute acoustic detail of a relatively small amount of data--by dealing with classes of units in such a way that many observations, made at one point, are relevant in many other places; and by limiting one's attention, for certain purposes, to high-focus levels of activity where the perceptible variants are fewer; and by accepting sample occurrences of an emic unit as representative of the total variants of its manifestation mode.

In addition to placing attention on the variants of an emic unit as alternate nonsimultaneous manifestations of that unit, a study of its manifestation mode must include attention addressed to the physical characteristics, as such, of the activity constituting each of these variants. These elements have already been mentioned, and need only brief reference here: the movements of tongue, lips, jaw, etc. (which lead to the vocal noises), organized into movements producing syllables, stress groups, etc.; the accompanying movements of organist and song leader; etc. All such physical elements are components of the manifestation of the emic unit of that hymn-singing activity--and according

to this theory, no emic unit can be completely described without reference to its manifestation mode. In other words we never, in my view, completely "abstract" a behavioral emic unit out of and away from the actual physical action which constitutes the specific manifested substance of behavior.

3.53 Feature Mode

The morning senior church service as a whole is related to the junior service in this church, but with a number of differences which should allow a domestic onlooker to recognize which was which. One of my principal informants for junior church (with which I am much less familiar than senior church even though I have recordings of it), one who has helped plan and execute its programs on occasion, suggests that the chief difference is that the junior service has 'less rigidity in form'; the leaders will 'drop anything at any time' and switch to other activities according as it may be necessary to keep interest.

There are numerous specific differences also: there is a worship section analogous to senior service, with 'as much worship as one can get in' but also there is a 'work shop approach' for the remainder of the time--say two thirds, if the types are not woven in together. There is more singing, beginning with lively short choruses often repeated once or twice (for pleasure, and interest, and to take a longer period of time since a short chorus is over so quickly) leading into the quieter worship section and songs. The "sermon" (i.e., the filling of the spot analogous to the sermon in senior service) is often comprised of activity by the children themselves--identification of the author of a Scripture passage, or quoting it from memory--or the adult leader may tell a story, illustrated at times with paper figures placed on a flannel background. In the workshop section some of the same may occur, with contests among the children--for example, to see, who can most rapidly locate certain places in the Bible. Another informant said--after a service in which Bible stories were acted out in pantomime: 'The chief problem is to have a varied program with them all doing something.'

Such elements serve to show the difference between the two emic units, the senior and junior church services; they are therefore CONTRASTIVE features (or distinctive features). Yet, from a slightly different analytical point of view, these items likewise allow the identification of the units, so they are equally IDENTIFICATIONAL features of the unit under attention.

Identificational-contrastive features are present within every emic unit of behavior, on every focus level; they are components of these units. The segmental parts of the service are segmental or sequence components, whereas elements present together at any one time are simultaneous components. The regular sermon is a sequence component of senior church; the playing of a musical number during the taking up of the offering is one simultaneous component of the offering segment; the ushers' activity of passing the offering plates is a simultaneous component of that same offering segment.

On a lower level of focus, say for the m in my, the components at first appear to be much simpler--the closing of the lips would be one component, the opening of the nasal passage would be another simultaneous one, the vibration of the vocal cords would be a third. Actually these, too, are exceedingly complex and appear simple only because as students of language behavior we so seldom lower our focus to smaller elements. The physiologists would not find the closing of lips so simple, but would find complexity in simultaneous or sequential muscle movements; the biological chemist on a still lower level of analytical focus would see components of atomic and molecular activity of enormous complexity within the muscles and nerves; the physicist might go to lower focus and analyze sub-atomic components of activity within these molecules. As a matter of fact, it may ultimately be found that the activity of hearing the sound m may within the ear have even the linguistically-relevant contrastive physical movements of near-molecular size.

Among the identificational-contrastive features are some which are elusive and difficult to identify objectively in spite of their emic importance. These features are the ones which relate to meaning and purpose in human activity, and give data allowing the significant segmentation of human activity.

Such an element as the purpose of the singing of the hymn is obviously not a chunk of activity which can be photographed or recorded directly on a tape. If the analyst utilizes as evidence the claims of the participants, the evidence will vary, since some of the people may be inarticulate, most of those in the pew will not know the preacher's purposes, nor would most of them know the historical sources of activity, at which time the purposes of the participants who founded the ceremony might be quite different from the purposes of those people now in the pew who might be unaware of the original reasons for differences in the form of --say--a Presbyterian and Methodist service.

The language analyst frequently asks his informants for the meaning of words, and utilizes

this evidence. Yet he must do so with caution because a speaker of the language may be misinformed on technical vocabulary outside his experience (compare the naming of woodworking tools and of colors by a carpenter and his seamstress wife); or they may merely be unable to express in words the meanings and purposes to which they react; or they may be deliberately deceptive.

The analyst, therefore, supplements such inquiry with a much more objective tool than informant definitions of meaning and purpose. He studies the kinds of spots in which activity occurs--the activity of speaking a certain word or of performing a certain ceremony. He sees that, by and large, the particular activity (e.g., the speaking of a particular word in a particular context, or the singing of a hymn in a particular spot in a church service) tends to be followed by a response, or sequel, of some type, such that the first has something of the nature of cause and the second of effect; he notices, further, that these word-activities and ceremony-activities are found frequently in certain spots, adjacent to specific items in adjacent spots (as the merrier frequently follows the more); etc. By such a study of contexts a partial objective study of meanings and purposes can be made.

In this respect a meaning or purpose component is analogous to the character of the distribution mode of a unit. The distribution mode of a unit could only be described in reference to the spot in the higher-focus unit in which it then occurred, with reference also to its potential and past occurrence in other spots, and in reference to its internal spots and their contents. Meaning, or purpose, as a feature component of an emic segment, must similarly be detected by reference to elements beyond the chunk as a whole. Thus the purpose of an offertory prayer can be seen in that it immediately precedes (or, in some churches immediately follows) the activity of the ushers in taking up the offering; it includes references to the gifts; it usually includes special references of gratefulness to God for supplies, with further relation of this offering to an expression of thanks; and it is paralleled by physical activity such as the bowing of heads and closing of eyes. All these things together would lead the analyst to conclude, even without being told, that this was a prayer of thanksgiving by pastor and congregation--or would lead him to do so subject to further consideration of the spot which the church service activity as a whole played in the more extensive daily life of each individual (i.e., if he found that one of the members cheated consistently in business, he might conclude in retrospect that the bowing of the head for offertory prayer in church was a physical feature of the manifestation of a unit of formal ceremony--without worship content--for purposes of establishing business contacts, rather than a feature of physical activity which was part of the manifestation mode of an emic unit of genuine worship activity).

Internal segmentation of the feature mode of a large emic unit of behavior is specifically oriented toward the purposeful or meaningful character of the unit as a whole, and the purposeful or meaningful character of its parts. On the contrary, the internal segmentation of its manifestation mode, in reference to large physical units of activity, may or may not coincide with such meaningful units; the units of physical activity such as an abdominal pulse producing a stress group, for example, may or may not begin and end with the beginning and ending of a grammatical phrase--as, in the singing of a hymn, the end of a musical phrase does not always coincide with the end of a grammatical one. This askewness of boundaries of modal units will in Chapter 15 be seen as one of the compelling bits of evidence forcing us to some kind of modal theory--whether this one or one different in some way--but for the present, we merely point out that the segmentation of the various modes are performed by the analyst so as to discover the emic segmentation of each mode, with meaning and purpose being highly relevant to segmentation of the feature mode.

3.54 Indeterminacy of Modes

Sometimes it is impossible to separate clearly the modal components of a unit. Take, for example, a certain Congregational service in which without exception, so far as I can recall, the prelude is always followed by the singing of the Doxology (Praise God from whom all blessings flow) to the tune of Old Hundred. Here the spot for the Doxology is always filled by the same manifestation of that spot, the Doxology itself; no member of any class of items can substitute for the Doxology. If, at the same time, the Doxology in turn were never to be sung elsewhere by members of that church, but were reserved exclusively for this spot, then the purpose or meaning or function of the spot, and the purpose or meaning or function of the Doxology, would be inseparable; there would be an indeterminacy in isolating the purposive component of the spot itself from the purposive component of the spot-filling activity.

Similar problems sometimes arise in the analysis of single words or even a small group of words which come only in one spot in a sentence--words like not (in I did not talk to him at all); or a group like if, since, when; or a suffix like -s (plural). Here, too, it is

difficult or impossible to separate the purposive or meaning component of the spot from that of the single word or word group which may fill the spot.

3.55 Modal Formula Defining Units

If we symbolize an emic unit of activity as U, the feature mode as F, the manifestation mode as M, and the distribution mode as D, then any emic unit of any type on any level of focus is defined completely as:

$$U = \frac{F}{D}M$$

This formula applies not only to emic units which are chunks of activity, but also to all special kinds of emic units such as emic classes. It is this fact which--the theory suggests--is at the heart of the nature of the structure of behavior (and perhaps of many other kinds of structure as well) and leads to its characteristic hierarchical appearance.

3.56 Manifestation of Each Mode as the Manifestation of the Whole

A basic misunderstanding can easily arise at this point. The reader may assume that the emic unit on any focus level--say the singing of Hymn 181--is a tripartite unit constituted of three separate physical things added one to another--of features plus formal manifestation plus distribution. Such an outlook might vitiate the core of the entire structural theory presented here.

Now the variant forms of the singing of the hymn on various occasions include the total manifestation of the hymn unit activity in stanzas, lines or phrases, words, sounds, and so forth. In short, the manifested form includes the entire physical manifestation of the entire hymn, not just one third of that form. If M is used to symbolize the total manifestation mode of U, including all potential variants, and Mm is the particular variant under attention, with Um the particular variant of U under attention, then in this sense for this particular singing of Hymn 181, Mm = Um, since Mm embraces through its formal mode all of the substance of Um; there is no substance left over.

Similarly, the features which simultaneously identify the singing of Hymn 181 as Hymn 181 and separate it distinctly from the singing of other specific songs (say Sweet Adeline)--its particular stanzas, its particular lines, its meaningful phrases, its rhythmic characteristics--the manifestation of these features also embrace the entire substance of the hymn, the same substance as seen in the manifestation mode itself. The feature mode then is also, from this point of view, the whole: Fm = Um.

Finally, Dm = Um. The spot which the hymn fills and the spots which it contains can ultimately be known as spots only through the substance filling or manifesting those structural spots. The distribution mode is not a system of empty spots within empty spots, but a system of FILLED SPOTS, in which the substance filling the spot--the particular item occurring at the time--is part of the distribution mode. Dm = UM, as did Fm and Mm; it, too, engulfs the entire substance of Um.

The reason for labelling contrastive-identificational features, formal manifestation, and distributional character as "modes" rather than "fragments" or "parts" is now clear: modes are not parts, nor pieces of the whole; they each comprise the entire substance in a different simultaneous structure. The same "stuff," the activity, is STRUCTURED THREE WAYS AT ONCE. For all emic units of human activity, and possibly for many other significant structures in the universe as well, $U = \frac{F}{D}M$.

At first, the theory of three simultaneous structurings of a single substance may appear strange. Perhaps an illustration of a different type may make it seem less so. Let us suppose, for example, that a cook bakes two cakes in separate shallow pans. Later, she places them one on top of another, with frosting between, on top of the whole, and around the sides. At this point there is a single two-layered cake, structured in terms of layers no longer visible to the eye but covered with frosting. Now the cake is placed on the table, and sliced into ten pieces, but without any of the pieces being removed from the plate. What is the new structuring of the cake? It is obviously enough structured into ten vertical slices, with no substance left over; just as obviously, to one who knows cakes and takes out a slice to look at it where it is cut, it is still a two-layered cake, with all the substance in two frosted layers with nothing left over. The cake, then, is simultaneously structured into layers and slices, such that the entire substance of the cake is structured in each way. By special fancy cooking procedures, even more elaborate structurings could be built into the cake--for example, by using different colored doughs, in rippling waves within a single layer--or further structurings can be cut into it, such as by cutting the cake into concentric rings before cutting it into slices.

It is the thesis of this volume that human behavior must be analyzed as consisting of various simultaneous structurings of its activity, structurings which are here called

modes.* It contends, furthermore, that an adequate description of such behavior cannot be reached by utilizing a theoretical foundation in which less than three such modes are postulated; and that the penalty for attempting to utilize fewer modes is the distortion or rejection of data concerning interpenetrating subsystems of this behavior. It attempts to demonstrate, empirically, that no more than three such modes need be used to accommodate the present data.

3.6 Bibliographical Comments on Chapter 3

3.61 On Segmenting a Continuum

One of the basic problems which confronts us in linguistics is the necessity for a theory and procedure for the analytical breaking up of a physical etic continuum into a sequence of discrete emic units. We began discussion of this problem in relation to chunks, or segments, or waves of activity (§3.2). The problem will continue to come into attention throughout the book from a theoretical point of view--by direct statement or by implication in the earlier chapters--and from a practical one, especially in the struggle for a step-by-step procedure for use in the field, in Chapter 22.

Sapir illustrates the language problem, by reference to music: 'Even the most resplendent and dynamic symphony is built up of tangibly distinct musical entities or notes which, in the physical world, flow into each other in an indefinite continuum but which, in the world of aesthetic composition and appreciation, are definitely bounded off against one another, so that they may enter into an intricate mathematics of significant relationships' (1933, Selected Writings, p. 8). For illustrations in terms of mathematics, see Joos (1950, pp. 702-04).

The problem covers areas much more general than that of linguistics, for example that of epistemology and the theory of perception. Compare Sinclair: 'The real difficulty is...to understand how we come to experience the world as containing particular things' (1951, pp. 176-77; and cf. Koffka, 1935). Or note the anthropologist Nadel: 'If scientific insight is insight into an order of things, observation must be directed towards breaking up the continuum of data into units--units which can be manipulated and ordered in a fashion more systematic than the ambiguous and fortuitous ordering inherent in naïve observation' (1951, p. 75). Compare also the relationship of an analogical computer (with some characteristics of a continuum) to the digital computer (dealing with discrete elements) in reference to the analysis of a continuous physical variable and of some characteristics of the central nervous system (Gerard, Von Neumann, and others, in Cybernetics, 7th, 1950, pp. 26-37); e.g., 'in almost all parts of physics the underlying reality is analogical, that is, the true physical variables are in almost all cases continuous, or equivalent to continuous descriptions. The digital procedure is usually a human artifact for the sake of description' (p. 27, Von Neumann), and 'You treat them as if these transition states did not exist' (p. 30, Stroud). Compare statements of another linguist, Harris (1951, p. 22).

Two types of continua are implied by our quotation from Sapir. The first is the segmentation of a stream of continuous speech or action, i.e., of a sequence, in which the units border on one another in time, in that one utterance. In this type, we have suggested that the units are etically like "waves" which smear into one another, by anticipation of the first by the second unit in a sequence, and by delay of decay

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*There would be some advantage in using the word 'dimensions' instead of 'modes': specifically, we are accustomed to think in terms of three dimensions which are simultaneouly characterizing a solid. Yet there would be disadvantages which appear to me to outweigh the advantages: we are also accustomed to thinking of "time" as a "fourth dimension"--but in the present theory time is imbedded in the third mode, the distributional "dimension" (§6.63) so that no additional mode is necessary to accommodate it; this factor, plus the interlocking of systems on different levels of structure (Chapter 15) and the fusion of waves of activity on the same level of structure (Chapter 14, and §3.2) seem to make unnecessary, for the purposes of this theory, the postulation of a space-time continuum which is apart from and other than the trimodally structured units of human and nonhuman behavior and of the matrix of behavior. In addition, a dimension does not of itself have any structuring--it seems to be a theoretical construct abstracted away from the concrete elements. A mode, however, is never so abstracted in this theory; there are no modes postulated as existing of themselves; there are only specific modal components of specific units, so that there are no modes to be found or discussed excepting as structurings of these units--and such that wherever there is one such mode there are always two more, simultaneously structuring the same stuff in a different way. Nevertheless, the term 'dimension' is a useful figure of speech to help explain modal structuring provided such limitations are cautiously observed.

of the first after the second has begun. The second type is a physical continuum of physical characteristics of members of a class of units in a system of comparable units, such that no "absolute" physical criterion can determine by a simple measurement which of two units one is observing, since the ranges of their physical variants may overlap under certain contextual influences. Here the two physical movements being compared do not occur in the same sequence, adjacent to one another, but occur at separate times and places, and must either be analyzed as the "same" emically, or "different" emically. If, for example, one hears at one moment, in a strange language, one variety of [t] sound, and at another moment another variety of [t], he must determine in some way whether the two sounds are members of the same emic unit, or of different emic units.

The abstraction of discrete emic units from a physical etic continuum, then, demands (a) judgments as to the separation of one unit type from another type heard elsewhere, and also (b) the determination as to whether a certain chunk of an etic continuum is constituted of just one emic segment, or of a sequence of two or more emic segments. The emic analytical process must deal simultaneously with emic units (a) as discrete parts of a system of units, and (b) as discrete parts of sequences of units in sequences of complex events. It is the presence of this phase of the analytical requirement of the theory which led to a mention (a) of identificational-contrastive characteristics and (b) of segmentation characteristics of the feature mode, the manifestation mode, and the distribution mode, in our rule-of-thumb for their description (§ 3.5).

The approach here to physical etic segments as waves of physical activity is a development of my earlier analysis of the sounds of a speech continuum in which I observed the peaks and troughs of stricture, and set them up as centers of segments which had indefinite borders. In succeeding chapters--especially in Chapter 14--this approach will be helpful as it is extended to the theoretical treatment of problems presented by the fusion of words or meaningful parts of words, where centers of segments are again under attention with borders left indeterminate in theory as well as in empirical fact. The earlier phonological material, in turn, came as a result of a struggle to determine the sequence of articulatory happenings in the production of certain complex sounds called "glottalized stops," "clicks," etc., and was presented first to a seminar at the Linguistic Institute of the Linguistic Society of America and the University of Michigan, 1940, as part of a dissertation in progress, and appeared later in Pike, 1943a, pp. 107-12 (cf. also pp. 42-55, and diagrams on pp. 90, 92, 94, 96, 98-99; for a different type of segmental diagram, showing both peaks and indeterminate crossing glides, see Pike, 1947c, pp. 9-10, 30, 41). Hockett built on this material (1942, p. 5--text and fn. 4), but with a modification which focused attention on the 'change-point' (p. 5) and segments between any two such points--a view useful for certain purposes, provided one leaves the change-point indeterminate so that a working procedure can in fact identify the area of most rapid change without being committed to the impossible task of setting up, in theory or practice, absolute sharp points of change, and provided that the statement of this view does not conceal the fact that the anticipation of the component articulatory movements which produce a sound, or the decay of such components, may spread over several sounds in a sequence (e.g., Carnochan, 1953, p. 94, building on an approach highlighted by Firth) and do not occur exclusively at a change point or even at a change area between segments. Bloch follows Hockett's outlook in this matter (1948, p. 12), but neither of them seem to me to give adequate safeguards of the kind mentioned here.

3.62 On Hierarchical Structure

Problems of hierarchical structure are much more extensive than that of language structure alone, in that they include the hierarchical structuring of perception of various types. For epistemological problems related to hierarchical matters see Sinclair in reference to 'the focus of our attention, and the wider situation which contains it' (1951, p. 223; also pp. 96, 182-83, 201, 205); or for 'grades of abstraction' note Whitehead (1925, p. 168). For size of unit in a particular setting, in relation to observation, see Lewin (1951, p. 157, 159), Nadel (1951, p. 76), or Linton (1945, p. 158).

For an emphasis on a hierarchy of behavior, note Zipf, 'Every act of behavior may be viewed as a complex of ever smaller acts, and as a component in ever larger complexes of action; we might well be in doubt as to the proper size to select as a unit' (1935, p. 12). Linguistic structuring in a hierarchy of some type has been implicit in the work of the immediate and of the remote past. In Bloomfield this may be seen in such items as his assumption that 'Every utterance is made up wholly of forms' (1926, p. 155); for an attempt to make explicit some of the hierarchical ordering which is implied by Bloomfield's work, see Pike (1943b). Other references to linguistic hierarchy may be seen in Hockett (1947b, p. 284-85), Ege (1949, p. 21), de Groot

(1948, p. 436), Hjelmslev (1953, p. 18, 24). Numerous other items directly or indirectly have reference to hierarchical materials; a number of these will be referred to in Chapters 9-11 and 15; see, for example, Harris (1946).

The term 'closure' is taken from Koffka (1927, p. 60; 1935, p. 151); cf. Lewin (1951, p. 159). In Chapter 4 we shall deal more extensively with hierarchical matters in reference to focus (§ 3.3), which is related to closure, but shall return again to consider closure, in Chapter 18, as a specialized structural problem.

CHAPTER 4

FOCUS ILLUSTRATED

4.1 A Football Game in Focus

Last Saturday* I saw the football game played between the teams of the University of Michigan and the University of Minnesota.

By comparing notes on my own observations made there, with data from my recordings of a radio broadcast of the same game, and with several newspaper reports of it, it is possible to illustrate and develop further some of the problems of focus introduced in the preceding Chapter.

4.11 The Official Game as a Whole

Throughout the broadcast data there are many cultural indications that the game was just sixty minutes long: 8/3/11.7...and that's the scoring picture from Ann Arbor with the ball game twenty-three minutes old; then a few minutes later, and we still have thirty-four minutes of football remaining. This sixty-minute period is initiated by a signal from one of the officials and then by the first significant player-participant action, the kickoff: 8/2/1.1 We're just about set to go from Ann Arbor... Minnesota kicks off; kicking off is C--, a low kick, down to the 15, to the 10, to the 5. The hour ends with a signal gun: 8/6/23.4 He's over the midfield stripe, to the 40, to the 35, cuts back in, and is dropped out of bounds, on the Minnesota 32-yard line in a--please--that will be it; that's it, that's all there is, there isn't any more; the gun goes off; it's been sixty minutes of Gopher-Wolverine football... the final score at the end...

The focus is lifted, in the report in the Michigan Daily the next day: ...The Gophers left the field after 2 hours and 20 minutes of football. The 60-minute count included only such official times as those for which the broadcaster stated that: 8/3/19.5 Time is in down on the playing field here. The longer count included at 15-minute half-time intermission, shorter intermissions following the first and third quarters, numerous time-outs requested by the teams, and other periods of time during which the official clock was not in motion (such as the interval between the time that a forward pass was incomplete and the next play was begun).

4.12 The Spectacle

After the official game was all over people began rapidly leaving the stands. My wife, however, said: Let's wait, I want to see the whole thing. This "whole thing" was on a focal level higher than that of the other two mentioned: it was the game as a spectacle,** including the activity of the players (both those in the game and those on the sideline), the activity of the officials (who were not carrying the ball but who are very important to the game), the half-time activity of the bands, the activity of the fans, and activities before the game began. After the official game was over, the band lined up in the form of a large M, played, and marched off the field, and out of the stadium. They continued to play until they were so far away from the field that they could hardly be heard. It was not until then that my wife said: Well, it's beginning to thin out; I guess we can go, almost. The game as a spectacle was then over, for her, even though at no specific point could one say that it had ended just there, since the gradual thinning of the crowd left a fuzzy slur of group activity following unrelated activities of the individual fans.

The unofficial spectacle had begun early. A half hour before the opening kick-off, ticket keepers were busy at the gates; local and state police were directing the thousands of cars, and using an overhead airplane at strategic points to send squad cars to help take care of potential traffic jams. Venders of hot dogs, banners, toys and Presidential campaign buttons were plying their trade. A few thousand fans were already in the stadium, buying sunshades, enjoying the game atmosphere, and waiting for the scheduled pre-game activities. A blimp advertising beer and an airplane extolling a brand of bread were flying overhead, and the shadow of the blimp occasionally struck the fans and diverted their attention from the events in the stadium.

*October 25, 1952

**For this term note the Ann Arbor News for Nov. 6, 1952: The scramble for teams for the Jan. 1 football bowl spectacles was on today.

The spectacle, already under way, soon had a more formal opening. The loud speaker at the stadium announced the first official part of the pre-game program, and the band from Minnesota spelled out "Hello." A bit later the Michigan band came on to the field; and with a formal: Ladies and gentlemen... the announcer asked the people in the stadium to rise and sing the national anthem. Further band numbers followed, with the crowds standing once more as they sang the Michigan Alma Mater.

After a fifteen-minute pre-game performance the announcer inaugurated the official game (as distinct from the more inclusive spectacle) by saying over the loud speaker: Good afternoon, and welcome to the... The larger spectacle continued simultaneously with the official game. Fans yelled or cheered; school cheer leaders led in organized yells more or less closely related to the progress of the game, as when they shouted in unison: 8/2/3.3 Go, go, go, go, go, go, go, as the home team penetrated deeper and deeper into its opponent's territory. Some of the action, however, was quite unrelated to the official game: the seating of late comers; a call over the loud speaker for a doctor in an emergency; the police insisting that a drunken man be led from the stands.

The spectacle program took over in full force during the half time, with first one and then the other band marching in patterned lines so as to show, among other things, a Paul Bunyan skillet, a gun with coeds for bullets, a violin with moving bow (in reference to Jack Benny), a comedian with rolling eyes of giant size (Eddie Cantor), and a top hat (for Ted Lewis).

4.13 The Season

The following pre-game statement by the broadcaster shows that he has simultaneously in view several levels of focus higher than those I have referred to thus far: 8/1/17.5 And so the picture from the University of Michigan stadium on homecoming day of this 1952 season is Michigan versus Minnesota with the famed Little Brown Jug going to the winner, and first place in the Big Ten.

The official game is referred to here in the phrase Michigan versus Minnesota, and the next higher layer in the series is indicated by the phrase for this 1952 season which includes all of the games to be played by the team of the University of Michigan that year--and the statement reveals that the goal of the season's activity is to win the conference championship (first place in the Big Ten). On the other hand, the reference to the Little Brown Jug refers to a long period of rivalry between the two universities. The printed "Official Program" for the game states that a water jug seems to have been forgotten by the Michigan trainer, and was picked up by the Minnesota custodian, in the post-game excitement in 1903. Later, it says, the jug was missed and Mr. Yost wrote to Minnesota authorities asking for its return. The Gopher authorities, in a bantering spirit, suggested that Michigan "come and get it." And now each year the winner of the game takes the trophy until the next season.

These two higher-level goals came in conflict for the focal attention of the fans. The Michigan Daily stated, the next day: And the Little Brown Jug, nearly forgotten in the scramble for the Conference lead...

The spectacle, however, fitted into a somewhat different hierarchy which was referred to, in the quote above, by the phrase: on homecoming day. The Daily describes it thus: Pennant-waving alumni, descending on Ann Arbor in nostalgic droves, had their day yesterday, and the public relations couldn't have been any better.

Temperatures were pleasant, the Wolverines trounced Minnesota 21-0, the Michigan band deserved the usual superlatives, and the many homecoming displays, the later housewarmings and receptions added a sentimental touch to "dear old Michigan." Homecoming day was for the alumni to come back home--and come they did, with an old grad band to help play during part of the half-time activities.

Some of the sports writers hinted at a further high focal level in which the winner of the Big Ten Conference season was scheduled to participate, namely, the game between the winner of the Big Ten and the winner of the Pacific Coast championship, at the Rose Bowl in Pasadena, California. Note, for example, the Detroit Times: Minnesota may request that you omit flowers from their Big Ten football funeral, but the spunky Wolverines of Michigan are not shying away from bouquets, as long as they contain roses.

Yes, there is a fragrance floating in from a place called Pasadena where the Rose Bowl roses bloom. Both Michigan football players and their ardent supporters are starting to think in those terms.*

Other teams were simultaneously engaged elsewhere, during the contest in Ann Arbor. Thus the broadcaster: 8/3/10.9 Illinois playing

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*A week later the Michigan Daily states: A flood of ineptness in the first half yesterday doused Michigan's Rose Bowl hopes and washed the Michigan Wolverines right out of the Big Ten lead.

down at Purdue, the other key game, as far as the Big Ten championship is concerned this year. Similarly, over the loud speaker during time-outs the announcer occasionally gave last minute scores of games in progress elsewhere. Here the focus was much broader than that of the Big Ten, and included teams from all sections of the country. Announcements of scores frequently got a strong response from some large segment of the 70,000 or more fans present.

4.14 Miscellaneous Overlapping Hierarchies

Numerous hints throughout the game gave evidence of other hierarchies of activity which temporarily merged with the spectacle. Thus the stadium announcer: I want to thank the many scouts for helping to usher during the game. The activity of the scouts was just one element in a larger series of activities which overlapped on those of the football season, as part of the spectacle. The students, cheering, found their activities here merely a part of the long series of studies and extra-curricular events. Likewise the alumni from many different occupations were gathered together as spectacle observers, but each with his own personal hierarchy of activity elsewhere. The vendors, coaches, broadcasters, officials, and others, likewise would find their observing activity here just one small bit in a large hierarchy of their own activities.

In general, no evidence would occur in the public data to lead us to focus on these personal hierarchies. Occasionally, however, reports would do so. The most striking incident of this type was the publication in the Ann Arbor News of the picture of two children recuperating from polio, one of them still with his respirator, who attended the game in wheel chairs, sitting at the 50-yard line in the box of the athletic director, and being wheeled across the turf after the game and the spectacle were over, to be returned to the hospital. In the official program, also, there were numerous references to personal hierarchies of activity of certain individual players, giving their athletic history and a discussion of their injuries--although the concealment of unhealed injuries became a part of the pre-game strategy to prevent the opposition from taking advantage of this knowledge; thus the radio announcer told us: 8/1/23.8 Both coaches have been very mum about injuries to key men; we'll give them to you fans as we know at kick-off.

4.15 Abstraction Focus (Hypostasis)

A sharply different kind of focus could also be seen in the materials concerning this game. This was the focusing of attention not on the game as such nor on any part of the game as part of that game, but rather a focusing upon an etic summation of events not directly related to each other but classified in terms of a prior format and called the "statistics" of individual or team performance. Thus (The Michigan Daily): He [K--] completed 11 or 14 tosses from the left halfback position. All told this year K-- has hit on 23 out of 40 for 268 yards ...End L-- P-- enters the game tied with K-- for the team scoring lead. Or note the following tabulation (the Detroit Times):

U-M Statistics

	Mich.	Minn.
First Downs	22	10
Rushing Yardage	264	85
Passing Yardage	118	50
Passes Attempted	20	21
Passes Completed	8	8
Passes Intercepted	2	1
Punts	6	9
Punting Average	37.5	33.4
Fumbles Lost	4	3
Yards Penalized	45	30

Score by Quarters:

Michigan	7	7	0	7 -	21
Minnesota	0	0	0	0 -	0

Touchdowns--Michigan: B--(2), T--Points after touchdown: R--(3).

The most important part of the abstracting of the game concerns the scoring: 8/6/25.3 As far as the scoring was concerned the first score of the game went to Michigan... The final score came after... The hypostasis here is a very important one since the emic structure of the game involves the attempt to win it, and winning it necessitates scoring. Hence the particular series of plays which lead to the winning of the game, or to opponent's insufficient scores, constitute the highlights and are included in the "recap" (recapitulation of the principal features of the game) for the benefit of listeners who turned on the radio late, or in the news columns to give a quick understanding of the way the game worked out. This particular game, as the tabulated statistics show, ended with a score of 21 to 0 in favor of Michigan. The score was attained by three touchdowns, each counting 6 points and a special point after each of those. In this particular game each of the touchdowns was made by a Michigan man carrying the ball across the goal line and the follow-up point was made by having the ball kicked over the cross bar between the goal posts.

4.16 Periods in the Official Game

The official game consisted of timed activity divided into four quarters of fiteen minutes each:

8/6/26.1 And the score board showed 7 minutes remaining in the fourth and final quarter of the ball game. Here the focus was simultaneously on the quarter itself and on the quarter as constituting a part filling the final period of the game. At other times the quarter is focused on in reference to an intermediate unit, the half: 8/4/13 The third quarter, the second half, just getting under way from Ann Arbor; a beautiful October afternoon. The activity of the first two quarters is separated only by a lapse of a couple of minutes, and the same for the final two quarters, but the activity of the two halves is separated by fifteen minutes of rest time for the players, filled with a program for the fans watching the spectacle.

The periods are marked in special ways. Before the first half begins one of the teams wins the toss of a coin and can choose either to defend a particular goal or to receive or kick the ball: 8/6/25.4 The Wolverines elected to receive, after Minnesota won the toss and [Minnesota] elected to defend the goal with the wind. After the first half: 8/4/11.9 Michigan now has the choice, and they elect to receive. For the quarters there is no new kick-off but the teams are turned around to play in opposite directions on the field.

4.17 Plays, Play Sequences, and Closure

The game is further divided up into a series of attempts by one side or the other to carry, pass, or kick the ball toward the opposite goal line until it can be carried or passed over for a touchdown. Each attempt at advancing the ball is called a play. Frequently attention is focused on these plays as such; for example the broadcaster: 8/4/11.9... ready to begin the [description of the] second half play by play. The plays may be focused on one at a time: Michigan took the opening kick-off; or in retrospect several may be looked at together as consistuting a single sequence: 8/2/1.8 The injured P-- is in there to start this opening sequence of plays. The Wolverines took the opening kick-off and marched 71 yards in 10 plays to score.

A sequence like this last one may draw to it the arbitrary focus of the observer, so that he views it as a unit, a sustained drive heading toward the goal without the team losing the ball. Officially, however, there is a different grouping which is often focused on as well--namely the fact that one team is given four tries to cover a distance of 10 yards; if it fails to cover this distance in the four attempts allotted to it, then the opposite side gets the ball and tries to carry it in the opposite direction. Each play in such a series of four is called a "down." If in four downs or less the required yardage is achieved, then the team begins with "first down" again, with four more potential attempts for a further ten yards: 8/2/4.4 It brings up second down and still--oh--probably 10-1/2 to go; he lost a half yard on the play; so on two spinning plays D-- B-- has failed to pick up any yardage.

Particular plays, also, may be looked on as units and as such viewed from the point of view of closure. An attempt to pass the ball into the opponent's territory, for example, counts officially as a completed down, that is as a play; but if the pass is not caught by a member of the team throwing it, but rather is dropped, the pass itself is ruled "incomplete" and does not add yardage to the progress of the team: 8/4/27.2 He was already looking at where he was going to run instead of grabbing the ball. He had it momentarily and then dropped it. It goes as an incompleted forward pass for Minnesota. Here then there are simultaneously two layers of closure: for the first--the attempted pass as such--there is an official failure to have closure if the pass is dropped; from the point of view of the play as a play, however, there is psychological closure, and the play is officially ended.

4.18 Plays in Spots with Choice and Variants

At the opening of each half the particular play used is determined in advance by the rules of the game: it must be a kick-off with the ball starting from the ground and kicked by one of the players toward his opponents. At other points in the game, however, the particular play can vary: it may be a pass, a run, a kick, etc. Thus, the potential for each play, in a series of four plays constituting the four downs, itself constitutes a "spot" where a selected play may be used.

The choice of the particular play used is determined by the quarterback: 8/2/2.9 T--[quarterback] looks over Minnesota's 6-2-2-1 [defensive position] now; and then the "T" formation; he gives the hand-off this time to H--. The quarterback's strategy is therefore to choose plays considered by him most likely to succeed at any particular time. In addition to the basic possibilities of running, passing, or kicking there are many varieties of plays within each of these major types. If the player runs with the ball, for example, he may run around either end of the opposing lines or he may attempt to run through the center of the line or between players at either end of the line, etc. Here is the first play of the Michigan-Minnesota game which followed the opening kick-off: 8/2/1.9 T--[quarterback] looks over Minnesota's 5-3-2-1 defense, then he shifts the Wolverines

unbalanced to the right, single wing. K-- deep. B-- close. B-- spins, and he's hit for a two-yard loss. Getting in there very nicely is C-- S--, the right guard for Minnesota--submarined those would-be Michigan blockers, and moved in very nicely and dropped Michigan's fullback D-- B-- for a 2-yard loss.

Passes, similarly, may occur in numerous varieties. They may be thrown directly ahead of the line or to one side; a short distance or a long distance; or may be thrown laterally to one side to a teammate who then carries it forward. For a sample passing play note the following--the final play of the game: 8/6/23.3 Minnesota looks over that defense of Michigan; it's a 5-3-2-1. Then G-- from the tailback goes back, cocks his arm on the Minnesota 29-yard line, throws way down field--and it is intercepted by Michigan's number 19 K--; he's over the midfield stripe, to the 40, to the 35, cuts back in, and is dropped out of bounds on the Minnesota 32-yard line.

4.19 Wholes Smaller than Plays

Often the announcer focuses temporarily on bits of activity much smaller than that constituted of an entire play. In the report of two preceding plays there were a number of such elements: the quarterback looking over the field preparatory to calling the play; the shifting of the line; the spinning of a player to reverse direction while carrying the ball; the defensive man's rushing in to the offensive field of play in order to pull down the runner before he can get away; the falling of the offensive runner after he is tackled by his opponent; also the backward movement in preparation for a pass; the lifting or cocking of the arm to pass; the throwing of the ball; the catching of the ball by an opposing player; the progress of his running; the changing of direction by cutting back into an open spot; the fall of the player when he is tackled out of bounds just off the official playing surface.

4.1 10 Homomorphic Activity and Indeterminacy

In general the purpose of the plays, or of the activity smaller than that of a play, can be deduced from the place it would normally occur in a sequence of activities in the game. Occasionally, however, two elements occur which are physically, etically alike but which are emically different. The blowing of the whistle by an official, for example, may on the one hand signal the players that the game has begun, or, on the other hand, may signal an interruption of the official timing of the game while a penalty is inflicted on one of the teams.

Some deliberate deception is used: 8/6/8.4 That was the fullback fake buck lateral, W-- handing off to S-- he faked a buck through the line and S-- went back to pass. Here one player moves toward the line as if he were going to carry the ball directly forward, and this activity is designed to draw the defensive players to that particular spot where the ball would have gone had he done what it appeared he was going to do. By this maneuver the offensive team hopes to have an opening for their ball carrier or for the person who is to receive a pass. There is a technical parallel between the activity of the faked buck through the line, and a filibuster (cf. §2.2) or a lie. In each of these activities an alien observer (or even a domestic one) who saw only that small segment of activity would not know whether that part of the play was designed to go ahead as it seemed, or whether it was designed to be a feint, to draw away the opposition. Just as verbal elements which are similar in form but different in meaning are said to be HOMOPHONOUS (§2.2; cf. pair and pare), nonverbal ones may be called HOMOMORPHIC.

4.2 Height of Focus

Starting from some arbitrarily chosen but culturally documented* level of focus, exponents may be used to symbolize hierarchical layers culturally or analytically recognized as embracing a larger or smaller sequence of activity than the starting focus level.

4.21 Predominant Focus

As a starting point we may try to pick a PREDOMINANT FOCUS UNIT, around which the cultural evidence indicates that other included or simultaneous larger units are oriented. For the data of Section 4.1, we have chosen the official game as the predominant whole. The cultural evidence for this choice is the frequent reference to "pre-game activities," "half-time activities," and the like, in press and broadcast; the loudspeaker announcement; Game's over! personal comments from the fans: Say, that's pretty good, I got here just in time for the kickoff; and the nonverbal activity of mass arrival and departure.

4.22 Exponents in Formulas

If, then, we start with the official game symbolized as U, the seasonal series of official

*Documented in terms of verbal (or nonverbal) activity which indicates closure, as in the preceding section or in Chapter 3.

games might be U^2, the Rose Bowl post-season contest as U^3, and the long series of contests for the Little Brown Jug as U^4. On lower focus levels, the first (or second) half, as a whole, would be U^{-2}; a quarter, U^{-3}; a minimum sequence of downs, U^{-4} (first through fourth; or first until the next first by the same or opposing side if less than four); a single play, U^{-5}; a sub-unit of activity within the play, U^{-6} (cocking arm to pass, passing, running, changing direction of running, blocking a tackler, catching a pass, kicking the ball, dropping the ball, etc.). Below this are further hierarchical layers--U^{-7} and so on--which get below the normal limit of focus (cf. §3.33) of the fans; these low-level elements would include muscle movements, heart beat (though the trainer might conceivably check this for some injured player), molecular movements, and so on.

If the analyst chooses to start with a different initial point, in reference to the experience of some particular participant, or because no predominant point of focus could be usefully postulated, then the same kind of symbolization would be used with U representing the new starting point. If, for example, he were to start with a fumble made by a player who played in the game for only a few minutes, dropped the ball, was removed from the game by the coach, and could remember little about the game but that horrible experience, then the analyst might for some purposes consider the fumble as U, that play as U^2, the two minutes' game activity of that player as U^3, etc. It is evident that participant status affects the focal hierarchy.

4.23 Hypostasis Formulas and Types

The units in the preceding paragraphs have been symbolized as members of an activity sequence in a structural hierarchy, with the units distributed directly into spots (§3.4) in larger units of activity. As such, $U = \frac{F}{D}M$ (§3.55) in which D includes this distributional factor. When, however, in order to give it separate analytic attention (for etic classification or analysis, or for statistical treatment, any unit of activity is abstracted from the kinds of purposive activity sequence expected by regular participants, this essential distributional characteristic may be temporarily ignored. In such an instance, i.e., in HYPOSTASIS (§4.15), the unit in its focal level is symbolized as U^o; participant focus (§3.32) implies attention within a normal hierarchical purposive context, whereas classificatory focus implies hypostasic attention on a unit abstracted away from such contexts.

In addition to the hypostasis of football statistics mentioned in §4.15, many other types of such abstraction appear in our culture: a quotation, abstracted from a lecture and repeated out of context; or a quotation of one's own speech, for example: I said "cat"; a word used out of its normal distribution, as if in the ifs on this page; part of a word referred to, as such, in grammatical discussion, for example: the suffix "s" of boys; the related usage of lexical elements by nongrammarians, for example: There are lots of isms; each of the entries ("words") listed in a dictionary; each of the vocal sounds mentioned as such in a general lecture on phonetics; practicing passing, by itself, in preparation for use of that activity in a football game; or repeatedly practicing a specific medical operation on a cadaver. The symbol U^o may be applied to each of these--that is, wherever the intent is to select any activity for analytical attention or repetition in a manner foreign to the purpose of the author of that activity, or without reference to its occurrence in the specific sequence of activities or kind of activity of which it is a part.

Nevertheless, the activity of hypostasis itself--the bringing to attention or the repeating of a unit outside its normal emic context--is in turn part of a structural hierarchy of activity. This activity sequence is an activity of analysis, rather than of participation in the activity being analyzed (see §4.4). Just as the dissection of a live bug to look at its parts destroys the part as a functioning part of the whole bug--and destroys the bug--so abstraction of parts of behavior leaves the parts in a different distributional matrix from that which they had before analysis.

Occasionally hypostasized elements are formally marked. Hebrew prayers, for example, when quoted for reference rather than being used for prayer are changed so as to prevent sacrilegious implications: in the prayer each word which begins with [h] is changed to begin with [k].*

Spelling words aloud is a form of hypostasis --the naming of parts of a formal sequence of letters normally utilized for reading as wholes. Here, too, special forms occur, since the naming or pronunciation of a consonant often carries with it a vowel not part of the sound sequence in the word spelled--as, for example, "b" pronounced as [bi] in spelling boy; or the vocalic and consonantal change in "h" pronounced as [eč] in spelling hat.

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*Communication from Prof. Abraham Kaplan, UCLA.

When the abstraction is part of the normal activity of the participants, as when the participating official signals that there have been four downs (counting their number without reference to the manner in which the particular downs were activity sequences or to the specific context in which they occurred), we will call it FUNCTIONAL HYPOSTASIS. When, however, some nonparticipant is abstracting elements in a manner not observed in participant activity, we shall call it ANALYTICAL HYPOSTASIS. If the analyst or reporter abstracts in the way that the participants do, then it is ANALYTICAL FUNCTIONAL HYPOSTASIS. When the coach after a game discusses with the players the movies taken of the game, his activity is in part of this type.

4.24 Modal Elements in Focus Formulas

Before treating participant types further, we will do well to observe that modal elements (§3.5) in the units can also receive hierarchical (or focus) symbolization. The potential for a "first half" of activity as a spot in the pattern of the football game, a spot to be filled by the particular playing of this particular half on this specific occasion, would be UD_s^{-2}, in which U is the official game as a whole, subscript $_s$ refers to the spot-characteristic of the distribution mode (§3.51), D symbolizes the distribution mode itself, and the $^{-2}$ exponent indicates a lower focal layer of that mode. UD_s^{-3} might be the quarter spot, UD_s^{-4} a spot for a sequence of downs, UD_s^{-5} the spot for a play to be selected by the quarterback, and UD_s^{-6} a spot for an optional unplanned variant in the execution of one phase of the play (e.g., cutting back to avoid a defense player who had evaded the offensive blockers).

A hierarchy of purpose might start from UF_p, in which the official game is U, with a total set of identifying characteristic features F, and the immediate purposive component of that complex is subscript $_p$ --the attempt to win the official game as a whole. On a higher layer, UF_p^{2} might be the attempt to win the championship of the Big Ten. On lower layers UF_p^{-2} might represent the determination to hold an aggressive, chance-taking, opposing team scoreless in the second half while they themselves play cautiously to preserve a lead gained in the first half; UF_p^{-4} might be an attempt through a series of plays to make enough yardage for a first down; UF_p^{-5} an attempt to gain yardage by a pass; UF_p^{-6} the attempt to evade a tackler.

With subscript $_m$ indicating one particular physical variant of form of the manifestation mode (§3.52) of the unit, UM_m^{-3} might be physical activity recorded by a camera and tape recorder during one of the quarters; UM_m^{-6} the bodily motion by which a tackler was evaded.

4.25 Diagram of Changes of Focus Height

If the layers of hierarchical structure within a unit are plotted on a graph, with the smallest internal unit layer as at the zero point horizontally and vertically, but the more inclusive units occurring on a higher level and extending farther to the right, focus differences can be symbolized by drawing a horizontal line at any level where a unit occurs. Note, for example, that in Figure 4.1 the attention may be centered at various levels--the season games, the specific game, the half, the play, or even molecular action.

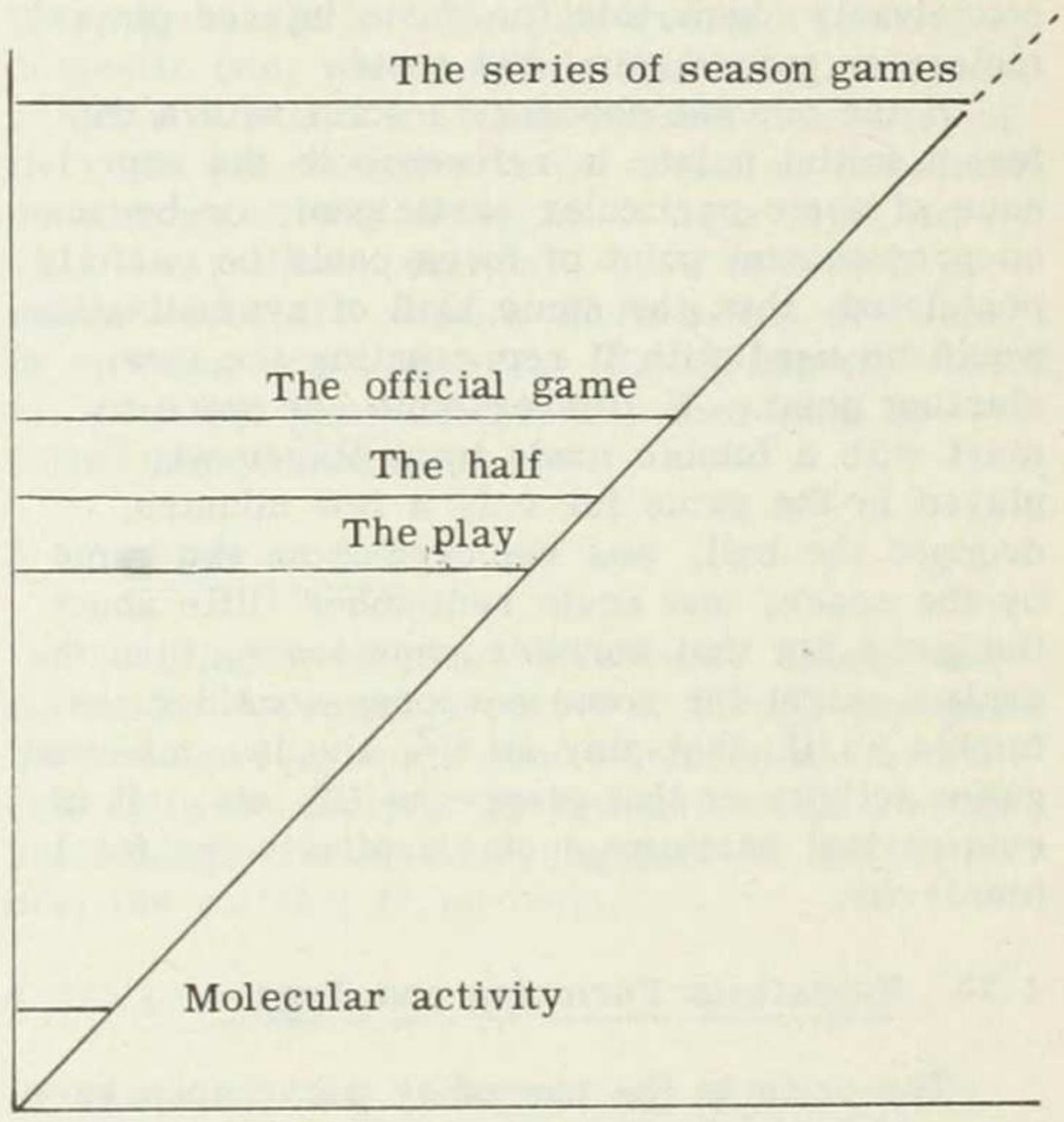

Fig. 4.1 Some Potential Heights (Levels) of Focus in a Hierarchy of Activity.

4.3 Depth of Focus

4.31 Shallow and Deep Focus

In photography the focus may be "shallow," so that--say--only those objects between six feet and seven feet from the lens are in focus while the remainder is blurred, or the "depth of focus" may be "deep" so that everything, for example, from eight to one hundred feet away is clear cut in the picture and in focus. Similarly there may be a CULTURAL DEPTH OF FOCUS so that numerous levels of the activity hierarchy are simultaneously in focus. Depth of focus can be seen in some quotations already given: 8/4/13 The third quarter, the second

half, just getting under way (where focus includes attention on the half as a whole and simultaneous attention to a quarter within it); or: 8/6/26.1 The fourth and final quarter of the ball game; and so on.

Depth of focus seems to be increased if the observer has a longer time to study the activity --that is, if he can study a record of it a number of times by seeing movies repeated, or by hearing a musical composition over and over again, or by re-reading a written account. Not only does the unit as a whole remain in top focus, but much more of the intricate details of the activity and the inter-relationships between those details can then be brought under attention without losing the simultaneous focus on, and the enjoyment of, the activity unit as a whole.

This focus characteristic, like the series of shallow focuses seen in Fig. 4.1, can be shown on a hierarchical diagram. In Figure 4.2, the lower limits of focus likely to be reached by many of the fans is set as point A, a maneuver within a play; top limit is arbitrarily set at B, the end of the post-seasonal Rose Bowl game. The relationship between points C and D represents one possible (culturally identified) focal depth likely to be used by some fans at some period of the game, a depth embracing a series of four downs in which each of the separate plays within the series is "simultaneously" in focus.

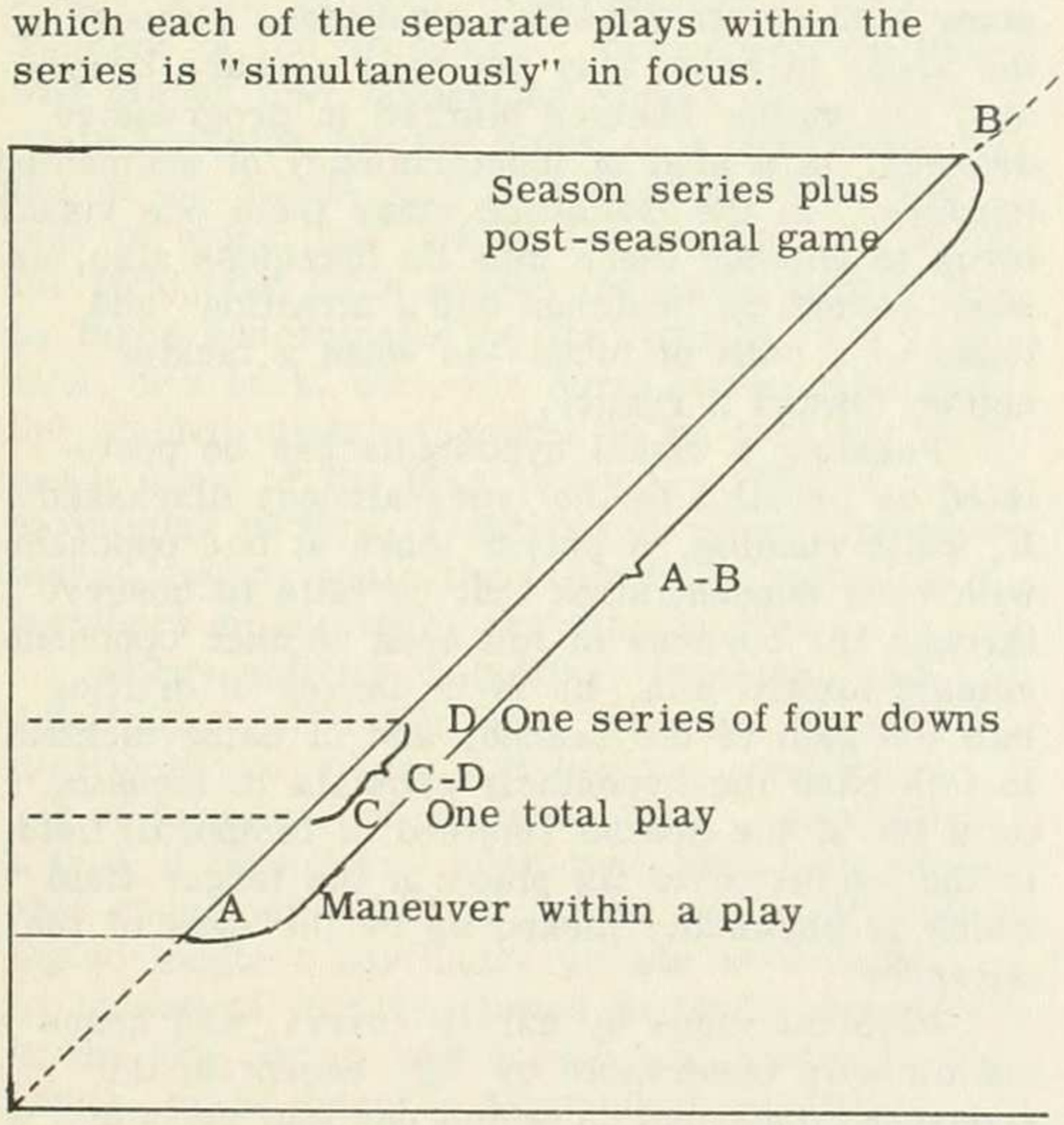

Fig. 4.2. Depth of Focus

A-B represents a large depth of focus, with brief activities simultaneously in focus with the season-plus-post-season activity. C-D represents a much smaller depth of focus (but one larger than D as a single top focus by itself).

4.32 Thresholds, With Lower and Upper Limits to Height of Focus

Limits to the lowest level of focus are set by the purpose of the participant or observer, but with a large margin of indeterminacy. When the controlling purpose of the church-goer was worship (§3.2), the lower limit of focus did not tend to go below "paragraph" size (whereas critical attention to the speaker's pronunciation would move focus lower, to single sounds). Similarly, in conversation of a non-technical type, where the purpose is communication, focus probably stays on or above the sentence level.

Again, however, there is considerable in-indeterminacy. In a room full of many people talking all at once, for example, the listener may be forced to ask for and to focus on the repetition of a single word--or syllable--in order to understand it. This instance, however, is probably best treated as a kind of hypostasis in which the hearer becomes analyst for a moment--and then, with relief, may repeat the whole sentence including the analyzed word, as he "shifts gears" back into normal communication status. Similarly, in the heat of the game, the attention of the fans is perhaps seldom directed to a focus lower than that of a maneuver within a play, except under hypostasis--as when a time out is called after an injury or for other reasons: 8/5/23.8 B-- is winded and so Michigan calls time out.

Whenever a certain change in focus is necessarily accompanied by a sharp change in observer attitude or participant type, we may say that a THRESHOLD must be crossed to pass from one to the other. Such a threshold is crossed when one passes from a participant kind of observation to an analytical kind of observation of the same events. When the focus is lowered to units (say, muscular or molecular activity) so small as to be outside of the range of observation by the football fans, another threshold has been crossed.

Scientists in a SYSTEMIC hypostasis (i.e., in the abstraction of one or more systems), may arbitrarily set upper and lower limits to their field of inquiry so as to be able to concentrate on a smaller body of data. This fact, in part, is what constitutes differences between disciplines. And this point of view, in turn, can be used to define one of the purposes of this book, that is, an attempt to demonstrate that for best results linguists must at times raise their focus to include nonverbal behavior as part of their data, and anthropologists must sometimes, and in some senses, treat language data within a single hierarchical structure along with nonverbal activity.

The upper limit to focus fluctuates greatly in accordance with permanent or temporary purpose and interest. It seems to be much less rigid culturally--i.e., the thresholds are often less sharp--than the lower limit (which is indeterminate also). The cultural evidence collected concerning this football game sets the highest focus at least as far back as the start of the rivalry between the football teams of the two schools in competition for the Little Brown Jug. In that connection the Official Program says: Next year will be the fiftieth anniversary of the rivalry that began just 49 years ago.*

A highest-level focus, however, often constitutes a hypostasis, i.e., when it is viewed without reference to the spot which it fills in the larger sequence of activity of which it was --or is normally--a part. Such a unit in hypostasis (U^O), however, may be large (like the series of games for The Little Brown Jug) or small (as in considering "the sound [t]").

The lower limit of total focal depth, likewise, is sometimes a large unit when, in hypostasis, past games are being discussed. In such instances the entire set of details of the specific activity sequence may be ignored or forgotten, and only the total outcome be focused on in retrospect. Thus, in the Official Program: The game was one of the most important ones of its time, for "the championship of the West" and it ended in a 6-6 deadlock. At the opposite extreme, a game and all its official activity and score may be temporarily out of focus in retrospect, and only the resultant state of one of the players may be in view: 8/2/1.3 The injured P-- is in there to start...

4.4 Breadth of Focus

4.41 Focusing Processes

The activity of bringing an item into focus is itself a unit of activity, but when the unit focused upon is spread over a period of time (as the football game ended more than two hours after the 60-minute "official" time began), the process of focusing includes the use of memory, with physical activity in the brain, and is not directly observable by us. For this reason we used indirect means (the objective study of concrete verbal utterances of the participants and of observers, as well as the observation of nonverbal behavior) to deduce the presence of, and the beginning and ending points of, the crucial units of focusing behavior in the experience of the participants.

In some situations, however, focusing as a physical act can in part be directly observed. A player may turn his head, or eyes, or both, so as to look at a teammate when we call to him. In such an instance, part of the physical activity of focusing is OVERT, rather than covert only. To a slight extent, the change of lens adjustment in the eye can be detected even without special equipment, as when a person is first observed to be staring into space or "looking through" a person and then has his attention attracted to something else.

Each overt or covert type of physical movement must ultimately enter into the analysis of activity into waves or segments of movement (§3.23). The emic focus of attention in vision need not necessarily be identical with the physical etic focus of the eye, however, since one may outwardly center the eye on one object, but concentrate inwardly rather on observing something quite different "out of the corner" of the eye--for example, in looking directly at one player, while attempting to keep track of another one elsewhere.

Here in spatial focus, as in a time sequence, the larger whole and the parts may be kept in some kind of simultaneous awareness although the areas in focus may not have a sharp boundary, but rather become blurred in progressive degrees, in a kind of indeterminacy of segmented borders. In the transition stage from one visual focus to another there may be fuzziness also, as when something "catches one's attention" and leads to a shift of focus--as when a tackler comes toward a runner.

Possibly a visual hypostasis can be postulated as parallel to the types already discussed. If, while running, a player looks at one opponent with such concentration that he fails to observe through the corners of his eyes another opponent coming toward him, he is in danger of drifting into the path of the second, and of being tackled. In this case the hypostasis consists in focusing on a bit of the spatial (instead of temporal) field to the exclusion of its place in the larger field which is physically picked up by the eyes of the observer.

Physical focus by ear is covert, and hence not directly observable by us, except in the grossest component in which one can see the head rotated in an effort to locate the source of a sound. By ear, however, there can be

*A higher focus is elsewhere in view in the Program, but probably should be treated as part of the spectacle hierarchy, rather than of the official game: The prologue to the Stadium Story...had its beginning in 1865 when cricket was all the student rage and the wickets were set up on State Street to block traffic and frighten horses until the complaints of Ann Arbor residents resulted in an appropriation of $50 by the Board of Regents for a playing field.

selectivity of attention which can be deduced by an objective study of the verbal utterances (naive or sophisticated) of the participants in an event, or by tests to determine the accuracy of their powers of discriminating components of sound. All of us experience the effort needed to pick out one voice from a roomful of speaking people. As it is for vision, so in hearing, the covert concentration focus can differ from the overt physical one--a person can be taking part in one conversation while really trying to listen more intently to another.

There can be hypostasis in hearing, analogous to that in vision, when a person concentrates on one component of sound so strongly that he is unaware of any of the other simultaneous sounds around him. Negatively one can train oneself to ignore an alarm clock; positively one can train oneself to focus quickly and consciously on the ringing of an alarm clock, a baby's cry, the snapping of a twig, an instrument playing a wrong note in a band. Whereas the average person can be taught to listen for a particular musical instrument in an orchestra, the conductor of the orchestra would seem to have a wide nonhypostasic focus, since he responds to the playing of the composition as a whole, but is simultaneously keenly aware of the product of the activity of each member of the orchestra. Similarly, the football player may ignore the shouts of a crowd, while listening for the voice of a teammate; the fan in the stands may be unable to "see" the play of more than one or two men at a time on the field (and often enjoys the game best if he by turns concentrates on the activity of a linesman, or a back, etc., for some time), whereas the trained observer seems to be able to "see" much more of the play at once--to follow a developing pattern of activity in which the whole makes sense, while the failures of individual members of the team are also in view.

Focus activity in tasting, touching, and smelling parallel the focus elements already mentioned for seeing and hearing, and each act of focusing, of whatever type, constitutes a unit of behavior. Each type may take noticeable conscious effort--as when one is attempting to locate a particular person in a crowd, or to see an airplane heard distantly somewhere in the sky, or to find a four-leaf clover in the grass, or to detect a misprint in reading a printed page, or to decide what the characteristic flavor is in the soup, or to answer the exclamatory question: What do I smell!

Here, as elsewhere, there may be homomorphic activities. The person looking at a page in order to proofread it may at first appear to be carrying on the same activity as a person studying the content of that same page. Yet everyone who has himself read proof extensively knows that a focus adjusted for misprints may at times completely fail to follow the contents--i.e., may fail to widen focus so as to include purposive elements. It is difficult to enjoy an article and to proofread it at the same time. The experience of typing seems to be similar. For example, I once had some work done by a typist who was an almost perfect "machine"; in some 250 pages there occurred only two stenographic copying errors--yet she also accurately copied a number of "obvious" mistakes in the manuscript which I had submitted to her. There is also an old story of a boy who was reading aloud to a class, and which illustrates the same kind of difference of focus in attention within auditory activity. The teacher asked the boy: What was the author talking about? To which he replied: I don't know, I wasn't listening.

4.42 Wide versus Narrow Focus

The incident comprised of the singing of the national anthem at the beginning of the football spectacle was a single unit, a sub-unit within the whole scene. Yet this incident itself was extremely complex in that many hierarchies combined to form a composite of hierarchies. In fact there were many sub-groupings of hierarchies which constituted sub-composites of the entire event.

One component was constituted of the hierarchy of vocal movements for the singing; another of the movements of the musicians during their playing; others: the arm movements of the conductor, the standing up of the fans, the taking off of hats, the saluting by the few military, the activity of the person who slowly raised the flag during the singing.

BREADTH of focus, or wide focus, is a term used here to suggest attention simultaneously directed to a number of different kinds of component hierarchies included in the unit under attention, such as those just mentioned.

Each of these component hierarchies of activity was in turn a composite of component activities: the vocalization included sound sequences which were produced by composites of simultaneous (or overlapping or sequential) movements of lips, tongue, vocal cords, soft palate and so on; the instrument playing included activity of lips, tongue, lungs, and different fingers (clarinet); the flag raising included activity of the arms; and so on. Further, each of the above composites was even more complex yet: they included the simultaneous covert complex activity of listening to the band and to the singing, that of watching one or more elements of the total flag-raising unit.

Focus on speech can be narrowed to include only the sounds, words, and phrases, or may be widened to include the hierarchy of the pitch sequences of the voice, or may be widened further yet to include general voice quality as well.

4.43 Relevance in Reference to Composites

It should be easy to see that if all components of the spectacle were to be treated on a par, that the data would be unmanageable, and a description hopelessly unwieldy and unintelligible. If an indiscriminate mixture were made, let us say, of the solemn voice quality of the announcer, with the movement of the little finger of the clarinetist, with the eye movements of a fan who is watching one of the ushers, no emic structural form would emerge from the description.

In order to avoid this chaotic result we must assume that there are SUB-ASSEMBLIES of component hierarchies, which bring together in analytical focus via sub-units of hierarchical activity those items which are structurally closely related. One such sub-assembly (or sub-composite) would be the total verbal activity of the announcer; another might be the total activity of fans singing, standing, and taking off their hats; another, the movements of the person raising the flag; and so on.

RANDOM movement would not be structureless, but would be movement relevant only to a hierarchical composite much larger than the official game as such--a part of personal activity--which does not forward the purposes of that activity which is in focus. For example one player, after dropping a pass, made a gesture of disgust with both hands toward the ground. This activity did not forward the ball, nor had it any connection with the official game; it was random and irrelevant in reference to the play. At the same time, nevertheless, that gesture was highly relevant in reference to the overlapping simultaneous hierarchy of that player's total personal or social participation in the game.

Part of the strategy of the game seems occasionally to involve an element homomorphic with random movement--the attempt at deceptively leading the opponents into the casual assumption that a small segment of activity of one of the players is random, irrelevant, or accidental, when actually it is craftily designed to provide a quick surprising advantage. This strategy is based on the fact that activity will appear "random" to the opponents if it seems to be an irrelevant manifested variant of a unit which includes a very wide range of variants--e.g., the variety of specific steps a player may use in taking up his position. Inasmuch as such variants are non-emic, they appear "aimless," since aim or purpose is tied to emic structure. Yet a structurally relevant activity is here disguised as a nonrelevant variant of a different emic unit.

Occasionally elements may appear to be so widely removed from the point of analytical interest as to be irrelevant, whereas later study may indicate that the ignored residue is relevant at an unexpected point in the analysis. It is the argument of this volume, we repeat in this connection, that nonverbal behavior as a whole is highly relevant to a theory of the structure of verbal behavior, and vice versa.

In general, relevance may be objectively studied if one assumes that a hierarchy is relevant to a second (often larger) hierarchy in which occurs a set of units with which the first is in some way regularly co-terminous or co-extensive, or with which it is either regularly, or predictably, or exclusively associated. The football player's motion of disgust is not predictably or exclusively associated with the dropping of a pass, but usually occurs, if at all, associated with some situation in which the person assumes that he or someone else should have acted in a more pleasing way. The fan's looking here and there is regularly associated with his activities during various parts of the spectacle, and is relevant to the hierarchy of the spectacle as such, as well as to the hierarchy of the fan's own personal activities and history. Voice quality (harsh, happy, sad, solemn), on the other hand, is not relevant on a syllable level, since it tends to change or be co-extensive with much larger linguistic segments such as phrases, or even a sequence of a number of sentences (a "paragraph," let us say). When a set of elements as one component of a behavior sequence occurs only when a second set of elements occurs--and especially if the two elements always begin at the same time and end at the same time--they are both relevant to the same larger system. This we observed in the relation of Junior church to Senior church.

Finally, two items which are regularly associated together in fulfilling a purpose--in reaching a particular goal set forth in advance--are both considered relevant to the purposive unit which includes this goal; regular association of units in activity which advances a person toward the fulfillment of his goal is evidence for the mutual relevance of those units.

4.44 Segmental Borders of Composites

We have previously seen (§3.2) that behavior consists of waves of activity, in which each change of movement direction, or of speed, or of acting body part, or of actor, or of activity

type introduces a separate small etic segment of activity, as when one's hand is waved back and forth (or the tongue goes up and down for [a-i-a-i-a]). This point of view can now be made more explicit for composites as wholes: A new etic segment is encountered every time a composite of regularly associated moving body parts, or of associated actors, is replaced by another composite, or is changed in direction, or type, or speed. For example, when a person stops talking and begins to run, a segmental change occurs since the composite of vocal-apparatus movements has been replaced by a composite of nonvocal movements (even though, as for the segment sequences discussed earlier, the exact border is often indeterminate). An etic segmental change occurs, according to the same criterion, when one person stops talking (i.e., one composite ends) and a second person begins (even though, if the second person interrupts the first, overlap may bring indeterminacy of borders).

In the spectacle there were a large number of segmental breaks between composites, at various hierarchical levels: e.g., when the Minnesota band left the field and the Michigan band came on; when extra members of the Michigan squad left the field, with only eleven of its men remaining there; each time a defensive platoon of players replaced an offensive one; when a running player cut back in a different direction; when a player held out his arms to be ready to receive a pass; when an official took the ball from one of the players; when the fans left the stands; and so on, down to such small composites as the saying of Oh! by a particular fan.

4.45 Segments as Simultaneously Members of Separate Intersecting Hierarchies

There was a vast interlacing network of activities represented in the actions of the official game, the spectacle, and the personal hierarchies of players, fans, officials, and other persons. The spectacle, for example, was witnessed by thousands of people, yet for each of them the witnessing of the spectacle was just one event in a whole series of events in their lives. If the analyst were to trace the hierarchical progression of the activities of the lives of ten of these people, each hierarchy would be different, but overlapping in at least this one point--their over-all attendance at the spectacle--but not in the minutiae of some of their facial expressions, for example, or most of their verbal utterances (though, in cheering, students shout in unison), restless activity, and so on.

In general, then, we can summarize the principal elements of focus analysis by suggesting that the study of the breadth of focus indicates the composite range of diverse component hierarchies included in attention at any one time; depth of focus covers the degree of simultaneous attention on both the high and low hierarchical units of one or more hierarchies; height of focus indicates the temporal size of the hierarchical element cut out for attention from a particular sequence, or the particular place of such a unit in a hierarchy.

4.46 Composites in a Matrix

The behavioral setting within which any one activity hierarchy (or unit thereof) occurs is a complex of such hierarchical composites of activity. The behavioral spectacle of the football game is comprised of a NETWORK OF INTERWOVEN HIERARCHIES of activity. The activity of one fan or one player provides one component of the larger activity of a more inclusive hierarchy,--that is, part of the setting within which it occurs, in reference to which it is viewed or focused upon, and along with which it is simultaneously hierarchically structured.

In diagramming a kinship system the chart of the systems may at first appear slightly different, if one begins by focusing attention on, say, a female child as "ego," from what it would appear if her father were set up as being "ego." The two charts, to be sure, would be very closely correlated. If, now, the individual geneologies of two hundred randomly selected individuals from a small community were separately plotted and then superimposed one on another, the composite chart would symbolize an intricate network of partially overlapping relationships in which a newcomer to the community would not be as closely related to the older members as they are to each other. Similarly, the hierarchies of activity of persons at the spectacle form a network. Persons who are of a similar participant type (say, all the fans seated in Row 70 of Section 41) may engage in activities (e.g., looking in such and such a direction during a touchdown) which would overlap heavily. A charting of the activity hierarchies of an adequate number of persons of different participant types (fans, officials, coaches, quarterbacks), then, would lead toward an understanding of the pattern of the enormously complex network of activity which comprises the behavioral component of the spectacle as a whole.

The total MATRIX or "field" within which any one composite occurs, however, includes not only (1) this larger network of simultaneous hierarchically-structured human activity, but also (2) the products or the behavior of products of previous human behavior which are structured

relevant to the official game (e.g., the stadium, playing field, goal posts, whistle, horn, or "products" constituted of the achievement of points, touchdowns, past victories--or of status such as winner of the toss of the coin), or not so structured (e.g., coats, hats, cigarettes, blimp, coffee urn), and (3) the presence or behavior of nonhuman elements which are not products of human behavior (e.g., that of stray dogs, the shining sun, drifting clouds, blowing wind, or of molecules, and so on).

Many of the elements in the matrix of human behavior, like that behavior itself, are also trimodally structured. The demonstration of this part of the theory, however, will not be attempted here. We proceed rather to discuss in detail the structured units of human behavior itself.

4.5 Bibliographical Comments on Chapter 4

The whole problem of focus as treated here, and the ability of a person to select for attention one complex of elements of activity out of a total matrix, with variants in the time span, breadth of composites viewed, and clarity of details within a large pattern, could be profitably studied in comparison with the figure-ground situations analyzed by the gestalt psychologists. Since this chapter was written, for example, I have read Koffka, 1935, and find in his treatments of simple spatial figures, and other matters, a number of illuminating parallels.

Compare discussion of hierarchy, in preceding chapter, §3.62.

The term hypostasis is taken from Bloomfield (1933, p. 148), where he refers to it as 'the mention of a phonetically normal speech-form.' Our approach, however, refers the hypostasis to its function as an abstraction from a much larger systemic structure, rather than to repetition or mention as such.

The theory of games, as developed by mathematicians, has as its goal something quite different from that of the description of this football game. 'The chief problem of the theory of games is thus the problem of distinguishing good strategies [i.e., for winning, etc.] from bad' (McKinsey, 1952, p. 98), whereas the chief purpose of our approach is to study the structuring of the patterns of behavior which go into the playing of the game. Yet the two approaches are not mutually exclusive, since the theory of games must study something of their structure in order to find optimal strategies, while our structural approach must include among its components the intention of players to choose a strategy which will be aimed at winning. In addition, the mathematical theory of games, seen from our point of view, embraces a significant attempt at an etic classification of games and of game strategies and structures. On the other hand, it cannot at present handle within its detailed formulas games as complex as football, since the possible permutations of possible choices of play are too many. In addition, it is not set up to handle complications introduced by the activity of the fans in the spectacle, and so on.

CHAPTER 5

THE BEHAVIOREME

In Chapter 1 we argued that a theory of the structure of behavior was needed which would allow the treatment of verbal and nonverbal behavior within a single framework. Chapter 2 indicated that such a theory would need to treat of behavioral structure in reference to the difference between a physical or cross-cultural etic approach, and a functional mono-cultural emic approach, with emic units constituted of points in a structural system to be discovered by the analyst in one culture at a time. In Chapter 3, and again in Chapter 4, one large behavioral emic unit was studied. Both the church service and the football spectacle contained a large enough variety of materials, verbal and nonverbal, to test the possibility of crossing over the linguistic-nonlinguistic border without serious jar, while treating these elements as structurally integrated parts of a single unit rather than as a mere aggregation of components of essentially distinct, non-interlocking, systemic types. Both of these units, furthermore, were sufficiently formal and repeatable to allow us to find a relatively rigid structural framework within which their variants could without too great difficulty be seen to operate.

The theory indicates that for adequate description and understanding one must start with some knowledge--even if crude or incomplete--of large units of behavior before studying smaller units within them. Chapters 3 and 4 helped us here, also, by allowing us to apply this general principle to the presentation of material in this volume: in each of these chapters, one concrete illustration of a large behavior unit served as a context within which details of the theory could begin to emerge without forcing the reader to memorize long lists of definitions of terms, dependent one upon another in the structural hierarchy of the system in which the first term of the series is not adequately understandable until the last is known. Now, however, we are ready to turn to the more formal discussion of parts of the theory. Chapter 5, then, will define in more technical terms the kind of emic unit represented by the church service and the football spectacle, and Chapters 6 through 11 will describe certain sub-units within the large ones. In order, however, to test the approach on material which appears to be less rigidly structured than the church service and football game, we will use for further illustrative material excerpts from recordings of a series of family breakfast scenes.

5.1 The Behavioreme Defined

A unit of behavior such as the church service or the football game we shall call a BEHAVIOREME (or an EMIC BEHAVIOR CYCLE). At the end of this name is the suffix -eme, which is generalized from the ending of the well-established linguistic term phoneme (just as the term emic, used in Chapter 2, was abstracted by us from the term phonemic). This suffix has received wide usage, especially since Bloomfield (1933), and it is almost certain to become one of the productive suffixes of our general English vocabulary, in linguistic circles at least; it is also convenient in some contexts to use EME as a noun, meaning an emic unit. The nonlinguistic reader should note, then, that it is worth considerable effort to understand the way this useful suffix is entering the literature. To be sure, its use is sometimes too frequent, or applied when other terms are available, or used awkwardly, but such infelicities should not lead us to refuse to use the term at all, since a judicious application of it may allow us very economically to signal to the reader when we have moved from nonstructural or etic grounds to a consideration of similar elements within the framework of an entire emic system.

As a first approximation of the meaning of the term behavioreme, we suggest that it be used to label an emic unit of top-focus behavior which is related to its cultural matrix in such a way that cultural documentation may be found for its beginning, ending, and purposive elements. We need a more rigid description of the behavioreme, however, which makes more explicit some of the characteristics of its internal structuring in relation to the emic system of which it is a part. The following will give us a closer approximation to such a description:

> Definition: A BEHAVIOREME (for an emic behavior cycle) is an emic segment or component of purposive human activity, hierarchically and trimodally structured, having closure signalled by overt objective cultural

clues within the verbal or nonverbal behavior of the domestic participants or domestic observers, and occurring through its free or conditioned, simple or complex variants within a behavioral system (or composite of systems) and a physical matrix which are also emically, hierarchically and trimodally structured. A verbal behavioreme is an UTTEREME (§5.5).

The various components of this definition have all been discussed, tentatively and illustrated in earlier chapters. References to the pertinent sections are these: emic characteristics, §2; segmentation, §§3.2, 3.42, 3.61; purpose, §§3.53, §2.2, §4.1.10; hierarchical structuring, §§3.31, 3.62, 4.14, 4.45; trimodal structuring, §3.5; closure and objective cultural clues, §§3.35, 2.73 (and see also focus, §4); domestic participants, §§2.11, 3.32; 4.23; variants, §§2.3, 3.52; emic system, §§2.5, 2.6, 2.74; composite, §4.4; matrix, §4.46. Additional discussion of many of these points in later chapters will gradually sharpen up our understanding of them, but in the meantime the earlier descriptions help us to get a preview of many of the important parts of the theory as a whole.

5.2 The Behavioreme Illustrated by a Breakfast Unit

As a further illustration of a behavioreme I have chosen mechanical recordings of "family breakfast" scenes. For the first recordings of these breakfasts the microphones were hidden, and the children of the family being studied did not know that recordings were being taken; later the microphones were in sight (where higher fidelity recordings could be secured), and caused some comment--but after eight weeks of work the novelty had worn off, the equipment rarely caused comment, and as nearly as I could tell did not often interfere with completely normal expression--from laughter to tears. Similarly, there was little interference caused by the notations which I was making simultaneously concerning nonverbal activity. In referring to these recordings, below, the letter "B" indicates the breakfast materials, the first number signifies the arbitrary file marker of the incident--a different breakfast occasion, for example--and the remainder identifies the place on the record where it is heard; M--represents Mother; F--, Father; J--, a girl of twelve years of age; B--, a girl of seven; S--, a boy who turned four during the period of recordings.

The following verbal elements are typical of those comments which contribute cultural evidence for the total breakfast unit as one with closure. First we give samples, from a single record, signalling that breakfast is about to begin that day: B84/1.2 M--: B--, would you please bring in the little white pitcher? B84/3.6 M--: Children! [i.e. Come, with calling intonation]. B84/4.8 M--: B--, it's late! [so hurry]. B84/4.9 B--: We're having dry cereal? B84/5.4 M--: All right... [we're ready now, let's begin]. B84/5.5 F--: Sit down, B--. B84/5.6 F--: Father, we thank Thee for Thy blessings. B84/6 M--: There's your cereal B--. B84/6.7 M--: Pour Cheerios into your [bowl, and start eating].

Nonverbal elements that signalled the beginning that same morning included setting the table in preparation for breakfast, ringing the breakfast bell (B84/1), opening a box of dry cereal, sitting down at the table, toasting bread while at the table, and so on.

Various bits of evidence signalled the end; for example: B84/2/5.1 S--: I'm done, I beat you!...I beat Daddy! B84/2/6.2 S--: Could I be excused? Can I Mother? M--: No, not now, we're just about ready for worship. B84/2/6.7 B--: We have just a few minutes, ...we got to get to school!

Nonverbal evidence signalling the end includes the fact that persons leave the table, the washing of the dishes, etc.

One of the most interesting evidences of closure of sub-units included in the breakfast materials is the way in which S--, on an occasion when he is being fed by F--, will refuse to take a bite in the middle of an utterance (or even, at times, a series of utterances on some topic) but will dodge to avoid a proffered spoonful until he has spoken fully, then will accept food easily. That is to say, he resists interruption. Cultural evidence for such resistance, or cultural evidence for hesitation or the unfinished nature of a unit, constitutes evidence that some behavioremic pattern is under way but is uncompleted. Note, for example, the following (B69/21):

S--: Daddy, I want the floor! [Shouting, in the midst of an uprorar over the description of a fight at a hockey game; the children had been taught to take turns when too many wanted to talk at once]

F--: OKay, S--, you've got the floor.

S--: [Starts shouting a tale, too loudly to be heard clearly]

M--: All right, now, we'll listen. Speak softly.

S--: [Quietly] Once upon a time... [starts a story about a boy hunting tigers]

B--: Sugar please J--.

S--: [Shouts] Stop interrupting me!

M--: Just a minute, no she can get the sugar, that's all right, she isn't really interrupting, continue.

S--: Oh. [Quietly] And know what? [Story goes on]

Similarly, the numerous calls by S-- in Record B37 (Daddy, go on with the story) are evidence that the story was an included unfinished behavioreme in process of development. In this particular instance, furthermore, the story was not finished on that day, but on several succeeding days a continuation of the jet-plane story was called for (B40/10.1, B49/5.7), so that here the included story-telling behavioreme was partially included in each of several breakfasts.

Through the characteristics of its feature mode, breakfast is identified as breakfast, or contrasted with dinner and supper, by features of the matrix in which it occurs (especially by the time of day), by the menu (fruit juices, and usually by cooked cereal--although dry cereal might occasionally be found at breakfast or at a light evening supper, say on Sunday night), and so on. Purpose, present in every behaviorereme as one of its identificational-contrastive features, is detected, also, in the cultural evidence: 43/1.1 J--: Excuse me, I'm thirsty [Begins to drink her milk, before the official opening, on a dinner record]. At times, however, the purpose is not to satisfy immediate hunger, but to care for one's future needs even if one does not feel hungry at the moment. In these materials the purpose is sometimes provided by proxy, from F-- or M--, and received through (partial) obedience, on the part of the children: B73/4.8 M--: ...It's very good; B--you're just going to have to learn to eat more. B--: I'd rather drink vitamins instead of having to drink oranges.

The manifestation mode of the breakfast eme is seen through its particular physical variants--i.e., in the differences and likenesses between breakfast on various days. The variants may be free, with differences not caused by the particular environment: breakfast conversation, for example, may range over various topics without reference to the immediate environment. On one particular day (Record B18), pre-breakfast verbal elements included S-- discussing a neighbor boy; B-- and S-- singing to themselves and discussing a bassoon with F--; and M-- signalling There now [we are ready]. Official breakfast elements included grace said by M--; discussion of clothes by M--, J--, and B--; problem of getting slippers back on S-- discussed by S--, M--, and B--; memory verses by J--, but with interrupting verses by S--; interjected elements regarding toast, etc., by various persons; discussion of the making of napkin rings, by J-- and M--; of report cards, by J-- and M--; of eating needs of S--, by F--; of water boiling in altitudes, by J--, F--, M--; taking of written notes by F--. Meanwhile, pre-breakfast nonverbal activity included B-- ringing a bell to call the other children to the table; S-- gesturing to the neighbor's house; M--putting away the ironing board; B-- putting on a dress; S-- moving his chair, and playing with plate and spoon; M-- opening refrigerator and pouring milk, then mixing and serving the cereal and scraping out the cereal bowl, and putting the toaster on the table. During breakfast proper this variant includes physical nonverbal items in which M--works the toaster, eats grapefruit; J-- looks for slippers for S--, B-- daydreams (with chin cupped in hands, elbows on the table); F-- gives cod-liver oil to S-- in drops; J-- gets socks for S--; B-- runs to J-- to whisper in her ear behind cupped hands, then gets Kleenex from kitchen, for her nose; M-- finishes fruit and puts it to one side, then butters toast, and passes it; etc.

On other days the activity may be different, but still freely variant. On still further days, however, variants may be conditioned: on Saturday morning, for example, breakfast may start a bit later, and does not end with a slur into school-going activities. Complex variants also occur, in which one of the spots normally filled by a single segment is filled by a sequence of segments--e.g., when in B84/11.8 J-- arrives late, says grace silently, and then has her breakfast activity merge with that of the rest of the family behavioreme.

The distribution mode of this emic unit contains a number of spots filled by relevant classes of items. The pre-breakfast preparations, in this data, often include the playing of Tschaikovsky's Fifth Symphony on the phonograph to wake the children up to get dressed for breakfast, the calling of the children to come, the sitting down to the table. Then the official breakfast opens with a spot for the saying of grace. This spot may be filled in two major ways, one of which is the offering of prayer by the active family head (the father, or in his absence, the mother), while the other contains two subspots which are filled respectively by the active head's request, directed to another member of the family, to say grace, and the saying of grace by that member. In general, there is next a spot for eating fruit or drinking fruit juice, although S-- may be required to delay his until his cereal is eaten, as an inducement to hasten the latter (e.g., B40/6.6). Toast eating fills part of a larger composite spot which also embraces a spot for cereal eating; the two sub-spots for toast and main course (usually cereal-eating) are not fixed in a definite time sequence, but mutually interrupt each other. Simultaneous with the fruit-eating and main-course-spots--but specifically excluded from the spot constituting the official opening of the

breakfast, already referred to--is a large spot for general conversation. Occasionally this verbal activity is closely integrated with the nonverbal activity; e.g., B84/6.2 M--: May I have the bananas please? ... Thank you. Or J--: Don't blow bubbles here at the table, B--! Or B84/11 M--: Where's your napkin, sister? Go get something and wipe that up.

More often, the conversation was unrelated to the eating--so much so that except for occasional quiet asides or interjected bits one would scarcely know from the conversation that a meal was in progress. This conversation is itself trimodally structured, but without rigid, repeatable organization of its major features from day to day. The most prominent spots are those for give and take, i.e., utterance and response, between two speakers. A larger grouping is characterized by a series of such exchanges between two or more speakers on a single topic, or on merging topics (where one topic changes to another through association with some minor point in the first).

A series of this type may be broken--i.e., desire for a new spot may be signalled--by an interruption from a third person so as to change the topic and the immediate speech participants. Similar change of conversation unit can be signalled, without change of actors, by special vocal cues, of which one of the most frequent is change of voice quality: B84/2/12.9 B--: [With change from normal tone to low, shocked, husky warning] Hey S--, take that [Ping-pong ball] out of your mouth! B84/7 [After a pause] B--: My gourd is getting bigger! [With excited happy voice quality, changed from a rather apathetic refusal of bananas on cereal: Not right now] Or B84/9.4 M--: Well what kind of a day do you think it's going to be outside? [With cheery brightness of voice]

During the main part of the meal, before the official major closing spot, conversation types--or parts of conversations--occur which on occasion it is convenient to label etically as (a) merging (where two conversations become one, as one pair of speakers stops its discussion and joins the other), (b) diverging (where two people break off from a conversation involving more people, and carry on a simultaneous but different discussion), (c) simultaneous (two conversations at the same time), (d) overlapping (simultaneous at the end of the one discussion and the beginning of the other), (e) interrupted and unresumed, (f) resumed (whether from a preceding day, or from a moment earlier, to constitute the last part of a discontinuous type), (g) discontinuous (with attention focused on two or more noncontiguous parts) (h) inserted, and so on.

In order to indicate the way in which a single breakfast table conversation can illustrate the complex interweaving of a number of these characteristics, we give here excerpts from Record B37, beginning right after the official opening of the meal (B37/5.8):

... [B-- talking about a book. S-- calls for attention, overlapping on B--, who continues talking for a while]

S--: Daddy, Daddy, Daddy, Daddy, tell a story about a jet airplane and about a cowboy in that story, will you please? [With the topic stimulated by a picture of a zooming jet airplane on the cover of a book beside his plate]

... [B-- still persists; S-- calls again and gets the attention of F--]

S--: ... a story about a jet with fire in it, and about a cowboy on it. [The cowboy part stimulated by his general interest, and a cowboy suit] and an airplane.

F--: Well, if you eat your cereal well, maybe I'll tell you a story. [Note indication of purpose of this sub-unit, from parents' point of view]

... [A bit of discussion, before commencement]

F--: Well, I tell you, there's the book so you can see a picture of what it looks like... [Further bit of laughter and settling down] Once upon a time, Mother, there was a cowboy.

M--: Oh!

S--: Jet [?] cowboy?

F--: And the cowboy's name was--What was the cowboy's name?

M--: What do you suppose is a good name for a cowboy?

S--: S--!.

M--: Why, say, Daddy, I think that'd be a fine name for a cowboy.

F--: Then the cowboy's name was S--.

M--: Oh he was a brave cowboy Daddy, I'm sure he was.

F--: And, ah, so--

M--: Come on, J--. [Note inserted conversation unit, as J-- comes to the table]

J--: I'm coming.

M--: [to J--] Don't you think it would be nice to wear something else today? How many days in a row have you worn that?

J--: I just wore it--yesterday!

M--: Wa-- [Starting to speak in middle of last word of J--, stopping, then continuing after J-- is through] Was it just yesterday Honey? I always enjoyed, ah, changing, wearing one thing one day, and then another thing the next, and then changing it just a bit to wear the--wear the thing of the day before, two days before, a little bit differently--

B--: You wore that yesterday! [laughing]

M--: That's all right, she can wear it today if she [B-- begins to talk] likes.

B--: I mean YOU wore what you have on. [S-- begins talking]

S--: ... tell the story.

M--: Oh, yes, I wore this yesterday too. Now here--

F--: [Overlapping with end of last utterance of M--]--down in his jet airplane.

J--: Mommie! [Calling for attention, starting new conversation unit which then is simultaneous with the story]

M--: [to J--] Yes honey.

J--: My hands look better.

M--: Oh they do darling, what'd you do?

J--: I scrubbed them last night and put [remainder drowned out by B--]

B--: Ooh! It doesn't smell so good! Guh! [...?]

J--: And, ah, my face... [Balance drowned out by S-- talking simultaneously to F--]

... [?]

S--: Daddy, go on and tell the story.

M--: [Further partially overlapping comments with S--]... That's right, you've been neglecting your face, and I think that's the reason you've had more trouble. It's amazing what soap will do, isn't it?

J--: May I have the sugar, please.

B--: Ok, but just--

... [Further discussion about soap]

J--: May I have, ah, --

M--: --the sugar? [With utterance begun by one speaker completed by the other]

... [Continued discussion about soap, and creams, overlapping again in the last several utterances with S--]

S--: Daddy, go on and tell the story!

F--: Ohhh kay.

J--: ...[Tapers off soap unit, mostly unintelligible]

F--: So, --

S--: Go on!

B--: Go on! [Gruffly]

M--: Please Daddy! [To B--, hinting, to soften voice quality]

F--: So, this cowboy S--, he went out and he got himself into a--jet--airplane, where--

M--: Could he--could he drive the airplane? Was he the pilot?

F--: Oh, he was the pilot, Mother.

M--: Oh he-- [interrupted by F--]

F--: Oh he knew how, because he had learned to drive co-- drive cows, you see [laugh]; and when a cow is running [special voice quality for impressiveness] down the field and its tail is on behind, why it's just a jet plane. [Laugh]

S--: Eh! Cows aren't jets!

F--: Oh no, they're not, are they.

... [Further discussion of same topic]

F--: So he got in the jet airplane, pulled the lever [Sound imitating a motor], out came the jet [plane noise] off it went!

S--: And it made some fire.

...

S--: And it went so fast it came bumpin' an' crackin' and crackin', make--ah--that it bust to pieces.

... [Further discussion of jet]

S--: I saw a jet flying over my head when it was dark.

J--: Did you?

S--: Mhm. With a flashlight.

B--: You don't need a flashlight to see those junks.

M--: What did we look for with a flashlight over in Australia? [Conversation diverging, switched on term flashlight]

S--: Ah, mm. Possums.

M--: Possums, wasn't it.

B--: Not pirates! [laughing]

M--: No, possums...

S--: And it made some noise like this, pxxx!

... [Further discussion of possums]

M--: Who brought us some baby possums to see?

S--: A--.

M--: A-- did, yes sir, A-- then brought us some lovely baby possums to see.

B--: Mommie, what was that boy's name that S-- was playing with [in Australia]? [Conversation shifts again, to new sub-unit, switching on the term name in reference to Australia]

M--: What was tha-- Who was that boy that let you ride his tricycle every now and then?

S--: John! [With vowel of John pronounced faily well back in the mouth]

M--: Yes, John, he is a lovely boy, isn't he?

S--: He's living over there. [In reference, now, to a house across the street]

M--: That's another John, isn't it?

S--: Uh huh, there's two Johns, isn't there? [With vowel of John much farther front]

M--: Yes.

M--: Who was the one that you played with over in Australia?

S--: John. [With front vowel]

...

M--: [to F--, a moment later, with change from participant focus in discussion with S--, to analytical focus in a separate analytical etic discussion with F--] You know when he first referred to J-- D--, his vowel in 'John' was much farther back than it was when he referred to the one across the street.

F--: Oh. [apathetic voice quality]

M--: At first, then after he'd said the one across the street then his--when I asked him again about the one in Australia, he-- [F-- overlaps last word, cutting it off]

F--: This morning, you mean just now?

[Voice quality change shows interest picking up]

M--: Just now!

S--: Mommie, I saw A-- climbed up in a tree and got that possum out and he--and the possum let me love him.

... [Further discussion of this topic; then J-- starts an aside with M--, carried on while S-- continues to chatter; B-- then begins to talk to M--, at which S-- overlaps to bring the conversation back to the jet]

S--: Daddy, GO ON WITH THE STORY!

F--: Oh, ... we'll have to go on [Note resumed unit] with the story, won't we?

B--: Yes.

F--: So, where were we?

... [The jet story picked up; interruption for toast; presently S-- adds a bit to the plot; then--]

S--: Daddy, tell the story, I don't know this story.

...[Story discussion continues, with all members of the family participating; S-- makes noises to simulate the plane, which brings on a discussion of noise making, with requests that M-- make some--which she postpones until she can be in private]

F--: You know what he was loking for in the moon?

S--: What?

M--: A kookaburra? [Stimulated by earlier discussion of Australian animals]

F--: Cows! Because he was a cowboy.

J--: Oh, honestly, Daddy. [Disgusted voice quality]

... Discussion of hunting and methods of calling for cows. The cowboy decides to call the man in the moon to help

F--: ... and how do you suppose he called for the man in the moon, how do you suppose he'd do that, Mother?

J--: I have no idea.

B--: Daddy, no idea.

F--: ... How do you suppose he'd do that, Mother?

B--: [Screams] Mommie--

M--: Do you want me to be thinking while you write? [Change of focus; reference to analytical note taking]

F--: You be thinking, Mother, while I turn this thing.

B--: Mommie, D-- says they called the man in the moon with a kookaburra noise.

M--: [Friendly laughter; with B-- laughing while talking; and J-- commenting] ... sounds almost as bad as a peacock.

...[This in turn leads to a discussion of peacocks, their noises, and people who have owned them; overlaps with S--, again calling for the story to continue. Adventures on the moon follow, climbing, falling, making a more mobile tiny jet, etc.; S-- and B-- make contributions to the plot, also]

F--: [to S--] No, put the bell down. [I.e., an interjected command] So he looked all over the moon and finally what do you suppose he saw?

S--: A rabbit. [Mentioned first in comment by B-- a moment earlier]

F--: You drink your milk and I'll tell you [Returning to the interlocking of the jet theme with the total breakfast behavioreme, with its purpose to get needed food to the children, and the story as a mechanism for that]

B--: The man in the moon! [Last word overlapped by M--]

M--: I think that we need to have our vitamins, don't we? [Joining general topic of needed elements in the feeding, introduced by reference to the milk]

S--: Daddy, will you take [for] me two [spoonfuls]? I [w]ant two, Mom. I [w]ant two. Mommie I want two. Daddy I--Daddy, Daddy, when you weren't here I took two, two.

[On last word, F-- begins, but stops as his first sound overlaps on S--, then begins again. Further discussion of the vitamin topic follows, ending with various play noises of B--, then--]

S--: Daddy, know how--kitties--drink their milk?

F--: How do they drink their milk?

S--: Like this-- [demonstration]

... [Discussion of kitty topic; toast request; further play noises by B--, e.g., voiced velar implosives in sequence; S-- again asks for story; B-- asks for it in Spanish; the story begins; J-- gets 'motherly', asking B-- if she should take away her milk and drink it; a considerable pause, then S-- changes the topic]

S--: Daddy, there's really snow on the ground, see? Daddy want to come and see?

F--: See what?

S--: Snow on--on the ground.

F--: Oh, I'm telling you a story. [Note indeterminacy of beginning of new unit, as old continues for a bit]

B--: See it?

S--: See?

F--: Oh, isn't it pretty?

S--: Yes but we can go outside-- [Not finished talking, but B-- interrupts]

B--: We aren't... [B--continues on, but S-- starts again, raising his voice loudly to shout down B--, who cannot be understood now]

S--: Daddy, will you help us build a great big [B-- tries again, not intelligible] snow man?

F--: Well, maybe sometime.

S--: OH BOY!

F--: Back in your seat son. [After they had arisen to go to the window].

J--: Now am I?

S--: B-- know what Daddy's going to do for us? [F-- simultaneous with end-- Pass the sugar please]... He's going to make us a big snowman. OH BOY [Ends with a long high squeal]

M--: I don't think that Daddy's going to have time to do that, tomorrow. I doubt it, because, ah, you're going to your Christmas party, B--. [Note topic change, turning on this reference]

B--: At one o'clock.

M--: At one o'clock. And Judy is going to go to the Christmas practice tomorrow afternoon.

S--: Me too?

M--: Oh Daddy! What about his eyes [Note further topic change], for tomorrow. Do you suppose they'll be all right to play?

S--: I don't think you better put any more medicine in them.

M--: Oh, I have to put lots of medicine in them to get them so that they'll be all right.

B--: Mommie, ah, what does S-- have in the part, in that part in the Christmas program? [Note continuation of the Christmas topic]

M--: He doesn't--he's going to sing a song.

J--: What time is it? [Introducing new unit]

S--: I sing a song. [Continues old unit]

M--: About quarter of eight. [Note interweaving conversation of M--/S-- with that of J--/M--]

B--: Is he going to sing one by hisself?

M--: No.

J--: Should I comb out my hair--

M--: Oh yes.

J--: --or get in the car first.

M--: Yes.

S--: Mommie I sing--

B--: [...] while ... still doing it may I get my things in the car?

S--: Mommie, Mommie. [Call for attention in the whirl of rapidly changing topics and rapidly changing speakers, as various items become simultaneous and cannot be separated in the record. Then--]

M--: Well shall we clear the table?

... [Some mixed discussion of the Christmas program continues; the song is practiced; decorations needed for the school Christmas tree are discussed; and the breakfast is officially closed with family worship--Bible reading with discussion of the topic read, and prayer]

Returning, now, to the breakfast as a whole we note that the total breakfast, as part of its distribution mode, has a spot-filling function in the total activities of the day. It follows getting out of bed, precedes going to school, and so on.

The physical matrix in which the breakfast scenes were embedded, on the other hand, includes the house with the dining room, table, chairs, toaster, cups, bowls, window shades; the kitchen with stove, sink, pots and pans, drawer for spoons, etc. In terms of our perception of them, we note that these physical items have a distribution mode via the wider setting in which they occur with a physical hierarchy in the size of environment focused on (from cup, to room, to house, to community, etc.); a feature mode in reference to the contrastive differences (culturally formulated) between bowl and plate, or dining room and kitchen; a manifestation mode in reference to the precise way in which the table setting differs from day to day, or variants in the heat of the stove, the cloudiness of the sky (partially correlated with amount of artificial light or time of year), and so on.

5.3 Included Behavioremes, Minimum Behavioremes, and Hyperbehavioremes

The breakfast scene which we have just discussed constitutes a variant of a single behavioreme; it contains within it all the elements to identify it as such and to contrast it with other units of the same general class such as dinner or supper. Yet, as we saw abundantly illustrated in the quotations from Record B37, there are elements which are smaller than the breakfast as a whole, but which are included within the breakfast scene and which themselves also contain evidence of closure, purpose, and structuring of the type which identify them as behavioremes. This forces us to conclude that within a large behavioreme there may be INCLUDED BEHAVIOREMES which are smaller than the behavioreme containing them, but which are analyzed as behavioremes on the basis of the same kinds of criteria. Thus, the various conversational units referred to in our discussion of Record B37 are probably best treated as varieties of verbal behavioremes included within the breakfast eme; a single complete utterance such as yes is a much smaller included verbal behavioreme. Similarly, one may argue that the receiving and eating of a piece of toast is a nonverbal behavioreme; although it would be a verbal-nonverbal-composite included behavioreme if one handles the verbal request (that the toast be passed) within the total pattern.

If behavioremes may be included within behavioremes, the question then arises: Are there lower limits to the size of behavioremes? This question is a very important one for theory and practice, since upon the answer to it hangs the possibility of knowing when one's analysis is complete; if one cannot determine the lower limit to behavioremic segmentation, then one can only end with an arbitrary consideration of some of

the intermediate units within the hierarchy of behavioremes included the one within the other.

The elements of an answer to this question have already been given, in other terms, in §§3.32-35, 4.23, 4.32: First, MINIMUM BEHAVIOREMES must be located with reference to the kind of participant action being studied. Minimum behavioremes in the action of an analyst, or in the activity of a critic, may be considerably smaller than the minimum behavioremes in the action of normal participants; if one fails to treat separately such activities, one must inevitably end in confusion, since two homomorphic activities (§4.1.10), alike in physical set-up but differing in purpose, may have different minimum closure elements. Secondly, this attention to participant type in reference to analytical attention implies, as a corollary, that units obtained by observing hypostasis (§§4.15, and 4.23) must not be treated in the same hierarchical set as units not obtained in such a manner. Third, the THRESHOLD for minimum behavioremes (§§4.32, 3.33) must not be allowed to go lower, for any one hierarchical set, than can be culturally, objectively documented as having closure and as being purposive. In spite of the fact that we have earlier shown that there is an area of indeterminacy in the matters of participant type (§§3.34, 4.1.10, 4.34), and so on, the insistence on such a threshold, indeterminate as it may be, is essential to a useful, practical handling of the theory; we assume that the indeterminacy in the theory is reflecting some of the ambiguity which exists, in fact, in the activity of the community itself, and that a concealing of this ambiguity in order to get "clear cut" theory at this point would not contribute to fidelity of description but to concealment of the facts of behavioral structure.

Nevertheless, within this range of uncertainty of behavior and of analysis of behavior the determination of a threshold of minimum behavioremes is important. It is this threshold which allows us, in the present volume, to stop short of the redutio ad absurdam of treating the movement of some particular molecule in some particular nerve fibre in some particular muscle of some part of the vocal organs during the production of some particular sound as constituting a behavioreme on a theoretical par with the football game. Without a threshold somewhere in the theory--even though it be a vague one which shifts with participant type--there would be no such stopping place.

It is the setting up of such a threshold, also, which serves as the practical base for the establishing, in the next three chapters, of minimum units of the three modes of a behavioreme. Without a minimum threshold for the size of behavioremes, there could be no "minimum" units within them. Since our minimum for a behavioreme is tied, in this theory, to the presence of purpose, and closure reflecting that purpose, the minimum unit of the feature mode of the behavioreme can be set at a threshold level which is also tied to purpose or meaning in some way, and yet constitute part of an integrated theory in which the small modal units of a behavioreme are defined in reference to and dependent upon their function relative to the larger unit. Once this is done, the minimum unit of the manifestation mode of the behavioreme can in turn be set as in direct relation to and dependence upon the minimum unit of the feature mode of the behavioreme, so that the threshold of units of the physical hierarchy are not allowed to descend to the level of molecular action, but are also held to a manageable size, for behavioral purposes; there will still arise problems and room for disagreement as to the exact place the threshold should be set, and as to the way in which sub-threshold units should be handled, as we shall see in Chapter 8, but at least this approach gives us a method of getting at the problem.

So far, I have been able to find no evidence leading to criteria for setting up theoretical limits for a maximum behavioreme. We have already seen, in Chapter 4, that the maximum can surely be large, varying from a football game to a series fifty years long. Provided that the analyst can find cultural evidence for showing purpose and closure in normal participant action, the theory allows for behavioremic size without any top limit.

It frequently proves convenient, however to contrast minimum behavioremes within some hierarchical set with larger types within that same set, without stating what the top limit is. In conversational material, for example, the minimum behavioreme is either a short statement or question, and so on, or a brief reply to such a statement or question. The utterance plus its reply may constitute a higher layered behavioreme in the same hierarchy, and the entire conversation containing that exchange may be another. When we wish to refer in general terms to any behavioreme larger than a minimum one, we shall call it a HYPERBEHAVIOREME. Thus the utterance-reply sequence, and the total conversation, are both hyperbehavioremes as against the minimum behavoriemes comprised of the utterance itself, or the reply. (We shall have occasion in later chapters to utilize the prefix HYPER- in similar ways in contrasting minimum units of the modes of a behavioreme with hyper-units of those same modes.)

A terminological problem arises at this point since certain emic units which we wish to call minimum emes may at one time have variants which are shorter than at another time. For both the minimum behavioreme and the hyperbehavioreme an analysis must distinguish between those variants which contain only OBLIGATORY elements essential to the shortest variant of the type, and those variants which are EXPANDED by containing one or more nonobligatory portions as well. Thus a verbal behavioreme constituted of an imperative sentence type with a simple variant such as Come! may have an expanded variant such as Come here! Each of these variants of the imperative sentence type would be manifestations of that minimum type as a whole, contrasted with a nonminimum verbal behavioreme constituted of, say, a form of verse which must contain several elements within it. "Minimum," in the sense used here, refers to the presence of a single set of obligatory parts in the emic structure, and not to the particular length of its variants, so that the difference between hyperbehavioremes and minimum behavioremes must be determined in reference to their obligatory parts, not their optional ones. The term hyperbehavioreme will be reserved for application to a unit within which is always included at least two minimum behavioremes, each with its own particular set of obligatory parts, and with the whole forming on a higher hierarchical level of the total system a new unit, with a closure type, or purpose, or other feature differentiating it from the mere expansion of one of its parts.

In a different set of contexts, the term minimum may be used to refer to variants of units rather than to the unit types themselves. A minimum variant is a non-expanded variant, containing only its obligatory elements. Units, whether minimum units or hyper-units, may have variants which are expanded or non-expanded; a minimum structural eme, then, may have nonminimum variants of that eme, and a nonminimum emic unit--a hyper-unit--may have minimum variants or nonminimum variants. The phrase Come here! is a nonminimum variant of a minimum eme, i.e., an expanded variant of the imperative utterance type in English; on the other hand, a nonminimum emic unit such as the singing of the hymn discussed in Chapter 3 would constitute a verbal hyper-behavioreme which might have just one of its stanzas sung during a service in which time was at a premium, and in that instance the singing of the single stanza would constitute a minimum variant of that nonminimum eme. A minimum eme may be manifested either by minimum variants or by nonminimum (expanded) variants.

5.4 Systems of Behavioremes

As our definition in §5.1 indicated, a behavioreme is a manifested part of an emic system of behavioremes. If this were not true, there would be chaos in our description more severe than would result from the lack of a threshold of minimum behavioremes; purposive movements of the lips and feet, or manipulation of footballs, baby buggies, and cabbage seeds would form an unorganized aggregate of activities, or might be arbitrarily classified without reference to their function in life as we live it.

Any emic system of emic units is characterized by the fact that emic units occur in distribution classes (§3.4) of units. A distribution class, in turn, is determined in relation to the occurrence of contrastive emic units within the same emic spot (§3.4) of a behavioreme or unit within a behavioreme. When various emic classes of units are included within the variant manifestations of a single behavioreme--in different spots within that behavioreme--or in a class of behavioremes, this group of classes constitutes an emic system of classes by virtue of this distribution. Thus the family-breakfast behavioreme is included within the group of family activities, and is part of the system of those activities. Similarly, the individual's participation in that family breakfast is part of the system of his personal activities.

Within a behavioreme with focus as broad (§4.4) as the family breakfast there occur so many kinds of activities that there is confusion unless they can be treated in terms of a set of composite hierarchies, as some kind of component sub-assemblies (§4.43) within the larger whole. The classes of units of one such INCLUDED HIERARCHY constitute a SIMULTANEOUS COMPONENTIAL SYSTEM of that hyperbehavioreme or of a system of hyperbehavioremes. Two of the most important and obvious simultaneous componential systems within the breakfast unit are constituted of the verbal hierarchy and of the nonverbal one, respectively.

The question must be raised, here, as to whether the setting up of componential systems of this type has not defeated our attempt for the volume as a whole to show that behavior cannot be treated in water-tight compartments. The answer to this query is that it does not, precisely because we indicated that the component hierarchies are only relatively or partially independent, not completely so. At certain points in the argument it is highly important to indicate places where there is not rigid separation of the hierarchies, but interpenetration between them (as in the instance where two activity types are closely integrated in a sub-unit which involves the phrase Pass the toast). In addition,

in this matter there is a marginal area of activity where indeterminacy of componential systems occurs, just as there is a marginal indeterminate area at the borders of many other units postulated by the theory. Both of these facts will be treated in more detail, later; interpenetration of systems will be treated especially in Chapters 15 and 16, and indeterminacy of other types will be mentioned as the various emic units come before us.

NONSIMULTANEOUS CONGRUENT SYSTEMS, or STYLES, will be treated in more detail in §16, and are comprised of two (or more) systems of units so related that, in general, they share most of their units, though often with slightly different physical manifestations of these units. Two styles of speaking constitute two such systems. Two or more congruent systems make up a single HYPERCONGRUENT one. Hypostasis, to which we have already been forced to refer on a number of occasions (§§2.1, 4.15, 4.23), is caused by the displacement of a unit from one such system (one where the participant is 'playing the game' which is under attention) to another (one in which the participant is analyzing or discussing--not playing--the game). One of the most fascinating situations in which two componential systems overlap is in the situation of "April Fool." On April first, the trickster tries to achieve a result by statements designed normally to get that result--say, to get a person (who is operating in one system) to look out the window to see an elephant. When (as intended) the "lie" is detected by the deceived person (who sees no elephant), the normal penalties for a detected falsehood are avoided by the speaker, and turned into a hilarious joke, by saying April Fool, which apprises the listener of the fact that the speaker was operating in the special system, culturally valid only on that one day of the year. Note, for example, the following cultural reaction to this system when misplaced: B84/2/1.2 F--: J--, is that an elephant out there? J-- looks, and replies something noncommittal (Why should I know?). F--: April Fool. J--: To-day isn't April Fool... M--: Daddy's just at the wrong end of the month isn't he? This is the last of April, and not the first.

5.5 The Uttereme and The Etics of Utterances

Since the balance of the volume will deal much more with verbal behavior than with nonverbal behavior it proves useful to have a set of terms which may be applied exclusively to verbal elements without reference to their nonverbal or composite verbal-nonverbal counterparts. We have illustrated at some length in this chapter verbal behavioremes included within composite verbal-nonverbal ones; these verbal behavioremes we shall call UTTERANCE-EMES or, with the term abbreviated for convenience, UTTEREMES; utteremes constitute a subdivision of behavioremes, such that every uttereme is a behavioreme but not all behavioremes are utteremes. When we wish to distinguish, as for minimum behavioremes versus hyperbehavioremes, between small and large verbal types we will speak of MINIMUM UTTEREMES and HYPER-UTTEREMES: one of the large conversation units (say the story mentioned above, §5.2) would be a variant of a hyper-uttereme; a single sentence would be a variant of a minimum uttereme. From an etic point of view, similarly, we may speak of etic utterances or etic hyper-utterances, without committing ourselves in advance to a particular emic analysis of these utterances for any particular language.

In discussing the etics of utterances, we need to note especially four elements: (1) the problem of segmenting utterances or hyper-utterances from a continuum, (2) the kinds of criteria which serve to identify or to differentiate utterance types, (3) the types of utterances or hyper-utterances which are the end product of classification by such an etic scheme, and (4) the kinds of distribution classes of utterances and hyper-utterances which are determined by their function in particular languages.

5.51 Segmentation of a Continuum into Utterances and Hyper-Utterances

In the early stages of analysis of a language, one needs to make an etic segmentation of the data: the large hyper-utterances need to be cut, tentatively and perhaps inaccurately (i.e., non-structurally) into smaller hyper-utterances or minimum utterances included within the larger hyper-utterances. A number of clues for a procedure and criteria for doing this have already been given, and others are available. The following list is not intended to be exhaustive, since a separate detailed treatment is needed of these matters, but may be suggestive: (a) Each change of speaker within a hyper-utterance implies the beginning of an included utterance or hyper-utterance. (b) Each change of topic also implies the beginning of an included utterance or hyper-utterance. Other clues included (c) a lull, or long pause in the conversation, or (d) a sharp change of voice quality, or (e) a quick audible catching of breath by the speaker, (f) a "running down" intonation pattern, (g) some special vocal signs which are not words (e.g., a slow indrawn air stream to the mouth, through partially

closed lips, or the clearing of the throat, or a cough), (h) special wording indicating a new subdivision in the topic (e.g., Now another thing ...), and so on. Other verbal signs may signal endings (Thanks for your attention; etc.), or continuance rather than an ending (e.g., a quick speed-up to prevent interruption, or an increase of loudness to shout down someone trying to interrupt, or a pause put after the first word of a succeeding grammatical unit instead of between two such units, also to prevent interruption; or special words or word groups such as yes..yes...yes to signal continuance of listening rather than of talking; and so on).

In actual language situations, furthermore, many nonvocal elements help the listener to segment out the relevant changes of hyper-utterance types. Thus an accompanying change of stance, or of facial gesture, or a raising of the hand to stop someone from speaking, may contribute in this way. Whenever this is the case, we note once more that verbal and nonverbal activity cannot profitably be completely separated in analysis.

Likewise it needs emphasis that in the analysis of utterances in this way one is not discussing the meaning of words or sentences, nor the analysis of the structure of words or sentences in themselves, apart from verbal and nonverbal context,* but is rather attempting to analyze verbal behavior as a subsystem of total human behavior and as imbedded within a hierarchical matrix of a system of that more inclusive behavior, and with the units not absolutes in themselves, but relative to that matrix. It is from this fact that we deduce the theoretical validity of the use of FRAMES, which prove so useful in practical working with behavior units. A frame is merely the identified context which surrounds an identified, filled spot, such that a series of items may be observed in a single spot, one after another in a repeated context, without the context or the spot function being changed, and without the functional relation being changed between the context and the (changing) item within the (unchanging) spot. Thus, for example, the words big, tall, ugly constitute a substitution list, or distribution class, which may fill the spot in an utterance frame comprised of The ... house fell down.

We shall have occasion to refer to this kind of situation in many different places in the subsequent discussion; for the moment, however, it is sufficient to indicate that part of the segmentation procedure for isolating utterances is built upon an extension of this principle, in which the frame is exclusively nonverbal but the spot-filling material is verbal. For example, the minimum uttereme may often best be seen as one which is constituted of the smallest obligatory parts which may fill a spot in such a (nonhypostasic) nonverbal frame--e.g., an exclamation such as Ouch! filling a spot in a frame comprised of a person hitting his finger with a hammer, exclaiming, and then proceeding with his work. Another minimum utterance type may be seen in a different nonverbal frame, as when a person in some physical context gives a verbal minimum order which is carried out by the second person without reply; when the reply is verbal, an utterance-plus-response unit is similarly isolable within the nonverbal context. Note, for example, the following complete conversation which I recently overheard: A librarian comes to a cubicle in which a student is smoking; she says to him: There isn't any smoking in the library. To which the student replies: Anh. Or the following: One person comes up to another in a queue, and says: A line, is there? To which the other replies: Yup.

Once a minimum uttereme has been isolated within a nonverbal frame, moreover, this uttereme can then itself serve as part of a frame for identifying other segmental borders: a command, isolated within a nonverbal frame, may then serve as part of a frame in which a verbal reply is given, and the distribution class of such replies can be studied as an uttereme class relative to this appropriate context, and dependent upon it, and so on, to higher and higher layers of the hyper-utteremic hierarchy or parts thereof. Inasmuch, however, as this procedural start is keyed into observations made when verbal activity begins within a nonverbal context, and inasmuch as different distribution classes of utteremes occur in different such contexts, it follows that in our next section, discussing the criteria for differentiating utterance types, we must also include some criteria of a nonverbal type. This, in turn, gives further evidence that our outlook set forth in Chapter 1 must be sustained: in some instances, verbal activity cannot be adequately analyzed without reference to the manner in which it is interlocked with nonverbal activity.

*Yet the analysis of words or sentences outside of normal behavioral contexts may itself constitute an activity, and the analysis of that analytical activity in structural terms is also part of the total analytical necessity facing the student of human behavior. This is a study of the activity of analytical hypostasis--and a very profitable one provided its results and procedures are not allowed to vitiate the results of an analysis of normal participant activity. For the general theoretical problem, see §§2.1, 4.23, 7.321.

5.52 Etic Classificatory Criteria for Utterance Types

It is not possible at this point in the discussion to give detailed instructions for identifying utterance types since some of the criteria involve a study of smaller-layered included units which have not yet been presented in relation to this theory. It is desirable, however, that some indication be given here of the kinds of criteria which could go into making up a detailed study of UTTERETICS--i.e., a classification of criteria such that their application would lead to groupings useful for comparison of utterance types around the world, for training of students before they attempt to analyze a particular language. Unfortunately, such a listing is not complete, and since the order in which the criteria are applied affects greatly the kinds and usefulness of resultant groupings, this listing is only a first approximation to that which the field needs.

Following the application of each criterion, a grouping of utterances will result, with one group which does and another which does not contain that feature. As successive criteria are applied, the groups get smaller and smaller, until after the application of the final criterion there should be only a single utterance type in each group,--provided that the list of criteria is complete and adequately arranged in the most useful order (which we have not assumed for this particular tentative listing):

Sample criteria for utterance and hyper-utterance etic types:

(a) Is it essential that the speaker have in advance of delivery the knowledge of the precise wording which he is to use (e.g., in reciting a poem), or is no such knowledge or partial knowledge necessary?

(b) If (a) is essential, is it also essential that the wording have been prepared by the speaker (as in giving a reading of his own words), or may it have been prepared by someone else?

(c) If (a) is essential, is it also essential that the wording be preserved orally only, or may it have been preserved in writing?

(d) Is there an essential relation of the utterance type to its inclusion in a specific kind of larger behavior pattern or to its inclusion in some structural spot of such a pattern (e.g., a sermon in a church service), or is it not dependent upon such specific hierarchical occurrence?

(e) Is there an essential number of speakers (e.g., in a soliloquy, or a quartet)? If so, how many?

(f) Is there an essential type of speaking functionary or functionaries (e.g., judge versus witness), or is there no prescribed difference in function?

(g) Is it essential for an audience to be present (e.g., an audience for a sermon, since a sermon preached without an audience would be a different utterance type, in hypostasis, and a sermon given from a radio studio without a visible audience might give "mike fright" to the speaker), or not? If so, is there an essential audience type?

(h) Is there an essential time (e.g., Easter Sunday, for an Easter church program), or is it tied to no particular time or occasion?

(i) Is there an essential place (e.g., for a British coronation ceremony), or may it occur in various unspecified places?

(j) Are there essential props, or an essential setting (e.g., the baseball diamond where the umpire says Strike!), or may it occur in undefined places?

(k) Are there essential concomitant actions (e.g., in a gesture song), or may the utterance occur with none other than vocal movement?

(l) Is there an essential specific voice quality (e.g., in song)? If so, what is this quality?

(m) Is there an essential (even though only partially definable) purpose or meaning of function of this utterance type (e.g., for amusement, learning, analysis, etc.; or for a question, or command; a rehearsal differs from a regular performance, or hypostasic activity from that of regular participant activity, by this criterion)--and if so, what--or is the utterance an accident physiologically conditioned (e.g., a cough) or not in accordance with the normal intent of the speaker (i.e., interrupted and truncated by another person, or by some other event).

(n) Is this a minimum utterance type (a sentence type), or a nonminimum one (a hyper-utterance)?

(o) If this is a nonminimum type, is there an essential symmetry, or essential size, or essential and optional number or kind of spots and their correlated distribution classes (e.g., number of lines, or size of lines in verse, or rhyming patterns in verse, or the number of acts in a play, or the speeches versus rebuttals in a formal debate, or greeting versus leave-taking elements in a formal conversation), or is there no such formal limit (other, for example, than utterance and reply spots and changes of topic in an informal conversation)? What are these spots and classes?

(p) If this is a minimum type, what are its specific essential internal spots and what are the distribution classes of elements filling these spots? And what are the permitted optional expanding spots and classes filling these spots?

As a brief indication of the way in which

such a set of criteria could be applied, note the following two illustrations:

The jet plane story, partially quoted in §5.2, (a) [see sections just above for these divisions] had no wording planned in advance; (d) it was part of one variant of the breakfast hyperbehavioreme, told during the main course, but was not essentially so, since it might have been told at bed time or while travelling in the car (though in these instances one might argue that it constitutes a different unit, since its purpose would be different--although we shall for the present attribute this meaningful difference to the functional spot in which the story occurred rather than to the internal structure of the story as such); (e) at least two persons were always involved; (f) usually the respective functions of these two were teller and listener, but occasionally the normal listeners (i.e., S-- and usually B-- and J--), reversed roles and contributed to building up the plot; (g) an audience of at least one was essential, or the story would not be told; (h) the time was at breakfast, and (i) the place at the breakfast table would be concomitant with the time; (j) the breakfast matrix would also provide the essential props; (k) the eating of S-- was an essential concomitant set of actions, since the story stopped if they did not continue; (l) voice quality was not uniform throughout, though occasionally special qualities were used which would not often occur elsewhere in ordinary conversation; (m) the essential purpose of the story as such was to arouse interest, but combined with this structural spot was to induce S-- to eat his cereal happily; (n) the story was definitely a hyper-utterance, comprised of many smaller hyper-utterances or minimum utterances; (o) the size was indeterminate--and could have been very shortly completed (though it carried over several days); the formal parts included an official announcement of its beginning drawn from a class of such special elements (Once upon a time), with various changes from one included incident to another, and with spots for elicited or voluntary contributions from other members of the family.

As a second illustration, we may take one utterance from that recording, the Yes, by M-- (the utterance which follows the statement of S-- Uh huh, there's two Johns, isn't there?): Here (a) the wording is not planned in advance; (d) it is part of a larger utterance-response--part of a conversational hyper-utterance, --and occurs, in this function, only as a dependent part of such a hyper-utterance (though it may occur in other spots, as a signal by a listener to a speaker that the speaker should continue, etc.); (e) it implies, in this function, at least two speakers, (f) one of whom (g) is responding to the other; (h) time, (i) place, (j) props, and (l) voice quality are not determined, since the type of conversational hyper-unit containing it may occur in various kinds of contexts; (k) there are no essential concomitant actions; (m) the meaning of the particular element filling the spot is "affirmation" whereas the total spot function is "reply" (which might have been negative, instead of positive); (n) it is a minimum utterance type, (p) in this non-expanded form it has only the one internal grammatical, lexical spot, filled by one of a class of items such as a simple Yes, or No, or a complex I think so with its own internal spots (but in an expanded form it might contain two or more major spots in such a reply as Yes I think so), plus the spot for the superimposed intonation, which in this particular instance (37/12) falls from high to mid pitch.

5.53 Etic Utterance Types

If the preceding etic criteria are applied to a large number of utterances and hyper-utterances, various groups will emerge after the application of each criterion in the set. If the order of application of criteria is changed, the resultant groupings will correspondingly differ; hence, for different purposes, the analyst may choose to use a different order of application of these or other diacritica of utterances. A much more extensive investigation needs to be made, and trial of various alternative orders of application of criteria, before we shall know which is the most useful for linguistic purposes.

As an indication of a few of the groupings which might emerge when various criteria are given prominence in the descriptive order of application of some such set of criteria, we give the following miscellaneous examples:

A joke, limerick, parody, pun, or comedy (criterion in prominence early in order of application: humorous purpose).

A song, chorus, vocal solo, cantata, oratorio, aria, chant, choir practice session, opera, lullaby (criterion in prominence: sung voice quality).

A presidential address, welcoming address, after-dinner speech (criteria in prominence: single speaker, special audience, long hyper-utterance).

A sermon, invocation, prayer, litany, recited creed, marriage ceremony (criteria: religious purpose and setting).

A slogan, motto, proverb, epigram (criteria: size, familiarity, aptness, etc.)

Conversation which is formal, informal, over the phone, in a discussion group, in an oral examination, in an interview (criterion: give and take between speakers, etc.)

A judge's giving sentence, a lawyer's argument, the President's annual message to Congress, a sermon, an umpire's decision (criterion: with the person speaking having his individuality subordinated in importance to the role which he is representing in the society at that moment; note that this leads to overlap with some of the other groupings).

Sentences which are narrative (John ran away), actor-action (John ran away), command (Come!), sentence-word type (Italian canto, 'I sing'), goal-action (Latin cantātur 'it is being sung'), equational (Russian beātus ille 'happy (is) he'), instrument-action (Tagalog ipi 'nu:tul nja aŋ 'gu:luk 'he cut with the bolo'), sensation (Georgian 'm-e-smi-s 'me-sound-is' i.e., 'I hear'), impersonal (German mir ist kalt 'to-me is cold' i.e., 'I feel cold'), explicit-action (I did hear him), emphatic (RUN home [don't walk]), informal question (John ran away?), formal question with inverted order (Did John run away?), negative (Menomini kan upianan 'not he-comes [negative]' i.e., 'He does not come'), surprise (Menomini piasah! 'and so he's coming!'), disappointment (Menomini piapah! 'but he was coming!'). Also minor sentence types: interjections (Please), completive (This one), exclamatory (John!), aphoristic (First come, first served). The sentence types in this group were abstracted from Bloomfield [1933, pp. 171-77], who gave as his first criterion the fact that they occur in "absolute position" [p. 170], and not as part of a larger form. Further subordinate criteria had to do with their use of pitch units [p. 171], full versus minor types [pp. 172, 176-77], constitutent parts [p. 172], relation of these parts [p. 173], occurrence of special elements in the form [p. 174], order of elements in the form [p. 174], their meanings as determined from their occurrence in the cultural setting [e.g., p. 176], and so on.)

5.54 Utterance Distribution Classes

A listing of sentence types for a single language, English, has been made by Fries (1952), using a different set of criteria, or criteria applied differently: In a first dichotomy, utterances are divided into (1) communicative and (2) noncommunicative types (Fries, p. 53).

Noncommunicative types of utterances are in general those exclamations 'characteristic of situations such as surprise, sudden pain, prolonged pain, disgust, anger, laughter, sorrow'.

Communicative utterances are divided into (a) those 'regularly eliciting "oral" responses only'--further subdivided by formal criteria (Fries, p. 42-47) into greetings, calls, and questions (p. 53); and (b) those 'regularly eliciting "action" responses, sometimes accompanied by one of a limited list of oral responses'--i.e., requests or commands; and (c) those 'regularly eliciting conventional signals of attention to continuous discourse (sometimes oral signals, but of a limited list, unpredictable in place, and not interrupting the span of talk or utterance unit)'--i.e., statements (p. 53). Various utterance types are further subdivided in accordance with the order of occurrence of the distribution classes of words within them (pp. 142-72).

A further classification (Fries pp. 240-55), cutting across some phases of his earlier classification, is one into (a) 'situation' sentences (which may occur at the beginning of a conversation, for example), (b) 'sequence' sentences (in which some word in a sentence ties it to an earlier word in the same conversation unit; e.g., the situation sentence The quoted price of the books we need is sixty-five dollars is followed in Fries' materials with the sequence sentence That amount is just about what we figured, in which the sequence signal for the second sentence is the word that), and (c) 'included' sentences (in which a sentence becomes part of a larger sentence, as they're all clogged with roots is included in the sentence The boys we've had out there couldn't do anything satisfactory with the lines because they're all clogged with roots).

The reader will note that Fries' classification of utterances is much more easily related to our emic approach than is that of Bloomfield, since the work of Fries utilizes more directly and explicitly the relationship of a sentence classification to the occurrence of these sentences in specific spots in verbal, nonverbal, and composite verbal-nonverbal behavioremes. Without such reference to nonlinguistic items, the helpful classification given by Fries could not even have gotten under way, since by its first dichotomy it had reference to the setting of speech within speech or to its setting within nonverbal behavior, and in the classification of the communicative utterances there was in turn further essential reliance upon nonverbal criteria in the form of the regular presence of action responses. Here, once more, we see clearly that language study must, in order to be useful or theoretically valid, be treated within its hierarchical framework of nonlinguistic as well as of linguistic behavior.

Distribution classes of utterances, as distinct from groupings determined by criteria other than that of distribution within particular functional spots in a particular language, can in principle be determined for only one language at

a time: no general etic classification can provide for the distribution classes of utterances of all languages within a single listing, since languages differ as to the particular functional spots within their hyperbehavioremes, and as to the distribution classes within these spots. If one looks again at the data in the last two paragraphs as taken from Fries, one will notice that it is in fact a grouping of distribution classes, for a single language (English), identified in relation to their occurrence in spots in particular hyperbehavioremes whether verbal, or nonverbal, or composite verbal-nonverbal in nature. It was precisely this fact which makes it appealing to us, in the light of behavioremic hierarchical structure. Nevertheless, this advantage from the hierarchical viewpoint brings with it a limitation of application to a generalized etic approach: to whatever extent these particular kinds of classes are restricted in occurrence to English, to that extent the English system of classes lacks the generalized character of a purely etic scheme which should simultaneously and with equal facility serve for classifying the utterance types of all languages at once.

If, however, one takes these particular distribution classes of English utterances and treats them as suggestive of the kinds of classes which might--or might not--occur in some other language, and if one then adds to this listing as many other kinds of distribution classes as can be found in other languages, then a systematization of the etics of distribution classes of utterances can be developed to supplement a systematization of the etics of kinds of individual utterances in which the principal dichotomies in the classification are based on other than distributional criteria. Unfortunately, such an etic classification of kinds of classes of utterances, if it is to be adequately representative of the world picture, must await more studies of the kind Fries has given us, for other languages.

Classes of hyper-utterances determined by their distribution in typical spots in sample languages need also to be systematized into some etic conceptual scheme. The criteria given in §5.3 lead to groupings of various kinds, in accordance with the priority given to the order of application of these criteria. Special attention, for the purposes of training students to be prepared for the structural analysis of the hyper-utterances of a particular language, need to be placed upon a classification in which top priority is given to distributional characteristics. These, to be sure, differ from language to language, as they do for minimum utterance types, but there is probably sufficient similarity in all languages to justify a generalized scheme which could serve as systematized background data to make the student observe more quickly the particular emic distribution classes of hyper-utteremes which he was meeting in a language just then being studied by him. We are not yet ready to present such an etic classification here, however; it would constitute a volume in itself.

5.55 Emic Procedure in the Analysis of Utterances and Hyper-Utterances

In order to pass from a prestructural etic description of the utterances and hyper-utterances of a language to a structural, emic description of the utteremes and hyper-utteremes of that language, the analyst must go through various procedures, or operations, to process his etic data. It is evident that this procedure assumes that the linguist has made a preliminary recording and analysis of some small part of his data in terms of some general etic outlook before his emic procedures can be utilized. Yet it also assumes that there may be a wide margin of error in this early etic work. If the student has had little training, the etic error will be greater than if he has been exposed to a wide variety of languages, and if he is a monolingual speaker with no training, his etic outlook will be in fact completely conditioned by the emic structures of his own language as seen, if at all, distorted by traditional presentations in the schools, which in our western culture have for many years used Latin forms as a kind of generalized background for viewing English and other languages. If the student is well trained, certain of these errors will disappear, though distortions may be introduced, say, in the form of an etic scheme heavily weighted in the direction of non-Indo-European languages, as a protest against present distortion in their favor. Even with perfect training and wide experience, however, one must always assume a large margin of emic error in early etic analysis, (1) since etic training and observation includes more elements than can be relevant in any one language--hence there would be over-recording or analysis in the early stages,--and especially (2) since relevance in a particular language is dependent not on the absolute nature of the etic data but upon the relationship of any bit of data to the whole system of the language which contains it--but this relationship cannot be known until the language is first known, so that etic absolutes must be modified in terms of the relativity of the parts of the system to each other (§§6.7, 16).

For this same reason, it is impossible to give a complete statement of procedure for the emic analysis of utterances until we have·

covered the general characteristics of a system as a whole, since part of the procedure must draw upon elements of the system which at first sight might not appear to be relevant at all. Just as we have thus far argued that language must be analyzed in relation to the nonverbal setting in which it occurs, so we are now limited by the fact that sentences can not ultimately by analyzed in full until something is known about smaller parts of the linguistic system. We shall return to procedural matters, then, after the smaller units of the language system have been discussed (§22).

Neverthless, it will probably be helpful to the reader if we indicate, now, the general principles upon which an analysis of utterances or hyper-utterances within such a larger framework can be based.

Every etic utterance may be assumed to comprise: either

(a) a free variant of an emic utterance
or (b) a conditioned variant of an emic utterance
or (c) part of an etically-complex variant of an emic utterance
or (d) a sequence of manifested variants of two or more emic utteremes
or (e) a fused composite variant of two completely simultaneous or partially simultaneous emic utterances
or (f) an error of phonetic recording which would be eliminated upon re-hearing or an error of analysis which would be eliminated upon further study;
and (g) the emic utterances comprised of these etic variants are members of emic distribution classes of emic utterances within the larger system of classes of emes which comprise the language.

Thus, for example, the call Mommie Mommie! is a free variant of the calling emic utterance which includes among its members, also, Daddy Daddy! since the general pattern of the uttereme is unchanged by the choice of the particular member of the distribution class which may fill that spot. For a particularly interesting example from §5.2 note that when J-- says May I have, ah--, it constitutes an etic utterance by the criterion of change of speakers, since M-- follows that with a second etic utterance, which is --the sugar? Nevertheless, it is obvious that there is some kind of unity between the two such that together they form a single entity of some kind. Here we would treat them as separate etic utterances which together constitute an etically-complex variant of the simple question uttereme.

The transfer from the etic treatment of hyper-utterances to the identification of the hyper-utteremes in a language is parallel to that of passing from etic minimum utterances to utteremes. Other than the fact that we are dealing on a higher level of the hierarchy of utterances, no new principles need to concern us here.

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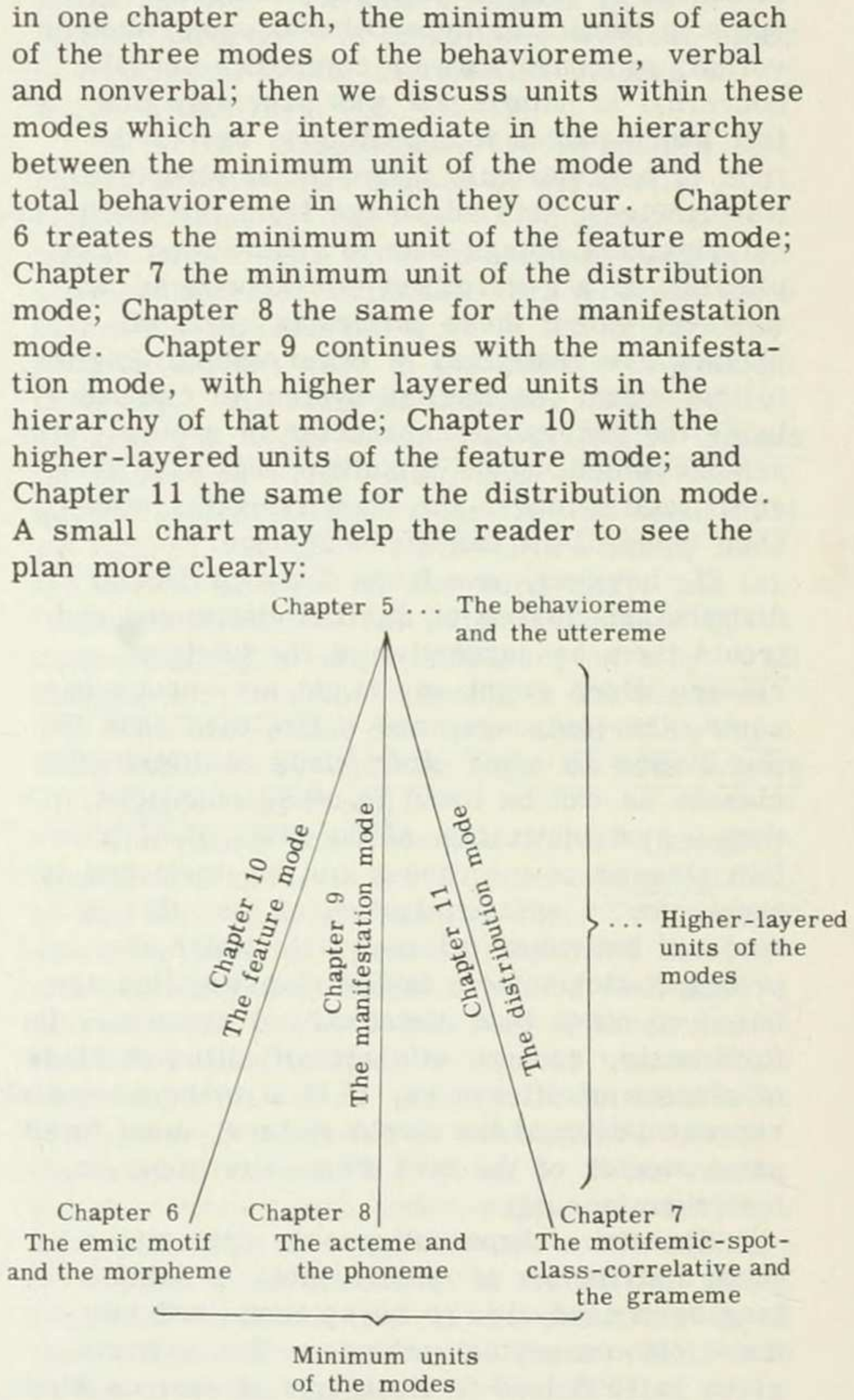
After a discussion of some bibliographical matters which are relevant to this chapter, we shall be ready to go on to the discussion of units which are smaller than the vocal or non-vocal behavioremes. The pattern for the next six chapters is as follows: First we discuss, in one chapter each, the minimum units of each of the three modes of the behavioreme, verbal and nonverbal; then we discuss units within these modes which are intermediate in the hierarchy between the minimum unit of the mode and the total behavioreme in which they occur. Chapter 6 treates the minimum unit of the feature mode; Chapter 7 the minimum unit of the distribution mode; Chapter 8 the same for the manifestation mode. Chapter 9 continues with the manifestation mode, with higher layered units in the hierarchy of that mode; Chapter 10 with the higher-layered units of the feature mode; and Chapter 11 the same for the distribution mode. A small chart may help the reader to see the plan more clearly:



5.6 Bibliographical Comments on Chapter 5

5.61 On Behavioremes

In the anthropological literature, Nadel has a passage that sets up a unit which in some features is close to our behavioreme: '...no legitimate isolate can be discovered more basic than that of a standardized pattern of behaviour rendered unitary and relatively self-contained by its task-like nature and its direction upon a

single aim. On this basic level the behaviour pattern runs its course in time; it consists of a sequence of part-actions which has a beginning and an end--the assumption of a particular task, its execution, and completion. The essential aspect is biographical, and the unit of action so viewed is best termed a behaviour cycle' (1951, pp. 75-76). This is followed by a paragraph which implies an optional focus on various levels of a hierarchy of such patterns. Unfortunately, for our purposes, Nadel does not attempt to follow up this initial outlook with an analysis of the internal structuring of the behavior patterns themselves, in reference to a system of such patterns of activity, but rather turns his attention more specifically to an analysis of society and the institutions and groups of persons acting in that society. His term 'behavior cycle,' however, should be useful to persons who dislike the term 'behavioreme'--a term which we continue to utilize in this volume since it is more easily related to our entire system of terms and the structural point of view which they represent.

5.62 An Etic Classification in Anthropology

For an etic listing of a great many general kinds of behavior units, as well as an etic listing of many elements of the social and physical matrix of behavior, one may consult the Outline by Murdock, Ford, and others (1950). This outline is serving as the basic conceptual scheme for an etic collection of cultural matters, with its 'ultimate objective ... to organize in readily accessible form the available data on a statistically representative sample of all known cultures...for the purpose of testing cross-cultural generalizations,' etc.; by 1943 the Survey had 'filed some 500,000 cards with full or substantial information on nearly 150 cultures' (p. xii). One of their chief problems of a practical nature was the necessity for using various criteria which were overlapping, and which could not be used with complete rigor there lest the result be 'an intolerably cumbersome system of classification' which 'would seriously fragment the descriptive materials'; so that their actual work reflects 'now one principle of classification, now another, oftentimes two or more in combination' (p. xx). This difficulty is similar to the one discussed in our materials for the classification of utterances, §§5.3 and 5.4. Apparently they also faced the necessity of rejecting an emic classification in favor of an etic one, for their purposes (cf. p. xviii, and their rejection of a configurational approach adapted to the 'particular content and institutions' of a culture, in favor of 'an elaboration of what Wissler called "the universal culture pattern"'). Although there are provisions in their outline for linguistic materials, however, the works processed by them do not yet contain enough detail of the necessary kind to provide adequate background excerpts for the development of the etic utterance classifications which we need for the linguistic purposes discussed here, insofar as I was able to determine from that section of the file currently accessible to me.

5.63 On Linguistic Units Larger than Sentences

Linguistics in the past three decades has made its most striking progress by dealing with units no larger than sentences: with sounds (especially since Sapir, 1925, in Selected Writings pp. 33-45), with significant parts of words, i.e., morphemes (especially since Harris, 1942), and with sentences (e.g., Bloomfield, 1933, who adopted his sentence definition from Meillet--see Bloomfield 1926,p.154). Study of the structure of large language units has been left largely to the students of literature (who have worked more with written production rather than with spoken materials) or students of metrics, etc., and with the students of public address (for the structure of speeches of various kinds). See Wellek and Warren for an attempt to give an etic summary of literary types, or genres (1949, pp. 235-47, with bibliography pp. 337-40). See Jakobson and Lotz (1952) for one of the few structural studies by linguists of a large language unit; in this study verse patterns are correlated with the structure and sequence of syllables, words, and phrases, and are diagrammatically and formulaically represented. This analysis by Jakobson and Lotz is much closer to the structure of the hyper-utterance, as we see it, than the more widely-known recent attempt of Harris (1952a, 1952b) at "discourse analysis". Harris' approach differs radically from ours in starting assumptions, working procedures, and kinds of results obtained; his approach seems to me to be essentially atomistic, with attention directed to (assumed, not procedurally identified) sentences in juxtaposition rather than as integrated in a close knit but larger structure. Fries' attention to sequence signals (1952, pp. 240-55) and his insistence, for example, that 'the question itself is part of the frame in which the answer as an utterance operates' (p. 165, 169) strikes me as revealing more of the higher-layered structural form. (cf. also Karcevski, 1937, pp. 59). On the other hand, Harris' stimulating handling of a 'chain of substitutions' in a particular text may ultimately be very useful for 'content analysis' (cf. Lasswell, Lerner, and de Sola

Pool, 1952) inasmuch as the chain is dependent on correlations within that particular text which in turn are in part dependent upon content, even though the content as such is specifically ignored. Bloomfield did not go as far as Jakobson and Lotz, or Fries or Harris, in that he stated that 'each sentence is an independent linguistic form, not included by virtue of any grammatical construction in any larger linguistic form' (1953, p. 170), and did not attempt to see ways in which sentences were tied together in larger structures. It was perhaps this limitation which prevented, in this country, the development of linguistics so that it would be integrated more closely with studies of literary form; once linguistic study deals with units larger than the sentence, a bridge may be built between linguistics and some kinds of literary study. Similarly, these larger units must furnish the structural approach which can serve as the bridge between the study of linguistic form and of nonverbal behavior patterns.

Bloomfield states, in a passage highly commending de Saussure, that he 'should differ from de Saussure chiefly in basing [his] analysis on the sentence rather than on the word' (1924, p. 319). Firth, in his analysis of 'prosodies', likewise uses an approach which 'has the great merit of building on the piece or sentence as the primary datum' (1946), going beyond the word or syllable or individual sound. But it would appear that, as the further step, building on hyper-utterances has some further advantages. Yet even this unit is still not large enough--linguistic analysis must begin with the composite verbal-nonverbal behavioreme.

5.64 On Meaning in Definitions of Sentence Types

In reference to Bloomfield, furthermore, we have departed from one of his early points of view, in handling sentences. Among the criteria given in our list in §5.2, note that item (m) was the presence or absence of an essential (even though only partially definable) purpose or meaning, which seems to differ from Bloomfield. Thus in 1931 he stated that 'Needless to say, these meanings [such as 'complete and novel' for favorite sentence form] cannot be defined in terms of our science and cannot enter into our definitions; for every definition of the favorite largest-form types (and of everything else) is to be made in terms of forms, constructions, phonemes, or other linguistically determinable features' (p. 207). How is this to be reconciled with the quote from Bloomfield utilized at the end of §2.73 that 'In language, forms cannot be separated from their meanings' (1943, p. 102)? The answer seems to me to be that Bloomfield overstated his case in emphasizing two points: (1) that 'we must start from forms and not from meanings' (1943, p. 103; italics added; cf. also 1933, p. 172); and (2) that 'to define this (or any other meaning) exactly, lies beyond the domain of linguistics' (1933, p. 172; italics added). The essential nature of the protest against using meaning as a starting point seems overworked when on that basis he excludes meaning from sentence definitions entirely, even though he knew that 'In studying a language, we can single out the relevant features of sound only if we know something about the meaning' (1943, p. 102, et al.). In our view, however, we reject both the start from meaning and the start from pure form, by insisting on treating language as a form-meaning composite, and by insisting on the necessity of working with both of them from the beginning, and of keeping both of them in our definitions. We grant Bloomfield's second protest, that meanings can not be known exactly, but deny his conclusion--that, since meanings cannot be known exactly, they cannot be utilized in definitions of sentence types; rather we insist that the form-meaning composite must always be treated as such, in any study of nonhypostasic units (but for hypostasic units see §6.43), and that just as form is destined to be always to some extent physiologically and acoustically indeterminate and incompletely known to us (since the ultimate minutiae go beneath nuclear size within the atom, and beyond our powers of direct or indirect controlled observation), so also to some extent meanings and purposes are certain to be ultimately somewhat indeterminate (since the internal neurological events are not subject to our direct observation, and the physical contexts contributing components to meaning are infinite in number within the community usage of a form over a period of years). Yet neither of these facts should prevent our utilizing form and meaning as basic, useful hypostasized components in definitions of emic structures. For further discussion of related problems see §§6.46, 6.91, and 2.72-73.

CHAPTER 6

THE MINIMUM UNIT OF THE FEATURE MODE OF THE BEHAVIOREME

Thus far we have been talking principally about large units of behavior. Now, in accordance with the outline sketch at the end of §5.5, we are ready to begin a series of three chapters discussing certain small units within such a behavioreme, with one such unit as a threshold minimum for each of the three modes of such a unit. We begin with the minimum unit of the feature mode, since it is from units of this mode that we are operationally first able to establish the threshold which later is the basis for determining a comparable minimum for the units of the other modes (the manifestation mode and the distribution mode).

6.1 Definition of the Emic Motif

As a first approximation toward a useful definition of the emic motif we may state:

> Condensed definition: An EMIC MOTIF (or MOTIFEME) is the minimum unit of the feature mode of the behavioreme.

This definition is especially useful in emphasizing the fact that these minimum motif units are not defined by themselves (i.e., without reference to the fact that they occur only as parts of a complex system of larger units), but can be defined only as relative points in the larger units and systems of which they are a part; likewise it is useful in emphasizing that ultimately the behavioreme can not be defined without reference to these smaller units which in part comprise the behavioreme, and which are referred to in the definition (§5.1) of the behavioreme itself by the phrase 'hierarchically and trimodally structured.' The large units and the small ones, within this theory, are therefore in part mutually defining; ultimately, neither can be identified nor defined nor described without some degree of explicit or tacit reliance on the other: they constitute units of a system in which each part must be defined in relation to the total system and the system in relation to the parts.

Nevertheless, it is important for purposes of detailed study of these units that a more complete definition be given which parallels the definition of the behavioreme (§5.1) to some extent, so that likenesses and differences may the more easily be observed, and in order that the student may more rapidly see the characteristics of the smaller unit.

> Expanded definition: An EMIC MOTIF (or motifeme) is a minimum, active, trimodally structured, emic segment or component of human activity, within the hierarchy of the feature mode of a minimum or included behavioreme or hyperbehavioreme; it is manifested by free or conditioned, simple or complex, fused or clearly segmented variants, through the manifested variants of the emic units (or components of the emic units) of the hierarchy of the manifestation mode of a behavioreme; it is co-extensive with and distributed within one or more manifested minimum active spots of the distribution mode of a behavioreme; and it occurs within a trimodally and hierarchically structured system of emic motifs and system of behavioremes, and hence within a structured physical matrix. In any one non-artificial emic system of motifs, all but a relatively very small percentage of the motifs must be purposeful or lexically meaningful.
>
> A verbal emic motif is a MORPHEME; a verbal etic motif is a MORPH.

Many of the elements of this definition have been treated in earlier sections: the general nature of emic relevance, §2; problems of segmentation, §§3.2, 3.42, 3.61, 5.51; hierarchical structuring, §§3.31, 3.62, 4.14, 4.45, 5.3, 5.63; trimodal structuring, §§3.5, 5.2; variants, §§2.3, 3.52, 5.2, 5.3; emic system, §§2.5, 2.6, 2.74, 5.4; matrix, §4.46, 5.2; purpose or meaning, §§3.53, 2.2, 4.1.10, 5.52, 5.64; spot, §§3.41, 4.18; behavioreme, §5.

Various other elements in the expanded definition need additional treatment here or in later chapters: the minimum and active characteristics of such a segment; illustrative types of variants of emic motifs; correlation of motif with spots of the distribution mode; and systems of motifs. We will discuss and illustrate most of these elements in connection with the trimodal

structuring of morphemes. First, however, we wish to enable the reader to follow the discussion more easily by giving him a few (incomplete) illustrations of emic motifs, both nonverbal and verbal, and by comparing the emic motif with the behavioreme.

6.2 The Emic Motif Partially Illustrated

Within the breakfast materials, probably 'adults eating a bowl of cereal' is an emic motif, with its feature mode containing a component of purpose-meaning, i.e., in part, 'eating cereal for sustenance.' (Compare B49/13.7 S--: Daddy, can you help me with my--with this [cereal] so I can be a big man? Will you?) Movements within this unit--the picking up and filling of the spoon, swallowing the cereal, etc.--are physical components of the feature mode of the cereal-eating motif. Simultaneous composites of such movements constitute physical segments of the manifestation mode of that emic motif; each day the specific sequences of movements in the cereal eating differ etically --the specific way in which the spoon is carried to the mouth, etc.--and constitute etic differences within the manifestation mode of that unit. Variants within the manifestation mode of the cereal-eating eme differ, also, in the extent to which they are discontinuous. On one occasion a toast-eating motif causes the cereal-eating one to be interrupted at numerous points; on another occasion there is less interference. Similarly, it may be relatively little interrupted by conversation, or greatly so, or on brief occasions the records show overlap (speaking with one's mouth full). As for the distribution mode, the cereal-eating motif fills, in most of these records, the spot for the 'main course' at breakfast, and is accordingly usually co-extensive with that spot. Only rarely, in this particular family, is the cereal-eating motif replaced by or followed (or preceded) by a bacon-and-eggs-eating emic motif. The latter, however, occasionally functions as a part of the main course in a heavy breakfast when visitors are present; dry cereal occasionally substitutes for cooked cereal, but two kinds of cereal would not be expected to fill the two parts of the main course for a visitor's breakfast. A further problem remains: the cereal-eating motif is perhaps simultaneously an included behavioreme (§5.3); this overlap will be discussed in the next section.

Verbal emic motifs--i.e., morphemes--like nonverbal ones, occur in the breakfast materials. Note the utterance portion (B36/5.9) M--: ... 2-when we o2fished 2-in that o2riv-1er | 4-wasn't that o3-2fine|. Here the morphemes include the segmental ones: when; we; fish; -ed; in; that; river; was; n't; it; fine; and the intonational* ones: 2-; o2; 2-; o2-1; 4-; o3-2; the significant breath group type symbolized at its end by the tenative pause mark [|]; and possibly some others of voice quality, rhythm, and so on, which characterize the style of the speaker at that particular moment.

Each morpheme is trimodally structured. For example, the morpheme {not} (which we enclose in braces--cf. Hockett, 1946b, p. 278 fn. 11--and Harris, 1951, p. 15, fn. 16 to indicate that all variants of this morpheme are being referred to as a group) has a purposive component in its feature mode, meaning 'negation.' The variant n't is but one manifested variant of the morpheme, which also includes the variant not, with a vowel. These variants are sometimes free and sometimes conditioned; following was, in such a colloquial, non-emphatic context as that given above (i.e., in Wasn't that fine), only n't occurs. Under such a context as He's not... (following the variant 's of {is}), only the variant not, with a vowel, occurs. As for one sample characteristic of the distribution mode of {not}, as a whole, we may see that it is a unique member of a distribution class of morphemes in that it, and it alone, fills the spot after was in Wasn't it? whereas the morpheme was is one member of a distribution class of several morphemes which can come at the beginning of that phrase (e.g., is, has, wo- (won't), would, and so on).

6.3 The Emic Motif Contrasted with the Behavioreme

By comparing the definition of the emic motif (§6.1) with that for the behavioreme (§5.1) we may note two principal differences: (1) an

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*There appear to be four relative, non-absolute but contrasting emic pitch levels in the English intonation system; these we have numbered from high to low, with high pitch as number 1. Where we wish to indicate pitch morphemes we will write the sequence of contrastive pitch levels by superscript numbers preceding the syllable or sequence of syllables over which the pitch contour is spread; the superscript degree sign indicates "sentence stress," the beginning of a primary contour; hyphens join members of a single total contour; the single vertical bar indicates the pause at the end of a "poised" or "tentative" breath group, whereas a double one would have signalled a "relaxed" or "final" breath group and pause. For a detailed analysis of the intonation system of English, see Pike, 1945; for a differing analysis, see Trager and Smith, 1951. For the relation of pitch materials to the present theory see §13.

emic motif is sometimes smaller than a minimum behavioreme--in fact it would usually be so--whereas a behavioreme can never be smaller than an emic motif, and (2) the emic motif as such does not of itself in nonhypostasic contexts carry with it top focus or closure. For example, one expanded minimum (§5.3) verbal included behavioremic variant in these materials is (B18/8.5) M--: 4-Don't o3-take -2your | o3-slipp-2ers o1-2off |. Within it are the segmental morphemes Do (with changed vowel), n't, take, your, slipper, -s, and off plus the simultaneous intonational morphemes 4-, o3-2, o3-2, o1-2, and two breath-group morphemes. No one of these by itself would be likely to constitute a nonhypostasic included behavioreme within the breakfast scene (though as a reply to special situations a combination of slipper with an appropriate intonational accompaniment is conceivable, whereas this could never happen with -s except in some form of analytical hypostasis).

It is possible, however, for a particular manifested variant of a behavioreme to contain only one emic motif, such that the variant of the behavioreme would begin and end with the beginning and ending of that emic motif. In such an instance the manifested variant of the motif constitutes the manifested variant of the behavioreme. The purposive-meaning components of their respective feature modes is only partially overlapping, however, while the expanded variants of the same emic minimum behavioreme might contain several emic motifs in sequence, and components of their respective distribution modes (including specific and potential function as wholes, and their internal spots) would differ. If, for example, we ignore for a moment the intonational units but look only at the segmental ones, then in the English uttereme of 'command', the variant Come! is comprised of the single morpheme come; yet the same verbal behavioreme--the same uttereme--could be manifested by different morphemes as in Run! or Jump!, in which the meaning in the feature mode of the uttereme (i.e., the meaning of 'command') is unchanged, while the morphemes with their meanings are replaced. Other variants of the same uttereme may be of an expanded type, and contain a sequence of several morphemes, as in Come here! or Run fast! or Come over here!

In English we never quite reach this overlap of a single morpheme as the total manifestation of a total uttereme variant, since in English the latter always contains at least one intonational morpheme simultaneously with the segmental one. In (B18/1) o3-2What, for example, there is the segmental morpheme what plus the intonational morpheme which rises from relative pitch level three to relative pitch level two. In Comanche, of Oklahoma, no such obligatory duality of segmental and intonational morphemes seems to occur, since the bulk of the emotional overtones of surprise, fear, disgust, and the like, which in English are often carried by intonational elements are in Comanche signalled by other means (cf. Smalley, 1953, p. 297).

In nonverbal behavior I suspect that included behavioremes are much more frequently manifested by single motifs than they would appear to be in English speech even were intonation to be ignored, although not enough work has been done on nonverbal emic motifs for us to be at all certain. Even if the eating of a bowl of cereal is best treated as an emic motif, as we implied above (§5.2), it would seem also at times to constitute a manifested variant of the included behavioreme 'eating main course', since there is cultural data indicating that it occasionally comes into focus for the adult participants (e.g., in What are we going to have to eat?) as well as for the learning child.

6.4 The Feature Mode of the Morpheme

6.41 Minimum Purposive Units in Reference to Hypostasis in a Componential System

If, however, we assume that the eating of a bowl of cereal constitutes a minimum purposive unit in the feature mode of the breakfast behavioreme, we must now face a considerable body of evidence which appears to contradict this conclusion and to indicate that there are smaller purposeful elements within such an episode: cultural evidence demonstrates that attention does sometimes focus on parts of the cereal-eating event in a manner that makes them appear to be purposive. Note such phrases as: Pick up your spoon; Hold it this way; Open your mouth; Swallow; Let go of the spoon (held by the teeth); Put it down; Take another bite; etc. Why, then, should not these smaller and apparently purposive units be considered the minimum ones, rather than the cereal-eating event as a whole? Why was not the "threshold" of the minimum unit of the breakfast scene lowered to this point?

The answer seems to be that items such as these occur in special kinds of situations--situations in which the parent is teaching the child or is giving him orders--and this kind of situation and this kind of unit is quite different from the normal (e.g., adult) eating of breakfast which we analyzed as an emic motif. We suggest, then, that a teaching episode constitutes part of a componential system which may be included within the manifestation of the larger

breakfast eme as a whole: the separate teaching orders constitute hypostasic bits which are not part of a behavioreme of normal breakfast eating. These smaller purposive wholes comprised of the included teaching or commanding situations are not smaller emic motifs within the normal cereal-eating unit as such, but are rather bits of functional hypostasis (§4.23) which serve as minimum, emic motifs in a teaching behavioreme included within the eating units, as parts of a componential simultaneous system in which the teaching units partially overlap in their manifested forms with the larger eating unit.

Similar types of situations where hypostasic elements of the teaching scene are very clearly in evidence are to be observed when one is watching a coach teaching people to swim, or to high jump, or to sing, or to do whatever it may be. There the specific instructions may temporarily focus attention on details which later must drop below the threshold of participant focus if one is to perform well under competitive situations or in public.

Another type of situation which makes the necessity of such an approach even more clear, perhaps, is the vocal activity in a phonetics class. Here for the pronunciation of a particular vowel one may hear utterances like Spread your lips wider, or Raise your tongue, and so on, but this very useful attention to details of vocal articulation should not lead the analyst to regard a temporarily purposive and conscious 'raising of the tongue' to be analyzed on a par with verbal items such as boy, cat, -ish, and -ing, which--on the basis of nonhypostasic material--are treated as the minimum elements of the feature mode of English verbal emic utterances. It would cause utter confusion, also, to attempt to treat these items of hypostasic behavior on the same level as (that is, in the same componential system of behavior with) the normal pronunciation of sounds when one is talking rapidly a language which he knows thoroughly. Similarly, it would ultimately prevent a behavioremic analysis if one attempted to equate, on the same threshold level, the items boy and -ish merely on the basis of their hypostasic use in quotation by a linguist (i.e., in I said "boy," and I said "-ish").

In general terms, it is evident that it is unprofitable to attempt to treat emic motifs of purposive behavior from one componential system within the framework of the componential system of another type of behavior even though the two may, as in the breakfast scene, be occurring at the same time, with the same or with different actors (e.g., an adult eating normally while a child is being instructed to eat). We may, indeed, go further and point out that on a larger scale it is ultimately an approach related to this one that allows us to separate French utterances from--say--Chinese utterances, in the speech of a bilingual, or a colloquial from a formal style (see §16). It is for reasons such as these, also, that words--and even sentences--must not be studied outside of total concrete behavioral contexts under the misapprehension that valid conclusions concerning these isolated, hypostasic data are valid for the description of the units of normal, contextual speech; normal (i.e., nonhypostasic) and hypostasic verbal systems may be partially congruent without being completely so.

6.42 Sources of Analytical Knowledge of Purposes and Meanings

Purpose and meaning may nevertheless be found, in part, (1) by observing analytical hypostasis within the culture itself--by observing the things that participants say about their purposes and meanings, when trying to give an analysis of them for technical purposes. More important (2) is the observation of what participants imply indirectly or state directly in their conversation at times when they are "off guard" and are merely acting a normal participant part within which some functional hypostasis (§4.23) does occur. If we were limited to verbal comments by informants, important though these may be, the margin of error would be wider than it actually is, since people sometimes deliberately give false statements about their purposes and meanings, or their observational and analytical ability may be poor, or the range of variation of purpose within a body of participants may be so large as to leave verbal reports confused or conflicting. When a person, for psychological comfort, persuades himself that his purposes are different from those which an objective analysis would indicate are the underlying motives, a further problem arises which we shall not treat until §17. Finally, and most important, the analyst (3) may by-pass the use of such materials, by observing regularities of sequence in events, with the assumption that human activity is purposive if it regularly elicits either (a) a positive response activity to the eliciting activity (e.g., shutting the door in response to a request), or (b) a deliberately verbalized or nonverbalized resistance to or rejection of the elicited response (e.g., I won't); and from this objective point of view purpose and meaning largely consist of such response elicitations. Note, for example, Fries:

> In the study of the language records of a former time we have, because of the nature of the evidence, usually had to try to arrive at the meanings of the language

forms by connecting them with recurring elements in the situations in which they were used. In the study of living languages it is often possible to observe directly the responses which particular language forms elicit in a speech community. We assume that if a particular response regularly follows the utterance of a language pattern, then this pattern "means" this response. Upon such regular recurrences rests the kind of prediction that makes possible the social functioning of languages' (1954, p. 65).

Insofar as the analyst is concerned, in each of these three kinds of data, the objective study of objective responses, whether in the form of verbal activity or of nonverbal activity, is the source of his determination of the presence and nature of meaning and purpose. In utilizing meaning and purpose it is not necessary to have direct access to mental events; the objective data indicated above are sufficient. The detection of this component is possible for the analyst provided that he utilizes all available, observable elements within the cultural data itself, and that he allow for an ample margin of error--especially in situations where lying may be present (§6.44).

6.43 Conceptualized Hypostasis in Participant Awareness of Purpose and Meaning

One of the observable elements of human behavior, however, and an extremely important one, is precisely the fact that participants in that behavior affirm an awareness or knowledge of meaning or purpose, but without analyzing these meanings or purposes as an awareness of that potential for elicitation of response which we have set forth as the principal component of these meanings. What, then, is the technical analysis of this awareness itself? Or can our theory find room for it, without destroying the objectivity of its approach? Our reply is, first, to accept this fact of affirmed awareness of meanings as an objective observable datum on a par with other observable verbal events; people say things about meanings, and these sayings we collect and study as part of our total corpus of material to be described. Our later step (which will not appear clearly until §18) is to treat this awareness in a manner analogous to other situations in which participants in an activity abstract some part of it for observation and discussion outside the immediate context of normal usage--i.e., as some form of hypostasis (cf. §4.23); this participant awareness of meaning or purpose, and their focusing of attention upon it for discussion or understanding, would be a CONCEPTUALIZED HYPOSTASIS of a potential (i.e., successful or unsuccessful) response elicitation. And it is this characteristic, rather than the more technical matters of response elicitation, which is likely to constitute the predominant usage of the term 'meaning' by the non-analytical participant in speech behavior. The analyst, however, must have a theory which allows the popular hypostasic reaction to meaning to be treated as a specialized instance of a broader technical principal of responses elicited in context, whether that context be an ordinary one or one involving technical or lay personnel performing an analysis. (Cf., for conceptualized hypostasis in regard to spots, §7.321; cf. also §18.)

A similar problem occurs in the analysis of nonverbal materials: Is the analyst to ignore completely the elements which the participants in that activity allege are its purposes? Or is he to take the stated purposes at their face value as being the "real" purposes of that activity? Our answer is neither of these two. We assume that the basic purpose or meaning of a nonverbal activity, like that of a verbal one, is to be detected by the objective evaluation of objective distributional data of elicited responses as observed by the analyst; included within the ultimate data to be analyzed, however, are the statements of the participants as they attempt to verbalize their purposes; the units of purpose analyzed in this second type of data may be quite different from those detected in the first data, and the second type constitute an analysis of the participants' conceptualized hypostasic purposes, whereas the first--the nonverbalized--type of data lead to an analysis of units of behavior of which one component is the nonhypostasic purposive one. For a similar outlook, which seems to me to be arrived at without reference to any over-all theory, note Lounsbury, who says: 'Moreover, I continue to believe that a culture is what the investigation of its carriers by the anthropologist proves it to be and not what informants think it is or ought to be. The amount of rationalization, idealism, self-righteousness, and hope evidenced by carriers of a culture is quite properly a part of the culture or at least a [conceptualized hypostasic] commentary on the culture, but it is not a definition of the [nonhypostasic] culture' (1953, p. 116); cf. also Greenberg (1948, p. 143).

At this point we return once more to the difference between a behavioreme and an emic motif: By definition, a verbal behavioreme--an uttereme--to be analyzed as such must at some point in the data be found as a kind of unit which receives participant focus in nonhypostasic situations. A meaning for a particular variant of an uttereme (but not, sometimes, for

the abstracted pattern as a whole) may often easily be found. Since, however, the particular verbal emic motif--the particular morpheme--may be below the threshold of focus of non-analytical members of a culture, they will be unable to report, on questioning, any meaning for some of the morphemes, even though the analyst can satisfy himself by objective study that such items are meaningful and can describe the nature of that meaning. Thus, for example, an English-speaking child may be able to give some reasonably good reply to a question such as What does 'house' mean? but be unable to reply adequately to the query What does '-ly' in 'beautifully' mean? Adults in a literate society are made aware of many of these items through dictionaries, which in essence are hypostasic listings, but in a pre-literate society the linguist frequently--usually, it seems to me--finds that an adult has little or no understanding of the meanings of his morphemes below the threshold size of potential included utteremes (cf. "words," §11). Some well-planned experiments on such matters might prove very interesting, and are needed for theoretical purposes.

6.44 Indeterminacy and Margin of Error in Analyzing Purpose and Meaning

In spite of the problems which are involved, it is absolutely essential, if one is to study behavior as it actually functions, that one assume that the analyst can detect the presence and to some degree the nature of meaning and purpose. It should be strongly emphasized, however, that this by no means implies that we assume that the analyst is able to detect meaning and purpose without error--rather it is assumed that he does so crudely, with a margin of indeterminacy and of error. Nevertheless his possible degree of accuracy is sufficiently high to enable him to utilize this feature of the morpheme and of the uttereme to help identify these units, provided that from the earliest stages of his analysis he always accompanies the study of this purposive-meaning component of the emic units with a study of the formal components of their physical activity, and attempts the analysis neither of form nor of meaning by itself without reference to the other (cf. §§6.46, 5.64, 6.91).

Error in analysis differs from indeterminacy in analysis. Errors in analysis can in principle, at least, be corrected by the analyst or his successors by utilizing more adequate data or more adequate procedures. Indeterminacy, on the other hand, is of a type which in the nature of the case can never be resolved regardless of the amount of data collected; in fact, certain types of indeterminacy increase as one attempts to resolve them the more vigorously. An error, for example, might be quite simple: the analyst may have thought that an informant pointed at a person's eye when he spoke a word, when in fact the informant was pointing at the eyebrow. Or the foreign analyst might assume that for English he had all the usages of the word table and define it in reference to four-legged pieces of furniture, before coming across the fact that the same term is applied to three-legged pieces of furniture as well.

Indeterminacy of meaning is much more subtle: is the element port the same, in the items port of entry, to reach port, portal, porthole, portmanteau, portcullis, porter, portentious, Portland, Portugese, portrait, portly? The data may be such that there are partial phonetic and partial semantic resemblances between certain of these items, but the decision at some point must be arbitrary as to assignment of some of the most perplexing of these items, since a theory of the structure of behavior must leave room for variants in both form and meaning, but without being able to provide any absolute measure of just how much alike or just how different either form or meaning or the form-meaning composite may be before one can no longer equate two items. In our present theory we state that the indeterminacy lies in the data, within the structure, and that any arbitrary attempt to force a decision one way or another in certain instances does violence to the structure rather than clarifying it.

If, in the face of this problem, we attempt to 'leave it up to the informant' or to ask the informant whether two such items are 'same" or 'different' (§2.73), a practical decision may thus be reached for better or for worse, but the technical situation may have deteriorated and become increasingly indeterminate, insofar as the very questioning may itself have changed the structure which we were investigating. This follows from materials which we have already indicated; namely, that the meaning of an item is determined by the contexts in which it has been used (§2.5); the use of this item port in a context comprised of the linguist speaking to the informant is part of the total data which now constitutes the background circumstances within which the informant has heard the items used and which determine the meaning for him. The linguist, therefore, has by his process of investigation changed the very data he is investigating: an informant is to this extent 'dissected'--i.e., 'spoiled' as a so-called 'naïve' (i.e., normal) native speaker--and can never again be reconstituted exactly as he was before. Conclusions arrived at by such techniques (which sometimes

greatly speed up the analytical process), therefore, must in principle be checked against fresh data unbiased by such questioning. In practice, structural conclusions for which informants are used are often checked against a body of textual material into which this bias could not have entered--say by using recorded conversational material of other speakers.

This problem becomes especially acute, however, if one wishes to investigate the awareness of purpose and meaning rather than these elements without reference to the awareness threshold. It is evident that if an informant has been exposed to a direct question such as Do you think of "port" in "porthole" as the same as "port" in "to arrive in port?" his awareness of such a possibility will then be present whether it was before or not--and in delicate instances the informant frequently finds it impossible to recall how he reacted to such matters before he was questioned. For such reasons, linguists find it necessary to exercise caution in utilizing themselves as their own informants since their analytical procedure can so easily modify the system they are studying, without their being conscious of the fact that a shift in the data is going on at the very time they are working. If two morphs--e.g., two of the above instances of port--share the same formal elements of sound or of nonverbal activity, it is still possible for them to be emically distinct, in spite of their likeness in form; such a verbal pair constitutes a set of homonyms; a nonverbal pair is a set of homomorphic motifs (§2.2). Intentional acts, for example, constitute different emic motifs from unintentional acts homomorphic with them: the obviously deliberate spilling of milk on the table at breakfast differs from the nondeliberate spilling of milk and elicits a different parental reaction; or the intentional grounding of a forward pass in football differs from the mere failure to pass it accurately (§4.1.10). As we have already indicated (§2.2) a culture may have specific procedures, in courts of law, to determine intention and purpose in retrospect in order that the culture may know what are the next acts appropriate for that culture; even the culture itself provides for indeterminacy at such points in that there are courts for appeal against the decision of lower courts; an analysis of the culture therefore must not distort the structural picture by concealing the fact that it is the culture itself which allows for such indeterminacy. In the instances in which it is possible to differentiate emically between homonyms or homomorphic units, however, the fact that they are different must be determined (1) by the difference of distribution of the two units within larger units, (2) by their structural function within the total system, and (3) by differences of purpose or meaning which are sufficiently sharp to warrant their being handled as emically separate. Here the word 'sufficiently' leaves an ultimate area of indeterminacy.

It is clear, furthermore, that the meaning of a morpheme can be so greatly weakened in certain contexts that the respective variants of the morpheme in these contexts have little meaning in common (compare the use of terrible in the phrases terribly good, terribly bad, terribly funny, and a terrible sight). The amount by which any two members of a morpheme can differ in meaning and yet remain variants of that morpheme is dependent upon the total system to which it belongs, and in some instances is procedurally indeterminate.

6.45 Morphemes Without Lexical Meaning

For the moment, we shall use the term 'lexical meaning' or 'dictionary meaning' without attempting a detailed technical discussion of it (but see §§10 and 17). For our present purpose it is sufficient to state (a) that this is the kind of meaning which is analytically assigned to the internal units of the feature mode of a verbal behavioreme whenever such meanings are found at all, (b) that it is sometimes above the awareness threshold of the untrained native speaker, in conceptualized hypostasis of the potential response elicitations (§6.43), and (c) that it specifically excludes certain types of meanings derived from the manifestation and distribution modes of the behavioreme--meaning types which have not yet been discussed (§§7.321 and 17). The lexical meaning of boy, for example, is roughly 'male child'; of -ish, 'having the traits of'.

Where no lexically meaningful component can be detected for a morpheme it may be called an EMPTY one. Such empty morphemes can be carefully identified only as a residue following the analysis or partial analysis of elements which are meaningful. Some of the reasons underlying the necessity for this procedural delay are probably (1) the fact that the large majority of those sequences of sounds which early in the analysis appear to be meaningless will later prove to be (a) lexically meaningful, with the meaning at first obscure but later identified, or (b) mistakenly segmented into a tentative morpheme, so that it is later shown to belong to a part of a large sequence of sounds as part of a larger morpheme manifested by that longer sequence (or mistakenly segmented in such a way that it comprises parts of two morphemes, etc.) or (c) proves to be not a live morph, but a dead one, and hence part of

an etically complex morpheme (see §6.54 and §6.1, definition), and (2) that a system of utteremes is functionally a communicative (as well as an esthetically expressive) device on a level of conceptual awareness--but that that function could not be served by a language with too large a proportion of lexically-meaningless elements as members of its feature mode which must carry the major portion of the conceptual burden (but for other kinds of awareness, from other modes, see §§17 and 18). If, however, this reasoning proves to be inadequate, and not replaceable by a more fruitful argument, then we would change our justification to a purely empirical one--that few such elements are in fact found--rather than a theoretical one. The reader should note, in this connection, the last phrase of the definition of emic motif in §6.1, and the change which it might force in that phrase.

Empty morphemes are sufficiently infrequent in English to make it difficult to find examples which are not open to challenge. Perhaps the element does, in the sentence Does he go to the school here? is adequate (cf. Fries, 'this does has no lexical meaning whatever' 1952, p. 149). If so, then the reader should be prepared to find this type discussed again, as 'function words,' when their grammatical function is under consideration (§7.323-24). Occasionally one or more sounds occurs between two apparent morphemes, without being clearly assignable to the one or to the other, yet with no clear meaning of its own; some such 'stem formative' might be analyzable as an empty morpheme, though I suspect that frequently it might prove more useful to analyze such an element as one morph of a morphetically-complex morpheme whose other morph is one of the adjacent ones. Compare meritorious where the merit and -ous are separated by -ori-; in this instance my preference would be to treat -ori- as not an active element, since it is not found with a wide variety of stems and suffixes, but to treat it as an etic part of the total etically-complex variant -orious; had the -ori- been active, however, but still with no apparent meaning, it might have served as an example of an empty morpheme.

Certain English exclamatory elements in which the meaning is largely obtained by the intonation superimposed upon them might be illustrative of another kind of empty or partially empty morpheme. I am uneasy about such an analysis, however, since an item like mhm, which seems at first to be almost an empty morph, cannot be quite handled in this way; the rising intonation which accompanies it, and which together with it means 'yes', does not by itself mean 'yes'--so part of this lexical meaning seems to come from the segmental unit itself. Furthermore, it seems to be in some quasi-contrast with the segmental part of such an item as m?m, with morpheme-medial closure of the vocal cords, since this morpheme plus its accompanying intonation means 'no' even though that intonation on other items does not necessarily imply negation.

A further kind of empty morpheme would be an ARTIFICIAL one. These are deliberately created by some individual for humorous--or other--purposes. Note, for example, the following, from Kelly (1952, p. 19):

With his filibeg fair filligreed
With finest filiform,
He fleetly footed froo and fro
The figwort in the storm.
A flaught of borealis and a
Firkin fine of fat
Was fimbricated on the fringe
Of Frelinghuysen's hat.

Quite different from these are the empty morphemes which occur in structurally active classes, and hence are structurally active themselves even while lexically nonproductive. These are found as elements of frequently repeated stereotyped phrases or 'formulas': Consider, for example, rack in the phrase rack and ruin; or shrift in to make short shrift of; or wax in wax and wane. In terms of nonverbal behavior similar problems arise; thus the activity of sewing buttons on the sleeve of a man's coat is a process with little current purpose outside of its "formula" value as it fits into the pattern of making a coat in a fashion acceptable to society.

6.46 Identificational-Contrastive and Meaningful-Formal Characteristics of a Morpheme

The sum of the physical components of the feature mode of any morpheme will be seen to cover the same data as the sum of the components of all the variants (§6.5) of the manifestation mode of that morpheme. The structuring of the data, however, is quite different in the two modes. In the analysis of the manifestation mode of a morpheme into variants, we will find (§6.5) that the basic product is a number of NON-SIMULTANEOUS SEGMENTS of activity, no two of which occur at the same moment and place in any one behavior event. In the analysis of the feature mode of a morpheme, however, a basic product is a number of SIMULTANEOUS COMPONENTS which cut "horizontally" through time,

instead of "vertically," so that several of them may be occurring at a single moment of time in one of the variants of that morpheme.

For any one particular culture, these components may often be divided into distinct sets in accordance with their membership in certain simultaneous componential systems (cf. §§13, 15, 16)--especially, for verbal motifs, with pitch or stress components versus articulatory components formed in the mouth--or in relation to the simultaneous articulatory components of any one such system. It is such an outlook, on a higher level of focus, which underlies the analysis of a complex behavioreme into verbal and nonverbal elements, or into verbal and nonverbal componential systems. Without, at some point, a simultaneous-component analysis via the feature mode, the description would become unwieldy or unintelligible and chaotic; without a nonsimultaneous-segment analysis via the manifestation mode there would be no coherent set of units to analyze. "Meaning" is in part the conceptualized hypostasis (§6.43) of a simultaneous component.

Although we have discussed the formal characteristics of the morpheme here as if they were separable from the meaning characteristics, which we discussed in §§6.41-45, a correction must now be made: Neither the formal component nor the meaning component of a morpheme must be treated as a nonhypostasic eme in its own right, even though both are given a hypostasic unity in the activity of the analyst (cf. conceptualized hypostasis in §§6.43, 7.321, 18). Rather we must insist that a lexically-meaningful morpheme constitutes a FORM-MEANING COMPOSITE (but for lexically-meaningless morphemes see §6.45) in which both analytically-observed components are so fused in actual activity that neither may be abstracted as a unit for normal participants acting in a nonhypostasic manner. This point of view has been relevant to our discussion on two previous occasions (§§2.2, 5.64), and is certain to recur again (e.g., §6.91).

Similarly, it must be insisted that here, and later on for the phoneme, every eme is simultaneously identificational as well as contrastive. That is to say, that once a morpheme is discovered, by observing its relationships to other morphemes in a system of morphemes (§§6.7, 16) that morpheme can then be identified in other circumstances where some of the contrastive morphemes do not occur. Here, again, a composite label is necessary to represent this point of view: a morpheme is an IDENTIFICATIONAL-CONTRASTIVE COMPOSITE of features. Only in analytical conceptualized hypostasis (§§6.43, 7.321, can we view these elements as separate; they are not assumed, in this theory, to constitute separate emes in their own right in nonhypostasic behavior.

6.5 The Manifestation Mode of the Morpheme

The basic elements of the manifestation mode are the separate repetitions, or different occurrences, of that same morpheme. The sum of the occurrences of a morpheme makes up the total manifestation mode of that morpheme.

6.51 Identical Manifestations

In referring to the SAME VARIANT OF A MORPHEME, we shall mean, except when it is stated specifically otherwise, that two or more instances or occurrences of that morpheme (a) have the same verbal emic units of sound--the same phonemes--manifesting them, and (b) have meanings so similar that the analyst at that moment does not detect differences between them. If, however, the analyst notices that two same variants of a morpheme nevertheless differ slightly phonetically, in that the phonemes in the two instances are the same but the manifesting variants of the phonemes have differed slightly but nonphonemically, he may choose to refer to these instances as different PHONETIC VARIETIES OF THE SAME PHONEMIC VARIANT OF THAT MORPHEME; such phonetic varieties of a phonemic manifestation of a morpheme occur at every repetition of a morpheme, inasmuch as no two physiological movements can be exactly duplicated (§2.3; for phonetic variation, see also §8).

Repeated utterances of cat, therefore, or the word cat in the two utterances I saw the cat, and My cat is here, would be the 'same' variant of the morpheme cat in so far as its emic sounds were concerned, even though some slight physical variation in those sounds is certain to occur in the various repetitions. On the other hand, am is not the same variant of that morpheme in the two utterances I am going and I'm going, since the loss of the vowel in the second utterance is the loss of an emic unit of sound. In order to constitute the 'same' variant of a morpheme, two instances of that morpheme must have the same phonemic content and have the same lexical meaning, but the instances may occur at different times or may occur in different spots in utterances.

6.52 Free Variants of a Morpheme

Phonemically-different morpheme variants each of which (1) has the same effect on the hearer, (2) with no predictability of occurrence

(a) in reference to the local linguistic environment or (b) in reference to the social environment or to the general style are COMPLETELY FREE. In my dialect the different pronunciations of the noun address, with stress on first and on second syllable, respectively, seem to illustrate such completely-free variation. On the nonverbal level, there are completely-free variants within the breakfast scene, as for example the precise manner in which one alternates bites of toast with spoonfuls of cereal. Every completely-free variant of a morpheme is LOCALLY free: the particular environment of the morphemes in sequence with it neither cause the selection of nor prevent the presence of the particular variant under attention.

Whenever an emic unit is manifested by two different variants, it is sometimes convenient to speak of each variant as an ALLO-UNIT, or allo-eme. Variants of a morpheme, therefore, would constitute allomorphic variants of a morpheme, or ALLOMORPHS.

6.53 Locally-Conditioned Variants of a Morpheme

On the other hand, a morpheme may be manifested by LOCALLY-CONDITIONED variants, in which the selection of variant is determined by the surroundings within which the manifested unit is occurring. Within the present theory, this conditioning can perhaps be most easily described by stating that the manifested form of the morpheme--the minimum unit of the feature mode of the uttereme--can be modified under the impact of its occurrence in or adjacent to a minimum unit of any of the three minimum kinds of units of the respective modes of the uttereme: it may be conditioned (1) by occurring next to a minimum unit of the manifestation mode of the uttereme (which would be an emic unit of sound, a phoneme), or (2) next to the minimum unit of the feature mode of the uttereme (i.e., another morpheme), or (3) as occurring within--i.e., manifesting--a minimum spot-class correlative of the distribution mode of the uttereme (i.e., a grameme).

As for the first of these, an illustration of a morpheme so modified is the 'plural' morpheme in English: following the words cat, bat, cup, etc., it has the variant -s, without the vibration of the vocal chords; a different variant (-es) of the same morpheme follows the words house, mouse, juice, and other words which end in a sibilant sound; it is this minimum unit of sound which determines the selection of the -es variant of the plural morpheme, just as it is the particular type of articulation at the end of cat, and cup, which determines the occurrence of the -s variant after those words. The evidence leading to this kind of conclusion is the large number of examples following these patterns. In general, it may be said that this kind of conditioning is REGULAR and produces PHONEMICALLY-CONDITIONED PHONOLOGICAL VARIANTS OF MORPHEMES.

The second type of local conditioning may be illustrated by another manifested variant of the same plural morpheme: the -en plural on oxen. Here the occurrence of that particular variant of the plural morpheme is specifically limited to a position immediately preceding the particular morpheme ox, and no other; the occurrence of -en is conditioned by the occurrence of ox. In general, this kind of conditioning is IRREGULAR, and produces a MORPHEMICALLY-CONDITIONED PHONOLOGICAL VARIANT OF A MORPHEME.

The descriptive validity and usefulness of statements concerning the first two kinds of conditioning seem to be adequately established in the literature, with details much more intricate than we can repeat here. The third type is implied by the trimodal approach being developed in this volume, and has not been tested with a large enough amount of data to make its ultimate usefulness certain. Since it seems to fit the general pattern of structure as we see it, however, and since it bears on areas which have been difficult to analyze convincingly in any other way, we introduce it. If we assume that I and me are manifested variants of the same morpheme {I}, and in view of the fact that these variants are not in free variation with each other and are not conditioned in occurrence by any one other morpheme or set of morphemes, what would be the conditioning factor? The variant me occurs in certain spots in the distribution hierarchy of the behavioreme where I does not occur, and vice versa--e.g., in the instances I came home; He gave it to me; He met me. It may be assumed, in such an instance, that it is the minimum gramemic-spot-morphemic-class unit of the distribution mode which has conditioned the occurrence of the two variants of {I}, so that me is a GRAMEMICALLY-CONDITIONED PHONOLOGICAL VARIANT OF A MORPHEME. This reasoning should not be extended to apply to house (noun) and house (verb), however, since each of these two is respectively a member of a distinct class--distinct as proved by other data of a kind to be discussed in §§ 7 and 16--whereas I and me were each members of the same larger class, most of whose members could occur in all the positions that both I and me could occupy (cf. John in John came home; He gave it to John; He met John). On the other hand, house (noun) and house (verb) are not assumed to

constitute manifested variants of a single morpheme *{house}.; cf. discussion in §6.91 p. 97.

Groupings such as the three types above do not form rigid water-tight compartments. For example, the "regular" plurals are regular insofar as they occur in that form in numbers large enough, and in forms consistent enough, to permit a generalization in terms of the phonological pattern, but the irregular ones are irregular not only in themselves, but also concomitantly produce an irregularity in the total pattern of the otherwise regular occurrence of such forms under the same phonological conditions.

A question must be asked in reference to variants under each of the three conditioned types: Is there any essential degree of similarity in sound to which two variants of a morpheme must conform, if they are to be considered variants of that morpheme? We have implied, so far in this discussion, that there is no such restriction, since we have treated -en and -s both as variants of {-s plural} and I and me as variants of {I}. We wish, now, however, to add a general empirical type of restriction similar to that given for the presence of meaningless emic motifs in a system (§6.1). In any one system, there can be only a relatively SMALL NUMBER OF MORPHEMES WITH PHONOLOGICALLY-UNRELATED VARIANTS. If any system were at some time to contain a great number of phonologically-unrelated members of units, it would presumably disintegrate as a system, or else undergo a reorganization of its parts; communication depends upon the ability of the users of a system to recognize its signals upon the repetition or re-occurrence of those signals, so that the mass of them must have manifested variants which are phonologically alike to a recognizable degree. From an operational point of view, therefore, any phonologically-nonsimilar variants should be accepted as members of a single morpheme only as a residue of elements after the bulk of the language has been analyzed without reference to such units, and even then they must not be analyzed as members of a single morpheme unless they can be shown to be (a) in complementary distribution, (b) within a single distributional class; synonymns such as big and large are excluded by provision (a), since they both occur in sentences such as It is a big book and It is a large book; items like my and me (but not I and me, for which see above) are excluded by provision (b), since my can serve in spots along with elements of a class that include that or two in such sentences as I want that book or I want two books, but cannot occur in spots where members of a distribution class including John or the boy do occur.

Morphemic variants, however, are not limited to changes in their phonological content. Their semantic characteristics, also, may be modified (as we implied in §6.44), and give SEMANTIC VARIANTS OF MORPHEMES. This modification may be caused by their juxtaposition to a morpheme or morpheme sequence, as drive in to drive a car means something slightly different--i.e., is a different semantic variant--from what it does in to drive a horse. An allomorph is a MORPHEMICALLY (or LEXICALLY) CONDITIONED SEMANTIC VARIANT OF A MORPHEME when the neighboring morpheme is the conditioning element. The degree of semantic variation which can occur in any of these conditioned changes of meaning is indeterminate (§6.44). (Changes in the meaning of morphemes which is forced on them by their occurrence in certain gramemic spots--i.e., GRAMEMICALLY-CONDITIONED SEMANTIC VARIANTS OF MORPHEMES--will be discussed in §7.323.) If phonemes of neighboring morphemes affect the meaning of a morpheme, a PHONEMICALLY-CONDITIONED SEMANTIC VARIANT OF THAT MORPHEME is produced. This may occur in verse, if the semantic impact of a particular morpheme is heightened by its relation to other morphemes which rime or are in alliteration with it. Note, for example, the effect of the use of [f] in the verse by Kelly, §6.45. (Illustrated there, also, are many artificial, parasitic morphs which likewise are affected by the semantic impact of the phonological materials; but parasitic elements in general will not be discussed, however, until §6.62).

6.54 Morphetically-Complex Variants of a Morpheme

A variant or member of a morpheme is etically SIMPLE when no smaller meaningful morphs can be observed within it. It is this type of morphene which we have discussed thus far. Occasionally, however, it is useful to postulate single morphemes which have etically COMPLEX variants or members in that within them two (or more) meaningful units can be detected, but in a sequence which as a whole must be analyzed as a single minimum active variant or member of that morpheme. Much of the relevant discussion pertaining to these complex items will be delayed until §6.61, but an illustration or two may be helpful at this point.

A morpheme may be morphetically simple in those instances in which a single morph such as boy constitutes the only variant of the morpheme. In a word like hamlet, in which the morph ham- occurs with the same active morph -let as occurs with brook in brooklet, we

conclude that the ham- is not active (since it does not seem to occur with other suffixes, nor by itself, nor have any present functional relation to a word like home); we then further conclude that the total word hamlet is a single active but morphetically-complex variant of a morpheme comprised of the two morphs ham- and -let. (The word oxen, however, would be a sequence of two morphemes, since the -en, though not occurring with other morphemes, is nevertheless analyzed--see §6.53--as a variant of an active morpheme. The word breakfast would here undoubtedly be analyzed as a single active morpheme. If, however, break- and -fast were to be treated as separate morphs (on the alleged ground that the present native reaction to the parts of the word would allow for the analysis of a present structural connection with the full words break and fast, or because of the clustering of consonants in the middle of it), then breakfast would be treated as morphetically complex, but this decision does not affect the treatment of the whole as a single morpheme. Similarly, if one concludes (because of parallels with conceive, deceive, convict, depict, etc.) that receive contains two morphs re- and -ceive, then in our treatment we would further state that the two morphs are members of a single morphetically-complex morpheme. My personal preference (for semantic and distributional reasons) is to treat receive as a single morph, and not to divide it etically, but we wish to point out the fact that the theory here allows for both starting points, but from each arrives at the same essential conclusion for the word as a whole--that it is but one morpheme. Some of the linguists who treat words like conceive as containing two morphemes (Bloomfield, 1933, pp. 209, 240-46, 366; Nida, 1949, p. 59) likewise treat words like hammer or spider as containing two (Bloomfield, 1933; Nida in 1946, but not in 1949, p. 60). Here, likewise, we would treat the words as single morphs rather than sequences of morphs, but the net result would be somewhat the same in our theory for both approaches, since were we to treat them as comprised of two morphs in sequence, we would then further analyze them as comprising a morphetically-complex variant of a single morpheme. Similarly, were we to follow Bloomfield (1933, p. 245)--which we do not--in setting up the "symbolic" element -ash of bash, clash, crash, dash, flash, gash as a 'root-forming' morpheme meaning 'violent movement', we would then indicate further that the entire word flash, for example, was a single morpheme but one which--under such an analysis--would turn out to be morphetically complex. (For our handling of the special signalling characteristics of these words, however, see §17.)

It would seem, moreover, that a word like truth could be treated easily in this way as containing two clear morphs--true and -th--but only one active, morphetically-complex morpheme. It might be further possible--though at this point I am still in doubt--to treat certain compounds like blackbird (cf. §6.61) in a comparable way. Be that as it may, in any one particular instance, the general approach is very helpful, since it allows us to arrive at a unit which on an emic, functional level is simple, but within which the analyst can postulate a substructuring of morphs without destroying its functional analysis as a single unit.

A special instance of an etically-complex morpheme is one in which the member is DISCONTINUOUS; the total variant is interrupted by a second morpheme, so that the "first" morpheme occurs split into two or more noncontiguous parts. For a nonverbal illustration of a discontinuous emic motif, note that the cereal-eating motif may be interrupted by a bite of toast, and then continued.

Within this theory, however, there is a restriction as to the application of this principle of discontinuous morphs of a morphetically-complex morpheme: Two noncontiguous members of a single morphetically-complex morpheme cannot be members respectively of two distinct hypermorphemes. (A single morpheme whether morphetically simple or morphetically complex can be simultaneously a member of two hypermorphemes only at a point of fusion between them. The possibility of fused hypermorphemes, and the consequences of a single morpheme at the point of fusion, will be discussed in §14; it is not convenient to discuss it further, here, since more background discussion is needed before it can be presented economically.) Now "words"--when the term is useful (cf. §11) would be instances of such hypermorphemes, if they were comprised of a stem, let us say, plus an affix, so that this principle rules out the approach of Harris who sets up as single morphemes the combined discontinuous elements in concord (1945; 1951, pp. 166, 182, 205, 210) such that within filius bonus the ... us ... us 'together constitute one broken morpheme, meaning male' (1951, p. 166, and see, for a discussion of the theoretical implications of this problem, Bazell, 1953, pp. 6-7, 9-10).

6.55 Fused versus Clearly-Segmented Variants of Morphemes

The etically-simple morphemes so far discussed have been relatively simple to segment, one from the other; it has been easy to see where one morpheme stopped and the other

began (provided that we assume, as we have done, that we know what the emic units of sound are and do not become concerned with drawing any line between the physical manifestations of these sounds in sequence--a problem which will concern us in §8). In cats there are clearly the two units, cat and s. The procedure for determining this fact, had English been a language strange to us, will be discussed in §6.81; here we wish only to mention the results of such analysis and its simplicity. The problem becomes more difficult, however, when we try to find will in won't, since the change of vowel leaves us at first uneasy, because of the changed physical form of the variants; nevertheless, the will is clearly not phonemically reflected in the n't, so we would divide the two morphemes as wo--n't. The problem becomes acute, however, when a single sound joins two morphemes in sequence and cannot be assigned to either of them. In a rapid pronunciation of as you (like), the as and you sometimes have such a sound, [ɮ], between them. Even more difficult is a situation in which two words are completely coalesced into a single emic unit of sound; compare, for example, the slow pronunciation of Did you enjoy it? with a very rapid, slurred /ʤɪnʤoɪ ɪt/, in which the first syllable (pronounced the same as gin in ginger) contains such a fusion. Our definition, in §6.1, made provision for such elements, and hence needs to be illustrated here; our analysis of these items and of zero variants, however, will be given in a later Chapter (§14).

6.56 Locally-Free but Systemically-Conditioned Variants of Morphemes

A morphemic variant is SYSTEMICALLY CONDITIONED when it is determined by--and in turn helps to signal the presence of--the particular nonsimultaneous componential system (§§5.4, 16) or style within which the morpheme is being produced, but is not determined by the morphemes, as such, which are adjacent to it. If a particular analyst is ignoring the social connotations (§17) derived from such systems or styles, these variants are likely to appear in his analysis as completely free variation, inasmuch as no local factors are determining their occurrence.

In the nonverbal materials such systemically (stylistically) conditioned variants of emic motifs occur in the breakfast scene: There may be more formality, for example, when visitors are present. Specifically, the family might be more careful to all begin their cereal-eating together, after waiting for each person to finish his fruit juice.

Of the verbal motif variants, note those morpheme abbreviations which are used in good colloquial speech but which would be avoided by some speakers in formal contexts. There appear to be some speakers, for example, who instead of saying can't, try always to say cannot in public address, but who would use the abbreviated form in conversation. Here the variants n't and not constitute locally-unconditioned but SYSTEMICALLY-CONDITIONED PHONOLOGICAL VARIANTS OF A MORPHEME, inasmuch as the neighboring morphemes are not responsible for this difference; on the other hand they are stylistically conditioned in that the general formality system determines for that particular actor the variant of not which he will use.

Similar systemically-conditioned but locally-unconditioned elements will meet us in various places in the analysis (see, for example, whispering and voice quality in §8). This implies that the system of morphemes must be determined separately for each componential system or style, and that then we may find that two or more componential systems or styles have many (or most) of their morphemes in common, even though the variants manifesting some of them differ.

Occasionally a hypercongruent system (§5.4) will contain two variants of a morpheme, distributed in such a way that only one of the variants occurs in one style, but that either of the variants may optionally occur in the other. Here it is the option which is conditioned by the style, not a single variant form as such. This would be the situation for a person who uses both can't and cannot in non-emphatic public address, but who uses only can't in non-emphatic conversation.

We also find SYSTEMICALLY-CONDITIONED SEMANTIC VARIANTS OF MORPHEMES (cf. §6.53) which are in part conditioned by the style or congruent system (§§5.4, 7.313(4)) or by the lexical context (§7.313(4)) or matrix (§§4.46, 7.313(4)) in which they happen to be occurring at the time. Note, for example, the semantic variant of bird in He is a queer bird as over against a different linguistic (and, presumably, physical) matrix in That is a queer bird.

6.6 The Distribution Mode of the Morpheme

6.61 Activeness of Morphemes

In our definition in §6.1 we indicated that morphemes were ACTIVE (or live, productive). This characteristic of the morpheme is highly important to it and to the structuring of behavior but its delineation meets with very serious practical difficulties, since perhaps more than anywhere else, structural indeterminacy leads

not merely to a static uncertainty and permanent blurring of borders but to a more dynamic state of tension and readiness to change.

As a first test for activeness, we suggest that when a spot in a pattern can have any one of a large number of purposive or meaningful elements occurring there, each of these elements is active. Thus in the sentences I saw John; I saw Bill; I saw Jim; I saw Tom; the items Tom, Bill, Jim are seen to be active.

Similarly in the utterances I saw the great big boy; I saw all the men; I saw ten sheep; the items the great big boy, all the men, and ten sheep are active. These latter, however, are not minimum elements (and hence are not single morphemes) even though they are active ones. The fact that they are not minimum can be further demonstrated by active substitutions, as in the phrase the great big boy, thus: the great big man, the great big sheep, the great big house, etc.

A second test for activeness is that the item joins in a larger unit where elements are so substituted, even though it cannot itself be replaced by substitutions of this type; thus in cats, houses, dogs, pigs, tables, chairs the plural element is active because of the active materials preceding it, even though no other morphemes can substitute for the plural one.

A third test for activeness is seen when a particular purposive unit can occur in a wide variety of different kinds of functional spots. Note, for example, the morpheme big in the utterances I saw the big boy; He is too big; He is not big enough; Bigness is not of itself desirable. The fact that the morph big occurs in several different kinds of places contributes towards the analysis of its activeness.

A fourth test is that new combinations previously unknown to the language can be demonstrated to have occurred within recent times. Thus for example -burger in cheeseburger seems now to be active, in parallel with its usage in hamburger from which it probably has been developed.

This, however, poses a problem of indeterminacy: Is one such new usage sufficient to indicate that an item is active? Does that one particular element have to have widespread usage throughout the community, or only in the speech of a few of its individuals? At some point it would appear certain that elements such as -burger become active and productive; at other times it would seem certain that an item has no such productive activeness; in between there is a fuzzy border line.

This border line may work in two directions: it may be there when a sequence of sounds is just becoming active, like -burger, or, on the other hand, it may be there when a former active morpheme has become so joined to a neighboring morpheme that it loses its productivity, and constitutes with its neighbor a single etically-complex active form. I would suggest, for example, that both brook and -let are still active in brooklet, but that hamlet constitutes a single etically-complex morpheme in which the first part is now certainly not active (cf. §6.54).

This raises a further question as to whether, when an inactive element is coalesced to an active one, the active element still retains its active character in the new combination. Our solution is to suggest that some etic morphs (like cran-, and like ham- of hamlet) are inactive, while others, like -let and berry may constitute fully active, morphemes in some environments, but in other environments constitute SEMI-ACTIVE members of etically-complex morphemes.

Once we have admitted the presence of some semi-active members of a system, with a single such etic morph constituting one of two etic members of a single etically-complex morpheme, the question may be raised as to whether a single morpheme may be comprised of two etic morphs both of which--not just one of them--may be semi-active. Possibly a word like greenhouse (which is not green, but grows green plants) would fit such a category. If so, then compounds which are not regularly formed, and especially those which have a specialized meaning, might be profitably handled in some such way. If we were to treat greenhouse as a single etically-complex morpheme, then Jack-in-the-pulpit would likewise be a single etically complex morpheme, but one in which there were four semi-active morphs. If this does not prove useful, however, then in the present theory they would be treated on a higher level of the hierarchy of the feature mode of the behavioreme, as a special unit in such a higher layer (§10).

This leads to a fifth criterion of activeness, namely, the presence of a meaning (a) which is relatively easy to determine by non-questioning techniques, and (b) which is seen to contribute in a regular fashion to the total meaning of the morph sequence of which it is a part. Thus the green- of greenhouse meets condition (a), but fails to meet condition (b), which is rather met in the phrase a green house; the semi-active rather than the active state of green- in the compound would therefore be suggested by this criterion. On the other hand, completely-inactive items such as the cran- of cranberry fill neither of these conditions.

As a sixth criterion, related to the fifth, we are likely to consider active any morph which the native speaker, upon questioning, can describe, or discuss easily, or define; e.g., one

occasionally hears a linguist say to an informant: Does X mean anything? If the answer is No, or a shrug, the test does not prove activeness--nor does it prove passiveness. This test, however, may increase the indeterminacy of the ultimate analysis and the errors within it, by modifying the linguistic structuring of the informant, as we indicated in §6.44.

As a seventh criterion, we recognize as fully active any morph at the time it is constituting the only segmental morph manifesting an uttereme, as boy in the exclamation Boy!

As an eighth criterion, we note that there are oftentimes intonational or pausal options on or at the borders of active morphs which are normally (i.e., apart from hesitation, hypostasis, etc.) absent from an inactive morph. Thus a glide and stress may optionally occur on the active re- of re-cover (meaning 'to cover again') which would not appear under the same conditions on the first syllable of recover ('to gain back').

As a ninth criterion, one may note that the investigator is more likely, other things being equal, to consider a morph active if it is easily segmented out of a continuum so that its borders are clear than he is if the morph is fused (§§6.55, 6.66, 7.45, 14) to another morph or morphs.

Inactive etic morphs are passive (or dormant, nonproductive, "dead"). These (1) may be constituted of morphs which previously were active but now have lost their productivity (cf. break in breakfast; -th in truth) or (2) they may appear as the end product of borrowing from a second language certain elements which there patterned actively, but which the borrowing language does not treat as such (as re- and -ceive in receive; but cf. §6.54); or (3) they may be constituted of inactive elements coupled to elsewhere active ones (cran- in cranberry; -eteria in such a neologism as wash-eteria modeled after cafeteria). At the border line there is considerable indeterminacy, since, for example, an item like -eteria may at some uncertain point become active if it is used freely and naturally by enough people in a variety of combinations; here the passive element itself becomes active, while the semi-active element to which it is attached becomes fully active by becoming part of a productive class of items occurring in that position. Even a passive morph, however, may often have a somewhat explicit, or else a vague contribution to the total semantic meaning of the element of which it is a part. Note, for example, the semantic function of passive morphs in many neologisms, as for the utter- in uttereme (as an abbreviation of utterance-eme, §5.1).

6.62 Parasitic (Latent) Morphs, and Differences in Participants

Certain other kinds of elements become partially active in quite a different way, as PARASITIC (or LATENT) morphs which are the result of a kind of folk etymology, which finds within a word of one overall meaning an included sequence of sounds which is homophonous, or partially homophonous, with some other word historically unrelated to the host word. Thus some persons react in their avoidance or usage of words as if they observed fake in fakir, bust in robust, sex in sextet, nigger in niggardly, noise in noisesome, religious in sacrilegious, pun in pundit, etc. (Read, 1949, pp. 306-12, whence the terms "parasitic" and "host" also are borrowed). I was mentioning this linguistic characteristic to one adult, for example, and illustrating it with the word fakir; this person replied: I thought 'fakir' was where we got the word 'fake'! Such reactions can be observed in young children, as well as in ordinary conversation or in puns of adults; note these I have observed: S--: Daddy, are those your alligator shoes? F--: Yes. S--: What do you alligate 'em with?; or F--: ...without alloy! S--: Daddy, What's "loy"?; or B69/10.1 B--: ... terramycin [medicine]. S--: [No!] It's mine!; or F--: [teaching the name of Webster Lake, Mass.] ... Chargoggagoggmanchaugagogg-chaubunagungamogg. S--: Ladies chaugagogg; or S--: In the middle of "leggings" they start with "guns," don't they? (in which leggings contained a mid central vowel in the second syllable). Or note the following indicident: 72/13 F--: His little toe's awfully big, isn't it? S--: His little toe, is off? F--: Is big!

Any meaningless sounds not included in such a parasitic part of the host word would constitute a passive morph; the part under attention would therefore be parasitically semi-active: in pundit, when viewed in this way, the -dit would be passive, the pun- parasitically semi-active, and the whole would constitute a single morpheme which temporarily or optionally (or dialectally) is etically complex with an included parasitic element.

Occasionally the nonparasitic part would also become fully active, or be equated to an active element; note that the -r in fakir becomes equated with the -er in farmer, once the first part is equated to fake. Note also, in written humor, the near-activeness of -minton, with near-emptiness of meaning (§6.45), in the following conversation: Elephant: ...join in a game of badminton; Donkey: I'm playing a game of good-minton (Kelly, 1952, p. 185); also, same author, ignor-omnibus (p. 20), rebellicosely (p. 22), stuck on a technicalorie (p. 28), in which the analysis

involves further partial identifications of forms.

I recall the incident when I first heard someone read in a Church of England service the phrase manifold blessings, with the pronunciation many-fold; for the first time it occurred to me that this mani- was the "same" as many. My reaction to that word manifold, regardless of pronunciation, has never been the same since. It seems to me, on the basis of such experiences as this, that the actual morphemic system of some individuals must be considered to be different from that of others, as mine differed before and after this incident. Specifically, for example, a Latin scholar, who is very intent at understanding the etymological sources of his English words, reacts differently from the man-in-the-street. This becomes objectively visible--not a mere subjective judgment--when the Latin scholar becomes annoyed if the man-in-the-street uses certain affixes in ways which are not etymologically consistent, whereas the man-in-the-street may himself be unmoved by this problem. It appears to me that the strong emotional reaction of some of these scholars may not be due exclusively to the fact that they are aware of etymological inconsistencies, but may be based upon a far deeper situation--namely, the fact of a different morphemic system which they have as over against that of the man-in-the-street, but largely congruent with his.

In other words, just as we had differences of observers and of observer types in the church service, and in the football game (§§3.16, 4.23), so there are differences of speakers in reference to their morphemic systems within the community. Even though the actual manifestation (pronunciation or use) of the systems may be almost identical, language systems of such individuals are in fact not quite the same. The detection of details of this type may be handled by a judicious combination of direct questioning (though this type of inquiry is subject to very large margin of error and indeterminacy, cf. §6.44) with careful observation of the way people react to new linguistic situations over a long period of time (which is difficult, but not completely impossible).

6.63 Morphemic-Class Membership and Potential-Distribution as Components of the Distribution Mode of a Morpheme

Another characteristic of the distribution mode of the morpheme intimately related to its activeness is the fact that the morpheme is an ALTERNATIVE FOR THE MANIFESTATION OF AN EMIC SPOT, a possibility of selection, one of the range of options (cf. §7.311) which the actor may exercise in his living. Thus the morphemes boy, dog, horse are among the alternatives for selection for occurrence in the spot after My in the phrase My dog came home. By virtue of the fact that for any one particular emic spot a number of morphemes constitute the available options at that spot, this list of morphemes constitutes a DISTRIBUTION CLASS OF MORPHEMES. One of the principal components of the distribution mode of a morpheme is its MEMBERSHIP in such a class, and in a system of such classes, and, in connection with its membership in such classes, its POTENTIAL and observed distribution in various kinds of spots in various utteremes.

It is worth noting, further, that TIME, as imbedded in the distribution mode, has been implied in the previous paragraph, but that time does not need treatment as a separable component of the mode. Class membership can only be determined in reference to events which are past (verbal utterances which are past, when the emic motifs under attention are verbal ones); and only by a comparison of the structure and meaning of two or more utterances which have occurred in the immediate past, or in the somewhat more remote past, can the analyst begin to tell that two items should be classified distributionally together. No one utterance by itself, in an unknown language, gives the analyst a clue as to where the borders of morphemes occur within it, nor the classes into which they fall. An element of time past is therefore implicit in the assumption of the presence of distribution classes.

Similarly, future time is imbedded in the theory at this point as a function of the potential for occurrence of a member of a distribution class (cf. Bazell, 1953, p. 12, 'The distribution of a unit is the totality of its possible relations'). Once the membership of a class is known, and the spot-distribution of that class is known, one can PREDICT the possibility of occurrences of certain morpheme sequences, before they have occurred; one may also predict even more specifically the native reaction to a certain utterance (with a moderate degree of indeterminacy via negation or misunderstanding, cf. §6.44) which the analyst may use in speaking to an informant, in testing that utterance. These elements of essential predictability carry with them a certain amount of the "future" into the formulation of the distribution mode of the morpheme (and cf. §7.52 for potential as a component of the grameme).

From the point of view of the analyst-observer, the "near-past" and "near-future" seem in these particular instances to be essentially undifferentiated. Both are simultaneously represented within the components of the distribution mode of his emic units at each level of the

theory, with an area of indeterminacy for "error" or "invention" of native speakers who may on rare occasions depart from the norms of the community. Both, furthermore, involve predictions as to data which the observer may, within this margin of error, expect to find on a previously recorded tape, or in future utterances of informants.

Similarly, the "present" enters into the linguistic formulations as a flexible element which is neither an extensionless razor edge between the past and the future, nor a fixed span of hours or seconds, but rather a flexible span of attention. The term "focus" (§3.3, and Chapter 4)--more specifically in the phrase "height of focus" (§4.2)--covers this element of time, provided that the focus so considered is that of active participants in an event in progress, which in turn involves some part of the event completed and some part of it always uncompleted. Once an event is finished, and is looked on as finished, the detachment with which it is viewed in retrospect is a kind of functional hypostasis (if a non-analytical member of the culture is doing the viewing--§4.23) or of analytical or analytical-functional hypostasis (if an outsider or analyst is considering the completed event--§4.23). It would seem to follow that a morpheme never constitutes a "present" in this sense, unless it happens to be manifesting a complete uttereme under conscious attention (as in Boy!) or is under the immediate scrutiny of the analyst; ordinarily a morpheme (except in a hypostasic dictionary listing) is below the threshold of participant awareness and shorter than a unit of "present" focus of utteremic size and character.

For a comment on the manner in which this avoids the necessity of postulating in this theory a "fourth dimension" constituted of time, see footnote at end of §3.56, and cf. §12. Time, to the behavioremic analyst, appears only as a kind of useful participant or analytical conceptualized hypostasis (cf. §§6.43, 4.23) of a sequence component of physical events.

6.64 The Internal Structure of a Morpheme

In §6.61 we discussed the possibility of elements being active, as one component of the distribution mode of morphemes--a component which involved their occurrence in larger situations, that is in spots within utteremes. We now add the further statement concerning the distribution mode (already implied within the course of our discussion, §3.51) that the internal structure of the morpheme has one of a number of kinds of sequences of actions which occur within that particular componential system of morphemes.

In morphemes these actions result in some typical sequences of sounds. In English, for example, we have many morphemes manifested by three emic units of sound in the sequence consonant-vowel-consonant, as in cat, run, sit, tip. In addition to this CVC pattern (in which C represents an emic unit of consonant sound--not consonant letter--and V represents vowel), there are patterns of CCVC (trip), of CCCVC (strip) of CCCVVC (stripe, i.e. [straip]), VC (is), VVC (ice), VCC (ant), C (-s in cats), CVCVC (ticket), VCVCVCC (elephant), and many others. Yet these patterns do not all have the same functional burden, inasmuch as morphemes with a distributional component of the internal pattern C, for example, may serve as suffixes (e.g., the plural variant -s), or as abbreviated variants of longer forms, in rapid speech, as [-v] in I've gone, but do not constitute morphemes in the same class with cat, dog, tree, elephant, automobile. Similarly, the form VC is frequent in words like of, in, at, but relatively less frequent in the class containing dog, automobile. Such patterns, especially the frequent ones, in any language, may be called SHAPE TYPES (after Martin, 1952, p.16; cf. canonical forms, Hockett, 1947a, p.333; or prosodies, Firth, 1948, p. 141).

Each language must be analyzed one at a time, in determining its own shape types and the functional part each plays. Nevertheless, there is sufficient uniformity throughout the world so that the analyst in the early stages may utilize his knowledge of this fact to make early guesses concerning the probable functioning type of morphemes as they emerge in his analysis. On the one hand, morphemes of the form V, or C, or VC, or CV, are likely to be suspected as constituting prefixes, suffixes, or grammatical markers of some kind. On the other hand, apparent morphemes comprised of several syllables are likely to be immediately suspect, in that they may prove to have been incompletely analyzed, and to be constituted of two or more morphemes in sequence.

Not only do these shape types have a bearing on the functional load of a form and the identification or signalling of its class membership, but they may also have some effect upon the occurrence of parasitic morphs (§6.62). Other things being equal, a sequence of sounds which is homophonous with a morpheme of a frequent shape type, but which is included within a larger sequence of sound, is more likely to be treated by some speaker as a parasitic morph than is a sequence which does not comprise such a pattern. Thus it was much more probable that S-- would abstract man from the sequence ...oggmanchauga... (§6.62) than that he would have abstracted the sequence an which is simpler but manifesting a less frequent shape type.

A further characteristic of a morpheme is its relationship to a class of morphemes of which it is a member and, through its class membership, its relationship to a system of morphemes. Earlier in this section we attributed to the distribution mode of a morpheme its distribution (or relationship to) sequences of morphemes; so, now, we attribute to the distribution mode of a morpheme its occurrence within (and relationship to) a class (or classes) of morphemes and a system (or systems) of morphemes. The classes and systems in which morphemes occur will be treated, however, in §§6.7, 7.31, 16.

6.65 An Occurring Allomorph Viewed as Constituting an Occurring Morpheme

Here also I adopt a further convention which I feel strongly is necessary and legitimate, but for which the theoretical justification is only partially worked out; WHENEVER A VARIANT OF A MORPHEME HAS OCCURRED THE MORPHEME ITSELF HAS OCCURRED; if one has just heard a variant of a morpheme (say, the variant [-z] of the English plural) he has just heard that morpheme (i.e., he has heard the English plural morpheme). Cf. also Lounsbury, 'A morpheme may be said to OCCUR when one of its phonemic forms occurs (1953, p. 6). This does not say, however, that hearing a variant of a morpheme is hearing all the variants of that morpheme at once. It does not say, furthermore, that when hearing a variant of the morpheme the listener 'thought he heard' an ideal of some type. It states, rather, that insofar as human reaction to human behavior is concerned, a variant is the unit, at that time and place, in its normal distribution.

An analogy from far afield may be useful to help the reader understand this point of view for morphemes (but for a contrasting attitude towards morphemic classes, see §7.313(4)). Let us think, for the moment, of the person John Doe as if he were a "morpheme": To-day he is one "allomorph"; yesterday he was a different "allomorph" (of himself as an emic unit); after eating a T-bone steak he will be a still different "allomorph"; each "occurrence" of John Doe on these different days, with different physiological variants (or even different clothing variants), we will pretend is a separate "allomorph" of that individual. For purposes of studying the emic system of human behavior, including the behavior of John Doe and his colleagues, it is more convenient--and probably justified--to say that when we meet John Doe in the variant of a "post-T-bone-steak-satiation-allomorph" we have 'actually met' John Doe, than to say that human behavior is analyzable only under the assumption that a person never meets John Doe himself, but only an "allomorph" of him. To be sure, some kinds of philosophical discussion of John Doe can be made--perhaps must be made--without this assumption, but they seem to constitute a kind of "etic" analysis of his structure; any analysis of John Doe AS THE CULTURE REACTS TO HIM, i.e., any emic analysis, must assume that anyone who has just met an "allomorph" of John Doe has in fact just met John Doe.

6.66 Border Limits of Morphemes in Reference to Grammemes

Within the definition in §6.1 we implied that a morpheme was co-extensive with and distributed within a grammeme. This would seem to imply that there are limits to a morpheme. How rigid are these limits, how sharp cut are the borders between them, and is there an element of indeterminacy such as has been met at other points in the theory?

In general, the answer is probably clear. Usually one morpheme can be separated from another, and we can see where one begins and ends without too much difficulty. The rule-of-thumb procedure for identifying these borders and units will be given in §6.81. Similarly, we can state that wherever a morpheme ends, a grammeme ends; wherever a morpheme begins, a grammeme begins.

A number of special difficulties arise when one attempts to apply these principles, however. Some of them may be listed here, though the treatment of them will be left to later sections (especially §14) where the problems can be dealt with against a background of more elements of the theory as a whole. (1) Two morphemes may partially fuse together so that no clear border can be discovered between them; the border comes within a phoneme (cf. §§6.55, 14, 21). This situation, like the next one, carries with it the blurring of the boundaries of the grammemes which they are manifesting and within which they are distributed. (2) Two morphemes may in some particular manifestation be completely fused, so that no border at all can be found between them in that instance (§§6.55, 14, 21). (3) A single morpheme may in certain instances manifest two fused grammemes (§§7.45, 14). (4) A morpheme sequence can manifest a minimum (expanded) grammeme (§7.44). (5) Morpheme boundaries which may appear to be sharp cut in a phonemic transcription of those sequences may be seen to be blurred if one looks at them etically, in reference to the slurring of the borders of the emic units of sound (§8); phonemically the border may be clear when phonetically it is blurred. (6) A morpheme may have discontinuous parts (§6.54), so that the segment between

the borders beginning and ending the morpheme is interrupted, raising the problem of two internal borders which are either clear or fused also.

6.7 Systems of Morphemes as Comprised of Emic Classes of Morphemes

The detailed study of the nature of systems and classes of morphemes can best be postponed until Chapters 7 and 16, when it can be discussed in relation to systems and classes of other kinds of units which will be presented in the next few chapters. Enough of that material needs to be briefly foreshadowed here, however, to give an initial broader perspective concerning the kind of matrix within which a morpheme occurs.

Whereas a morpheme is a member of a distribution class of morphemes (§6,63), a distribution class of such morphemes is in turn a member of an emic class of emic distribution classes of morphemes, which we shall call an emic SYSTEM of morphemes and/or of their classes. Within any one large system there may be included various simultaneous smaller componential systems of morphemes--e.g., one for segmental morphemes and one for intonational morphemes. Likewise, when different styles involve some differences in the number of morphemes, the congruent systems of morphemes will not have quite the same inventory--e.g., thee, thou, and -est (as in knowest) are special members of one such congruent system of morphemes used in some verse or in prayer (§7.313(3-4)). A set of all systems of morphemes, which are congruent and/or simultaneous, together with all other verbal units congruent with them (including those to be discussed in Chapters 7 through 13), constitute a single, larger, hypercomponential emic system of verbal behavior as a whole (§5.4), a LANGUAGE; the nonverbal units of behavior constitute other high-layered componential emic systems.

Just as a morpheme may have its different manifested variants, so two morph classes, each largely alike but partially different, may constitute variants of a single emic class of morphemes. These characteristics of morpheme classes will be discussed in §7.313(3); for the moment it will be sufficient to indicate that since morph classes are comprised of variants of those morphemes, the morph classes vary with the morphs contained in them, so that the manifestations of a morpheme class may be locally conditioned (§§6.53, 7.313(3)) (1) by its phonemic surroundings, (2) by its morphemic surroundings, and (3) by its gramemic-spot occurrence; and may also be conditioned (4) by its occurrence in a componential or congruent system (§§6.56, 7.313(3-4)). The illustrations given for morpheme variants apply here if the class containing the morphs is considered instead of the individual morphs themselves.

An additional problem needs to be mentioned. From one point of view a unit is a composite of CONTRASTIVE RELATIONSHIPS within a system. One of the most difficult of the theoretical problems, which must be faced by such a theory as this one, is the balance to be struck between giving priority to the relationships themselves on the one hand or to be given to the items which are at the poles of the relationships, on the other (e.g., cf. discussion in Bazell, 1953, p.110; Harris, 1951, p. 370-71). In this theory, we have ended by putting emphasis on unity rather than on diversity; we have set up emic units for our basic attention rather than "oppositions," or "relations," or "constructions," for primary attention. Thus our whole theory revolves around the terms behavioreme, emic motif, and so on, rather than revolving around constructions or relations (cf. also §7, and 16).

At first this appears to be unsatisfactory since no unit can exist except as (a pole of) a relation within a larger series of units, and hence it might seem as if the relation should get prior attention and prior place in the theory. As the theory worked out, however, it appeared more satisfactory in the long run to set up the units as basic, and treat the contrastive relationships between units in part as subsidiary to them (especially through the feature mode of a unit) and in part as the interlocking of these units within still larger units in their respective hierarchies of units and systems of units. Some of the strongest reasons for this decision will not appear until §§7, 8, and 11. Already, however, we have had at least two valuable aids from it: (1) the treating of components of the feature mode as identificational as well as contrastive (and which will help by-pass one of the problems of "neutralization," in §6.91--and cf. §8), and (2) the ability to focus on units which always have concrete manifested forms rather than attempting to treat as basic units the conceptualized relationships as abstracted from their physical manifestations.

Nevertheless, emic units within this theory are not absolutes in a vacuum, but rather are points in a system, and these points are defined RELATIVE to the system (cf. also §16). A unit must be studied, not in isolation, but as part of a total functioning componential system within a total culture. It is this problem which ultimately forms the basis for the necessity of handling emics as different from etics (§2), and for treating verbal and nonverbal elements in a single theory (§1). It is this fact, also, which

is reflected in--and which in part necessitated--the definition of a morpheme (§6.1) as a unit within a verbal behavioreme; the definitions of the morpheme in reference to its place in and relative to a hierarchical structure is the device by which this essential element of relativity is provided for in the theory. A more detailed discussion of the problem will appear in §16.

6.8 Morphetics

Just as a special linguistic term is provided for a verbal kind of behavioreme (i.e., the uttereme), so a linguistic term was provided in §6.1 for a verbal motif. Every etic verbal motif is a MORPH, and every emic verbal motif is a MORPHEME; thus boy, -ish, and the plural {-s} are morphemes; the English plural variants -s, -es, -en of cats, houses, and of oxen, etc., are each morphs which constitute members of the morpheme {-s}. Every morpheme is an emic motif but not every emic motif is a morpheme, since not every motif is a verbal one. From this general statement a useful rule-of-thumb can be deduced:

Every minimum, verbal, lexically-meaningful segment of human behavior is a morph and, subject to certain limitations (§6.85), is likely to be analyzable as a member of a morpheme. That is to say, that any segment of normal behavior which can be shown (a) to have lexical meaning and (b) to be nondivisible into elements which are lexically-meaningful may be assumed, in the very large majority of instances, to constitute a member of an emic unit of the morpheme type, with a probable margin of error small enough to make the assumption the best one for getting an initial etic start in emic linguistic study. Thus, for example, in Don't blow bubbles the elements which can be segmented as meaningful and as minimal in the feature mode of an English utterance would be Do, n't, blow, bubble, and -s; each of these is a morph, and each would prove, upon further study, to constitute a member of a morpheme.

6.81 Segmentation of a Continuum into Morphs

Just as it was necessary to suggest (§5.51) means by which etic utterances could be identified within a larger continuum of speech, so it is necessary to discover the morph units within utterances.

The procedure for identifying morphs is (1) to obtain two utterances which are partly alike in form and meaning, and whose general meaning is known by gesture, translation, or paraphrase, and (a) to find the least common denominator of form and meaning by which the two are alike (as the boy in the boy came home and the boy ran away), or (b) to find an identifiable element by which the two differ in form and meaning (e.g., yesterday in the boy came home and the boy came home yesterday). Then (2) the same kind of comparisons are made on a large body of data, including the material already obtained as a result of the first step, and the smallest meaningful forms in the resulting elements are morphs (e.g., the boy, obtained earlier, would be broken down into morphs the and boy after one also obtained--in addition to the boy came home--phrases such as the man came home and a boy came home). In one respect this may be considered a frame technique (§5.51) applied to morphs.

Early errors in drawing morph boundaries have to be corrected by later comparison with other occurrences of these tentative morphs in various environments to check to see that neither too much nor too little phonetic material has been attributed to any one morph (e.g., a stranger, upon hearing only long, without a [g] pronounced, and longer, with [g] pronounced, might for some time include the [g] as part of the morph -er). In addition, morpheme boundaries may be fused (§6.55, and §14), causing further difficult problems or indeterminacy in boundary identification.

6.82 Etic Classificatory Criteria for Morph Types

Various criteria of an etic nature may be used to describe morphs in a manner comparable to that used for an etic utterance in §5.52.

A first set of criteria may allow the analyst to make initial observations according to some characteristic of the manifestation mode (§6.5) of the morph:

(a) Is the sound pattern (§6.64) of the morph comprised exclusively of segmental sounds? or of one component (or more) of a sound? or of a pitch unit or sequence? or of stress? or of length? or of some combination of these? or of a process of change from one sound (or sounds) to another?

(b) How many units of sound are in this pattern?

(c) What are the types of sounds (or sound components) in this sequence, and how are they arranged (e.g., as stopped consonant plus vowel plus consonant, etc.)?

A second set of criteria may allow a rough, highly tentative, semantic classification of a morph. (In current linguistic practice such a grouping is seldom handled formally, and is not used after the early stages of analysis, although probably all workers get quick clues from such

meanings, leading to profitable hypotheses of distribution-class membership and grammatical function--hypotheses rigorously tested, discarded, or revised by later emic procedures):

(d) Is the meaning concrete, or objective, or such that experience would suggest that the morph is likely to be found serving as a stem or as a principal word? Or would experience suggest that because of its meaning (and possibly its size) it is more likely to be found here as an affix, or functioning as a small grammatical particle?

(e) If it seems to fall within the first of these two groups, does it signify an object? or an action? or process? or a state? or a quality? or other comparable element? What specific range of meaning, within one of these groups, does it have?

(f) If it appears to be of the second kind, is its meaning somewhat like that of a conjunction? article? personal pronoun? relative pronoun? preposition? or other similar item? or does it indicate gender of item mentioned (size, shape, sex)? or of speaker (men vs. women or children)? animate or inanimate? number (singular, dual, trial, plural)? case? possession? alienable or inalienable? time (past, present, future, near, remote)? aspect (complete, incomplete, continuous, repeated, begun)? visibility or invisibility? transitive or intransitive? subject or object (direct or indirect)? active or passive? direction of action (from, to)? cause? certainty? source of knowledge (first hand, hearsay)? or other factor (see listing and illustration in Nida, 1949, pp. 149, 168-69, 181-86, from which the last part of this paragraph in part draws).

We shall proceed now to a further kind of criterion--the occurrence of the morphs of a particular language within distribution classes in that language. For structural purposes, morph groupings should be arrived at only* in relation to morph distribution classes.

6.83 Etic Classificatory Criteria for Morphs in Relation to their Distribution Classes

An etic distribution class of morphs is a group of individual morphs which occur in a particular structural spot in some specific utterance or utterance type, or is a group of morphs each of which can occur in a number of such spots, manifesting the same morph class (§6.7). The characteristics of a morpheme class--their specific relationships to the distribution mode of the uttereme, their relationships to one another in an utterance, etc.--will be treated later (cf. §§7.31, 7.32,11). Here we wish to list a few criteria which have more specific reference to the membership of a morph in a class than to the analysis of the class constituted of such morphs:

(a) Is the morph in a class which is relatively large (say with 200 or more morphs), or is it in a class which is small (say with half a dozen)? (For discussion of this point, see §7.313(1).)

(b) Is it in a class which constitutes a subclass of a large morph class which appears in another spot or spots?

(c) If it is in a subclass of a larger class, is the subclass determined by the fact that it correlates in some way with one or more specific members of another class (say with he, or she, or it, or they, etc.)? (§7.313(2).)

(d) Is the morph in a class whose membership is determined by its occurrence in one spot, only, or in various spots? (§§7.313(2-3), 7.321.)

(e) Does this morph occur in a class in which many of the morphs in the class contain a meaning-component in common (such as "object," or "action," or "tense")? If so, what is that meaning? (§7.313(1).) Does this particular morph share that class meaning?

6.84 Summary of the Relation of Morphs to Morphemes

In order to pass from a prestructural, etic description of the minimum units of the feature mode of utterances to an emic description of these minimum units a set of emic procedures is necessary, as it is for the emic analysis of the utterances themselves (§5.5). In both procedures, advanced etic training affords a means of faster handling of the data of an unfamiliar language, but carries with it an inevitable degree of etic distortion of the local pattern, but a distortion which the emic procedures are designed to eliminate more or less successfully.

Alternatives underlying the equating of any specific morph with some morpheme or part thereof during the analysis can be summarized in a manner used for utterances (§5.5). Once a morph is identified in accordance with the criteria mentioned in §6.82, it may be assumed that it is one of the following:

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*By implication this rejects as structurally invalid any grouping arrived at on purely semantic grounds, and also rejects as incomplete or as inaccurate any definition such as that 'a noun is the name of a person place or thing,' since (a) distributional criteria are, in fact, utilized in identifying the group of items labelled 'noun,' and (b) the grouping retains some items such as seizure which the semantic criterion, by itself, would have eliminated.

either (a) a free variant of a morpheme (§6.52)
or (b) a conditioned variant of a morpheme (§6.53)
or (c) part of an etically-complex variant of a morpheme (§6.54)
or (d) a sequence of manifested variants of two or more morphemes, such that it needs to be segmented further into (morphs and) morphemes (cf. §6.81)
or (e) a fused composite variant of two partially-simultaneous or completely-simultaneous morphemes (§§6.81, 14)
or (f) an error of morphetic analysis, or of recording the sounds, which would be eliminated upon further study.
and (g) the morphemes comprised of these morphs are members of emic distribution classes of morphemes within the larger system of emic classes within the language as a whole; in this respect the morphs must be analyzed as morphemes only in reference to a system of contrastive relativity for all of the morphemes, the classes of morphemes, and the language system within which they occur and which they in part constitute (§§6.7, 16).

We shall return to some of the procedural problems of morphemics in §22.

6.9 Bibliographical Comments on Chapter 6

There has been a great deal of work on morphemics in this country and elsewhere in the past decade, especially since the important article by Harris (1942) which went beyond Bloomfield (1926, 1933) by attempting to make articulate certain of the distributional parallels in the methodology of phonemic and morphemic analysis. Some other publications dealing directly or indirectly with morphemics include Trager (1944), Hall (1945), Harris (1945, 1946, 1951), Hockett (1947a), Bloch (1947), Voegelin (1947), Nida (1948b, 1949, 1951), Bazell (1948a, 1948b, 1949, 1952, 1953), Pike (1948, 1953), Bolinger (1948, 1950), Wells (1949), Hoenigswald (1950), Trager and Smith (1951), Wonderly (1952), Lounsbury (1953), Pickett (1953), Hjelmslev (1953), Pittman (1954), and various studies of the morphemics of individual languages in connection with a more comprehensive study of their grammars.

6.91 On Morpheme Definition

The first use of the term "morpheme" is attributed tentatively by Jespersen (1937, pp. 105-06) to Noreen. The term morph seems to have been introduced by Hockett (1947a, p. 322), supplementing the term "alternate" or "alternant" as used by Harris (1942) and Bloomfield (1933, p. 209).

I have not found in anthropological literature a term which parallels precisely the use here of "emic motif." The phrase "culture element" or "culture trait" seems to refer to such 'minimal definable elements of culture' as were compiled in 1928 by Kroeber (cf. Kroeber, 1936), but includes not only action elements of varying size, but also many objects or beliefs which are the products of culture or used by the culture; Gifford and Kroeber (1937), for example, include among such culture traits the following: a sea-otter fur blanket, a beard, dogflesh not eaten, person in moon, fear of twins, eagle dance, and swimming breast stroke. Similarly, the various terms in Opler (1948) do not correspond with the unit of behavior discussed in this chapter.

The terms "kinemorph" and "kinemorpheme" of Birdwhistell (1952, pp. 15-16, and addendum revising p. 22) seem to be applied to certain nonverbal motifs, in an attempt to parallel the terms morph and morpheme which are applied to verbal motifs.

For a discussion of some earlier uses of the term "morpheme", and problems in connection with them, see Jespersen (1937, pp. 106-08); compare Skalička (1936, on sèmes), Bloomfield (1926, p. 155), Projet (TCLP IV, 1931, p. 321). Even recent use in this country is not completely uniform--as when Harris speaks of 'morphemes of order' (1952, p. 18; and cf. 1951, p. 186 fn. 63, 184-85, 190 fn. 70, 211 fn. 28, 213 fn. 31); an opposite extreme, in limitation of the term, is the use of the Danish linguist Hjelmslev such that 'the term morphemes is restricted to use in the sense of inflexional elements, considered as elements of the content' (1953, p. 15 fn.)

One of the difficulties in handling morphemics in terms of a form-meaning correlation is the lack of a permanent unchanging core of meaning (cf. Bazell, 1948a, pp. 2-5, in contrast to Bloomfield's opposite working assumption, 1933, p. 162). This problem has led to the attempt to reach an essentially 'negative formulation' such that the meaning of morphemes 'sets them apart' from other forms; this avoids the necessity for assuming that the forms have an identical meaning, though it still allows for 'some semantic feature in common which remains constant in all their meanings' (an older formulation of Nida's, 1948b, p. 421 fn. 15, building on Bloomfield, 1933, p. 161; and cf. Martin, 1952, p. 11), or it allows a formulation in which the meaning of the morpheme is 'the total of the semes' in the various contexts in which the morpheme occurs (a revised formulation of Nida's), since in some instances 'There is practically no common denominator

[of meaning] left' in a series of uses of a morpheme (1951, p. 9). Compare, Bazell, who also attempts a negative formulation since he feels that the extremes of meaning of a morpheme do not always have a common core (1948a, pp. 2-4; and see his negative description as a 'systematic irrelevance of any distinctions of meaning' in 1949, pp. 4-5; cf Hjelmslev, 1936, p. 50). Any definition involving meaning of any kind is further complicated by the presence of meaningless 'empty words' (a phrase early attributed to the Chinese scholars--Müller, 1876 pp. 77-78; for modern treatment of the problem, see Bazell, 1948b, p. 286, 1949, p. 11; Hockett, 1947, pp. 331-33; Nida, 1948b, pp. 416-17; Wonderly, 1952, p. 155). We attempt to meet the problem, in the present volume, by leaving room for variants of meaning but more especially by defining the morpheme only in relation to a larger structure of which it is a part, the behavioreme, and to the feature mode of that larger unit (§6.1; cf. also §6.45); by doing so we hope to avoid the extreme of treating 'morphological systems' 'in essence' as 'systems of meanings' (de Groot, 1948, p. 440), as well as the extreme of 'the fundamental purely formal definition' in which 'a morpheme is an arrangement of phonemes' distributed within morphemes and utterances, etc., but in which one can only 'use meanings as hints' to help find morphemes, without the meaning as part of the basic definitions themselves (Hockett, 1949, p. 40; cf. Harris, 1951, p. 8 fn. 7, pp. 173, 189, 365 fn. 6; and the reply to Harris in Fowler, 1952, pp. 506-08; compare Trager and Smith, 1951, pp. 68, 54, 81). In such a formalistic approach, the analyst affirms that he separates homophonous morphemes not on the basis of meaning but on the basis of distributional criteria. These criteria include, among other items, the fact that 'It is therefore convenient to let the various morphemes of the language have identical distributions' in order to get a 'compact description' (Harris, 1951, pp. 199-200)--but this goal could not be obtained if too and two were treated as manifestations of a single morpheme, instead of two morphemes which were respectively members of different classes.

Before this item of Harris' appeared, Nida had rejected such a solution on the ground that it would necessitate 'repetitions of forms in listing' (1949, p. 57 fn. 52). He also rejected the solution that would make man, horse, fish as basically nouns (with verbs to be derived from them by zero) and swim, jump, run as verbs (with nouns to be derived from them by zero), on the ground that 'it is impossible to arrive at any valid basis for determining the basic class memberships of homophonous forms' (1949, p. 57 fn. 52). Instead, he concluded that he should assign 'fish, meaning an object, and fish, meaning a process, to the same morpheme' on the ground that 'these differences in meaning are paralleled by distributional differences' (1949, p. 57; cf. Principle 5, pp. 55-56). Others of his principles are also of interest here: His criterion that nonhomophonous items might be 'treated as submorphemic if the difference in meaning of the allomorphs reflects the distribution of these forms' was a principle which was set up to apply to instances where there was 'Contrast in identical environments'--i.e., in instances such as shown versus showed, in matters of style (1949, p. 42 item 4, illustrated on p. 43, item H--and very useful in that connection, as we shall see presently); the instance of fish versus fish is not illustrative of this principle, since the different meanings of these two homophones do not so contrast, and are not matters of style. We suggest that fish and fish might possibly have been subsumed under the principle that 'Occurrence in the same structural series has precedence over occurrence in different structural series in the determination of morphemic status' (1949, p. 42 item 1), and that this consideration would lead to treating fish and fish as two separate morphemes, members of two sharply different classes or series of morphemes, with widely different gramemic distributions. Note, for example, our conclusion regarding house (verb) and house (noun) in §6.53. Here, however, as elsewhere in the present theory, we may expect some indeterminacy, and instances in which any forcing of a decision one way or another would be arbitrary and not justified by the data; in such instances the indeterminacy would be either as to class membership (or memberships) of a specific morpheme (or morphemes), or as to the presence or absence of emic contrast between the classes of morphemes. A similar argument will later be useful in §8 in discussing the status of /h/ as a phoneme separate from /n/ in English, even though they are in complementary distribution. Note, also, Nida, p. 57, line 3.

For a very different treatment suggested for the handling of semantic variation in the morpheme, note Bolinger, who says that 'We need to trace associations rather then identities' (1950, p. 118), and 'In an ideally constituted lexicon, the elements of the word would relate it to more inclusive genera precisely and scientifical[l]y (connotation), and the word itself would refer to a species [of semantic component], or to a less inclusive genus [of semantic component], something at a higher level of specificity (denotation)' etc. (1950, p. 124). Note that this implies a generalized etics of meaning (cf. §§6.82, 6.94).

Failure to see that meanings can vary

non-emically within a morpheme has led to some conclusions different from those reached here. Note Bloch: 'According to our assumptions, if a verb that belongs to a given conjugation differs in meaning or connotation, however slightly, from a verb with a phonemically identical base that belongs to another type, the verbs are different morphemes: the shine whose preterit is shined is a different verb from the shine whose preterit is shone; and by the same argument the show whose participle is shown is a different verb from the show whose participle is showed' (1947, pp. 406-07); also: 'The form n't is best regarded as a separate morpheme, not as an alternant of the full form not. The two forms contrast, at least stylistically and in their connotations, in such phrases as I cannot go : I can't go' (1947, p. 406 fn. 14). It is to Nida that we are indebted for the first major suggestion towards the solution of this problem in terms of submorphemic variations in reference to the sociolinguistic environment (1948b, p. 432); he uses the same approach to avoid Bloch's conclusions that /hæv, hev, ev, v/ (i.e., variants of have) are distinct morphemes (Nida, 1948b, p. 432-33; and 1949, p. 42 item 4, and p. 43 item H, referred to above).

Problems of meaning affect the morpheme definition in several other ways. The presence of lexically-meaningless morphemes (§6.45) forces us to utilize a definition in which the morpheme is identified in relation to its position in the total structure in a behavioremic hierarchy, rather than to adopt a definition in which the morpheme is assumed to be a 'minimal meaningful unit' per se. Two solutions have been suggested to meet this problem, both of which attempt to eliminate some lexically-meaningless morphs from morphemic status. The first is by Hockett, who proposes that we recognize 'EMPTY MORPHS, which have no meaning and belong to no morpheme' (1947a, p. 333). This we have not adopted, since it would prevent the building of a theory in which the minimum units of the feature mode of the uttereme or hyperuttereme are morphemes; i.e., it would leave some units of the feature mode which would be other than morphemes and not easily correlated with them in the analysis (since these nonmorphemic morphs would be neither morphs which constitute manifested variants of morphemes, nor morphs which constitute a morphetic part of morphetically-complex morphemes). Cf., also, discussion by Lounsbury (1948, pp. 12-13).

The second attempt to avoid this difficulty is one made by Pittman, and focuses especially upon morphs which have grammatical significance but not a strong or easily-seen lexical meaning. Thus he says that 'Certain phonological sequences, however, which have usually been described as morphemes, might perhaps be more neatly described as "overt valences"' which 'may appear to be very similar to morphemes, or, indeed, they may be "carried" by specific morphemes. Possible examples of this might be the unit to in English infinitive expressions and the suffix -r in Spanish infinitives. The English auxiliary "do" in expressions such as I do not know is another likely example' (1954, p. 7). Perhaps the chief difficulty in the way of following Pittman's suggestion is that he gives neither theory nor methodology which would let one see what a morpheme is, or how it is to be defined, or related to his total theory of linguistics; as a consequence, it is impossible to determine which specific phoneme sequences in the language would constitute (a) morphemes but not valences, (b) valences but not morphemes, (c) valence-carrying morphemes (e.g., he gives no reason for treating conjunctions differently from to and do other than his saying that 'conjunctions, although identifiable as real, contrastive morphemes, may be said to "carry" valences' (1954, pp. 7-8). For our own attempt to work around these difficulties, note §6.45 (where lexically-meaningless morphemes are treated), §6.54 (where a morph may constitute part of a morphetically-complex morpheme), §§6.61-62 (where passive morphs are treated as parts of such complexes), and §§7.323-324 (where morphemes are considered in relation to their semantic modification by grammemic meaning and by morpheme-class meaning).

Fusion of morphemes brings in further problems of a semantic type, as well as of segmentation, in that it may be difficult to determine what parts of a complex should be considered as the manifestation of a particular meaningful unit. Such matters are delayed in discussion until §14; see also Lounsbury, 1953, p. 11.

Our insistence that lexically-meaningful morphemes--i.e., those morphemes which do have a discernible meaning--constitute form-meaning composites (§6.46, and cf. §§2.2, 5.64) serves as a convenient point at which to contrast this part of the theory with comparable sections of certain other approaches. Whereas on the one hand this theory forces us to reject de Groot's point of view that morphological systems are 'systems of meanings' (since our theory insists on the essential physical manifestation of a morpheme), on the other hand it leads us to reject what I take to be Bazell's point of view, when he states that 'it would be preferable not to introduce semantics on the morphemic level as a positive factor' (p. 59), and that 'the sememe like the morpheme is a distributional unit, and the reason for purging the one level

[presumably morphemes] of positive semantic criteria of differentiation...' (p. 59), and 'The linguist who has got it into his head that a morpheme is a meaningful unit, cannot possibly be supposed to understand semantic change' (p. 105). Cf. also Trager and Smith who seem to treat morphemes as 'formal units' without essential semantic relationship (1951, p. 68, where the term 'formal units' includes intonational affixes, and p. 55, where segmental morphemes are defined exclusively in reference to their phonemic and formal structure).

At the same time, the present theory forces the rejection of any theory which sets up emes of meaning--i.e., sememes (Bloomfield, 1933, p. 162; Nida, 1951; Bazell, 1953 p. 81)--which are other than units of functional or analytical conceptualized hypostasis (§6.43) and are on an entirely different plane of behavior from that of a nonhypostasized morpheme. This, in turn, carries with it a rejection of the dualism of Hjelmslev, which starts with a basic assumption of a functional dichotomy of expression and content (1953, pp. 30, 36-37) which, if pursued in emic terms, would presumably lead to emes of meaning which have no constantly-present physical manifestation but which are merely abstracted relationships.

The elimination of this dualism from a basic theory of nonhypostasic language is necessary, further, if one is to arrive at a unified theory of verbal and nonverbal behavior which includes items for which such a conceptually-hypostasized dichotomy could not easily be postulated. The retention of the dualism as a basic postulate would prevent the analysis, in a framework which could accommodate linguistic analysis, of any kind of human behavior in which such a dichotomy could not be seen; it would lead to a theory in which "signs," "symbols," and "semiotics," in general, were of a structural type too widely divorced from other types of human behavior to be easily included in a single structural approach with them.

Similarly, on the other hand, this theory rejects the approach of Hjelmslev to whatever extent he sets up any emic unit without permanent reference to the substance manifesting it, whether that unit be a distributional one, or one of content or of expression (cf. Hjelmselv 1953, p. 68, 'Substance is thus not a necessary presupposition for linguistic form'). The present theory would indicate that it is invalid to utilize "substance" or physical manifestation of units in order to arrive at those units but then to discard reference to such physical components as being irrelevant to the structure, as if they were a mere scaffolding for the erection of a theory, with the scaffolding to be discarded once the theory is attained. Our theory insists, rather, upon a return to the implications of Bloomfield's assertion (which he, himself, departed from in setting up sememes) that the fundamental assumption of linguistics is that 'In certain communities (speech-communities) some speech-utterances are alike as to form and meaning' (1933, p. 144; and cf. above, §5.64 and §2.73); cf., also, Bloomfield: 'In language, forms cannot be separated from their meanings' (1943, p. 102).

Just as the utilization of an outlook in terms of form-meaning composites avoids some problems in theory, so the utilization of reference to identificational-constrastive composite components (§6.46) also allows us to by-pass a difficult theoretical problem. If we were to assume that the meanings of morphemes were only contrastive, then they would have that meaning only when the items with which they were assumed to be in contrast could be found also in the same environment in different utterances; if, however, the meaning is also an identificational feature, then the meaning once identified in one environment may be recognized and treated as the same meaning in a different environment even if a less complete set of contrastive morphemes is permitted there. If a meaning is only contrastive, one might argue that cat is different from dog in an utterance The cat jumped over the ditch, but that its meaning cannot be differentiated from that of dog, nor identified as having anything to do with the cat mentioned in the first sentence, when it comes in the utterance The cat purred, since in this last one the word dog is not allowed to be present, and hence the word cat loses the main meaning it had when in contrast to dog. Note, for example, the argument of Bazell, who seems to take a different view: 'since meaning presupposes a choice, every syntactic limitation implies zero-meaning. In those positions in which a past but not a present morpheme is possible, the morpheme is voided of whatever semantic role it may have in other positions, if the opposition is binary' (1953, p. 11); and in many feet, vs. many hands 'the plural morpheme is necessarily voided of meaning' [i.e., because one cannot say many foot, etc.] (1953, p. 11). If one insists that components of the morpheme are simultaneously identificational and contrastive, this problem does not arise; cat means cat in both of the first two instances, and in the latter two instances the plurals both mean plural. Bazell's point of view represents, I think, one variety of analysis in terms of 'neutralization of oppositions' which is more often encountered in reference to phonological questions (cf. §8), and in both instances the identificational nature of emic units must be taken into account.

In reference to a trimodal approach to

morpheme definition, I am not acquainted with any attempt to describe the data in this fashion. Parsons, in reference to 'interactional orientation,' does suggest an analysis of social action by means of three modes: 'the cathectic, the cognitive, and the evaluative' (1951, pp. 12, and 7-14), but I find nothing in common between his approach and that developed here.

6.92 On Active Elements

Active elements enter into regular analogies. Hence another criterion for activeness is that 'The speaker can use a form in a regular function even when he has never heard the resultant form' (Bloomfield, 1933, pp. 274-75; cf. Harris, 1951, p. 255). This is in turn related to 'the statistically determinable readiness with which an element enters into new combinations' (Bolinger, 1948, p. 18; even with 'the appearance of only one in a lifetime,' p. 21; but cf. Bazell, 1949, pp. 8-9; and cf. new problems raised in Bolinger, 1950, p. 135, where new forms are created by phonetic analogies to which one would hesitate to assign morphemic status). For a large collection of new formations, see Mencken (1945, I, e.g., 350-72, 362, 399, 401, 406). For an earlier discussion of the problem see Jespersen who protests against treating the pre- of preparation as parallel to that of pre-suppose since only the latter kind 'deserve a place in English grammars: the other words belong to the dictionary'; whereas fixed phrases are 'formulas' (1924, pp. 43, 32). Similarly, Fries treats the ending of truth as 'not now a live or productive pattern and has only historical significance' (1945, p. 18 fn.; cf. Sapir, 1916, Selected Writings, 441), though he recognizes indeterminacy, since for some it is 'difficult to draw a line' (1940, p. 36). Problems in determining such elements are frequent: e.g., discussion in de Groot (1948, p. 463, regarding Latin), Bloomfield (1933, p. 275, for duchess), Martin (1952, p. 103, for Japanese, and tycoon/typhoon for English), Nida (1948b, pp. 425, 429, 431, general problems, and 1949, pp. 60-61), etc. Related problems in the treatment of items like was or is are found in Hockett (1947a, p. 343); Bloch (1947, pp. 416-17); Nida (1948b, p. 429); Harris (1951, p. 201 fn. 9). Note also Harris.: '...the {wh-} "interrogation" morpheme' [i.e., as in the first part of when] (1951, p. 210 fn. 23, 192-93). The fullest treatmenat which I have seen of the logical but unacceptable results of utilizing a theory of morpheme definition which implies the use of form-meaning correlations for morpheme identification without reference to active and passive structure occurs in Bolinger (1950), where a large number of passive items with semantic effect are discussed (see list, for example, pp. 119-20).

The uncertainty concerning compounds (§6.61) may imply that more than three degrees of activeness (active, passive, semi-active) are in force. There may, in fact, be a progressive gradation from highly active to completely inactive, with a number of stages in between. It would be necessary to qualify such a point of view with the restriction that at certain points in this graded series there seem to be sharper jumps than at others. For discussion of problems of this type, continuing up to the phrase level, and with several such jumps or types indicated, see Bolinger (1948).

For a considerable period of time I have felt an objection to Bloomfield's treatment of primary derivatives, primary affixes, and root-forming morphemes in words such as receive, hammer, and crash (1933, pp. 208, 240-46). I first formalized the solution to the problem in terms of morphetically-complex morphemes, however, in a paper entitled "Complex Morphemes" presented to the Linguistic Group of the University of Michigan, Apr. 11, 1949 (unpublished). This approach was developed as a result of combining an interest in "native reaction" (for which slush and receive appeared in some undefined way to be units) with a testing for parallels between phonetically-complex phonemes and morphological data. For a different approach to this problem, with receive analyzed as two morphemes in sequence plus a verbal 'long component,' see Harris, 1951, pp. 301-302, 161.

6.93 On Indeterminacy in Morphemic Analysis

Zipf has pointed out for nonverbal behavior 'the problem of establishing criteria of comparison to determine how similar two acts of behavior must be before they can be considered the same' and at the same time has implied that too rigorous a direct attempt to observe a person might indeed change his reactions, 'making self-conscious the person whose behavior was under consideration' (1935, p. 12). Both of these elements have already entered into our discussion (§§6.43, 6.44, 6.5). Bloomfield met the problem, in reference to semantic elements, by assuming for linguistic purposes that 'each sememe [meaning of a morpheme] is a constant and definite unit of meaning' (1933, p. 162), with 'some speech-utterances...alike as to form and meaning' (p. 144), but granted that this 'basic assumption' was 'true only within limits' (p. 145) since the 'linguist cannot define meanings' (p. 145) and this ultimately implies that for certain specific problems (e.g., root-forming morphemes such as the -ash of crash) the analysis 'is bound to be uncertain and incomplete' (p. 246), or indeterminate (cf. sloth, p. 145). Compare Nida, who states that for certain situations 'The decision

rests with the native speaker of the language' and that 'This subjectivism in the analysis of a language is completely legitimate, since it reflects the actual usage of the language by the native speaker and reveals the live associations ...' (1949, p. 57). More specific discussion of indeterminacy as such has recently appeared in Bazell (1952, pp. 34-36; 1953, p. 111, where he states that 'Indeterminacy is the price paid for discreteness'; and see also 1951, p. 116); de Groot has for some time been impressed with the frequent necessity to allow for borderline cases of all kinds (1948, e.g., pp. 480-81). For a discussion as to the limits (largely paradigmatic, or for inflectional morphemes) of "suppletion"--i.e., the situations in which two morphs of a morpheme may have nothing phonemically in common, see especially Martin (1952, p. 102); for earlier reference to suppletion, see Bloomfield (1926, p. 161); cf. discussion of criterion of phonetic similarity in Hockett, 1952, pp. 92-93; and for other dilemmas, 1950a, p. 83.

6.94 On Etic Classifications

Some brief etic summaries of phones, or morphs, or other etic elements, have appeared for various areas. Note, for example, Capell, for Oceania (1933), and for New Guinea (1940). For a more general listing see Nida (1949): semantic etics of inflectional morphs (pp. 166-69); semantic types of non-inflectional morphs (pp. 178-83); for small morph classes of various kinds (1949, pp. 107-48); groupings by structural shapes (pp. 62-77); and for larger morph classes (p. 149, and Fries, 1952); cf. also Kantor (1936, pp. 198-341), and Hoijer (in Symposium, 1954, pp. 9-10). Attempts at a semantic etics go back much farther. especially to Wilkins with subdivided criteria for the etics of meaning, and a symbolism for such (1668), who (so David Abercrombie informs me) was in turn indebted to Dalgarno (repr., 1834, of items 1661, 1680). Note, also, Roget's Thesaurus (1933, revised and Sweet's critic of an earlier edition (1875-76, in Selected Papers 1913, pp. 15-16, where a sample objection is that 'theft' comes under 'transfer of property'. Recent attempts at some phase of the etics of meaning occur in Sapir (1944, Selected Writings pp. 122-49; and 1930), Sapir and Swadesh (1932), and Bull and Farley (1949); the latter feel that 'the study of verbs and many phenomena associated with them should begin with an analysis of reality and the patterns and limitations which it dictates to man' (p. 65; but for a different point of view, cf. Hjelmslev, 1953, p. 49). Note also the implication of the need for a hierarchically-structured etics of meaning, but with no attempt to develop such materials, in Bolinger (1950, p. 124, quoted above--§6.91). Reifler discusses the general problem (1953, pp. 371-72), and indicates that the need for such classifications was suggested earlier by Vendryes; on the other hand, he illustrates the manner in which it may be difficult to decide whether two items should or should not be considered similar or 'compatible' in meaning (1953, p. 379); Paul, however, had long before insisted that 'There is no such thing as a perfect concord between the logical [etic] and the grammatical [emic] categories' (1889, p. 300), as a caution concerning attempts to utilize etic classifications as a basis for analyzing a language.

CHAPTER 7

THE MINIMUM UNIT OF THE DISTRIBUTION MODE OF THE BEHAVIOREME

In Chapter 5 we discussed the behavioreme, and its simultaneous structuring into three modes. In Chapter 6 we studied the minimum unit of one of the modes--the emic motif, the minimum unit of the feature mode--and observed (§§6.63, 6.7) that it had, among other characteristics, certain distributional relationships to motifemic classes occurring within functional spots. In Chapter 7 we shall discuss these latter characteristics in reference to the unitized structure of the distributional mode of the behavioreme.

7.1 Definition of Motifemic-Spot-Class-Correlative

Just as for the emic motif it proved convenient to have a simple definition followed by one which included explicitly some of the items implicit in the shorter definition, so it is useful here:

Condensed Definition: A MOTIFEMIC-SPOT-CLASS-CORRELATIVE is the minimum unit of the distribution mode of the behavioreme.

This definition emphasizes the fact that such a unit cannot be defined as something discoverable or describable in and of itself, but that it occurs only as a part of--and mutually definable with--a larger unit of behavior. The definition is useful, however, only when it is convertible into a series of operations which allow the analyst to discover these units. The expanded definition contains nothing which is not present by implication in the shorter one, but lends itself more readily to being used as a basis for building a methodology of analysis and description of these units:

Expanded Definition: A MOTIFEMIC-SPOT-CLASS-CORRELATIVE (or ROLE-EME) is a minimum, active, trimodally-structured emic segment or component of human activity within the pyramided hierarchy of the distribution mode of a minimum or included behavioreme or hyperbehavioreme; it is characterized by an emic spot correlated with a morpheme class (or with a composite class of morphemes plus morpheme sequences); it is manifested by free or conditioned, motifemically-simple or motifemically-complex, fused or clearly-segmented variants through the manifested variants of its manifesting emic motifs or classes of emic motifs, and it occurs within a trimodally- and hierarchically-structured system of motifemic-spot-class-correlatives and within a system of behavioremes, and hence within a structured physical matrix. Some motifemic-spot-class-correlatives have a recognizable structural meaning or structural purpose as one of their characteristics.

A verbal motifemic-spot-class-correlative is a GRAMEME; a verbal etic motif-spot-class-correlative is a GRAM.

Many of the elements in this expanded definition have been treated in earlier chapters. See, for example, the references following the definition in §6.1. Add to that list the following: emic motif, §6; motifemic class §§6.63, 6.7, 6.83; motifemic variants, §6.5, 6.84. Before discussing formally the further elements entering into this expanded definition we shall illustrate its general application to the breakfast materials.

7.2 The Motifemic-Spot-Class-Correlative Partially Illustrated within the Breakfast Unit

For a family-breakfast behavioreme we have already illustrated, in the discussion of its distribution mode (§5.2), the occurrence of spots within the structure of the pre-breakfast preparations. These spots include places for the official opening, for the various courses, and for the official closing. The kind of activity which fills these spots was also discussed.

Within this breakfast behavioreme, a motifemic-spot-class-correlative would be constituted by the unit 'breakfast-main-course.' Its spot-filling relation to the breakfast behavioreme which contains it indicates that the main course is a component of the internal structuring of the distribution mode of that behavioreme. This spot-filling characteristic, furthermore, is one of the principal elements which simultaneously characterizes, on a lower level of the hierarchy, the distribution mode of that motifemic-spot-class-correlative itself. Another of its distributional characteristics is its potential for occurring in other meals--say a party breakfast--as well.

The manifestation mode of this motifemic-spot-class-correlative would be seen in its variants--namely, either a cereal-eating motif

filling that spot, or a bacon-and-eggs-eating motif filling the same spot. Thus the manifestation of the 'breakfast-main-course' is by a class of emic motifs or, more specifically, by some one member of that class at any one time. The specific emic motif manifesting the motifemic-spot-class-correlative at one particular breakfast scene, furthermore, would in turn be manifested not by all the variants of that emic motif simultaneously, but by one specific variant of that one specific motifemic member of that motifemic class--that is, by the particular eating of a particular kind of cereal in that particular fashion on some one particular day at the family breakfast.

The feature mode of this motifemic-spot-class-correlative of 'breakfast-main-course' would in turn be characterized by all the elements identifying it and contrasting it with other units--especially (a) by the class membership actualizing it (which is identical with that manifesting the manifestation mode), and (b) by the added functional "meaning" component of 'spot for eating main course for sustenance.'

A series of verbal motifemic-spot-class-correlatives--i.e., grammemes--may be seen in the included uttereme B18/9.1; B--: I don't care but you ran off with mine. Here the word I is manifesting a grameme whose distribution mode includes (1) its occurrence as both (a) constituting and (b) filling the first spot in that manifested uttereme, (2) its potential for occurrence in other utteremes where it comes in a different physical place in the uttereme (as I manifests the same grameme, filling the "same" (i.e., emic) spot, with the "same" manifesting emic class in a "different" uttereme, in Why should I care?), and (3) the fact that its variants are "tied to" (i.e., correlated in distribution with) the manifested variants of emic classes manifesting certain other grammemes in the same uttereme (as I is "tied to" do in I don't care, but He is tied to does in He doesn't care).

This grameme is manifested by a member of the class which includes morphemically-simple members such as we, he, you, John, Bill, Jim, and morphemically-complex ones such as the dog, ten boys, all the men, etc. These items constitute part of the total manifestations of the manifestation mode of that grameme.

The feature mode of this same grameme--the first in I don't care--includes the structural meaning of 'actor-as-subject.' (This is not the same grameme as occurs at the beginning of I was hit by the ball, as we shall see later; i.e., not all "subjects" are members of the same grameme, though all such types do constitute a class of various different subject grammemes (cf. §§7.321, 7.43, 7). The feature mode would also include among its components all the potential internal markers of the class which can identify this grameme or contrast it with others. Thus the fact that big John can be an extended member of the manifesting class of that grameme is also one of the characteristics of its feature mode.

7.3 The Feature Mode of the Grameme

The feature mode of certain of the units in the breakfast scene has just been illustrated briefly, but we now wish to treat that mode in more detail in reference to certain technical problems which arise during its analysis.

7.31 Distribution Classes of Morphemes as Grammemic Components

One of the characteristic components of the feature mode of a grameme (a verbal motifemic-spot-class-correlative) is the particular distribution class which manifests it. These classes, by their presence, contribute to the grameme a number of important elements which need separate discussion.

7.311 Choice in Relation to Classes of Morphemes

The grameme, through the membership of its manifesting class, is very important to human behavior since, among other reasons, it is here that deliberate, conscious CHOICE (cf. §6.63) is frequently exercised as to alternative purposes or goals to be pursued or meanings to be suggested to others, although at other times the factor of choice does not reach the threshold of awareness. When an author is "hunting for the right word" the process of choice or selection becomes highly conscious; it can be made conscious, even if it was not so before, when a teacher asks Why did you use that word? Whenever alternative morphemes are being discussed culturally it is evidence that one is looking at a spot where a grameme is involved, while the particular alternatives which may be chosen are themselves the members of a DISTRIBUTION CLASS OF MORPHEMES (§6.63) which manifest--and hence in part constitute--that grameme.

Every morphemic alternative implies the presence of a grameme on some level of analysis, just as the exercise of these choices implies the utilization of some morpheme or hypermorpheme (§10) which manifests the grameme at that particular time and place. This should not be interpreted to mean, however, that such alternatives are always highly conscious since, on the contrary, when one speaks rapidly the attention is likely to be focused only on the higher layers of choices and purposes (e.g., in behavioremes, §4, and §5) with the internal elements representing a highly intricate unconscious selection of alternatives within the larger

patterns. Selection of items within the smaller layers is likely to become conscious when one's activities are disapproved by other persons in the culture, or when disputes arise, or when motives are challenged, or under new situations. When a new situation forces on one of the participants an unprecedented conscious choice, this very fact makes the total event into a different kind of behavioreme, however, from that involved when the participant is just following a routine which has been established by others (cf., on participant differences, §§3.32, 3.34, 4.1.10, 4.22).

Before leaving this topic one word of caution may be given: In discussing choice, we are not attempting to argue the metaphysical problem as to whether, on the one hand, a person has freedom of the will to choose to act in certain ways or whether, on the other hand, biological and cultural determinism rule out such choice other than as a name for a resultant of physiological and cultural forces. Rather in this theory we are discussing human behavior AS PEOPLE REACT TO IT, i.e., in reference to its emic structuring. In order to reach this goal, choice and purpose must be included in the theory, whether one is a mechanist or whether one believes--as I do--in some degree of free will, since many of our daily activities are structured relative to the working assumption that we do so have it; people in certain circumstances seem to talk, and to act nonverbally, as if they thought they had free will, purpose, and choice, and as if they thought other people had these characteristics, and this fact is an important part of the data which must somewhere be accommodated in any emic description of their behavior. In this theory, it is handled within the grameme (or in the hypergrameme), or within its nonverbal counterpart, the nonverbal motifemic-spot-class-correlative.

7.312 A Class of Morphemes as a Grammic Clue

Since a distribution class of morphemes is a component of the feature mode of the grameme, it is therefore one of the identifying-contrastive features of that grameme: once the grameme has been determined by various procedural steps, and once the class can be identified in terms of its internal characteristics, then in any specific utterance the naïve or analytical listener who hears and unconsciously or consciously identifies the presence of some member of that morphemic class, by the help of one or more characteristics of such a class, has a clue as to the presence of some one of the grammemes which may be manifested by members of that class. Once a listener is aware of the fact that English has an 'actor-as-subject' grameme, and that it is manifested by members of a class including Bill, and Jim, then when he hears the form ...Bill... he is alerted to the possibility that an actor-as-subject grameme may be present. Since, however, the morpheme may happen to be manifesting one of the other grammemes (say, 'object-of-an-action') which also are manifested by members of that same morphemic class, other identifying-contrastive features of the grameme must then be used to determine which of the grammemes is, in fact, being manifested at that moment by the morpheme Bill.

7.313 Etic Classes of Morphemes versus Emic Trimodally-Structured Classes of Morphemes

The emic classes of morphemes are trimodally structured, as are the morphemes themselves, and this structuring affects the analysis of the variants of the grammemes which they manifest (§7.4).

7.313(1) The Feature Mode of an Emic Class of Morphemes

Sometimes the feature mode of a class of morphemes includes, as one of its components, the class meaning of its membership; many classes of morphemes, however, lack such a detectable meaning. The CLASS MEANING is in part observable in terms of the statistical probability that any one member of the class will have a certain kind of lexical meaning, or some specific semantic component. That is, if the bulk of the words of a class have some kind of semantic component in common, this component may constitute the meaning for the class as a whole, in spite of the fact that there may be a number of members of that class which do not of themselves include that particular semantic component. The class meaning is determined in reference to the generalized semantic nature of the bulk of the elements comprising the class, and not in reference to a hundred percent of the members of that class. Thus the morpheme class containing items like house, dog, cat, stone has as a class meaning "an object" in spite of the fact that other items in the same distribution class do not have the meaning of "object" but signal some kind of process, as in the words a fire, a loss, or a thought.

This class meaning, furthermore, is not determined exclusively in reference to an a priori etic classification of its semantic components, but is in part determined in reference to the function which the class fills within grammemic spots of the language and of the nonlinguistic culture and the structural meanings of those spots (§§7.321, 7.324). Thus "an object" is not defined solely in reference to an etic scheme of physics (which might point out that a table, for example, is a composite of processes or motions of molecules, atoms, electrons, and so on, or that in terms of a period of time the table as

a whole is subject to decay and hence constitutes a process), but also has reference to the function of a word like table, as the people of that culture react to it. In this instance, a table would be treated by members of the culture as an object in the sense that the word table can fill grammemic spots as "actor" or as "recipient" of an action (e.g., in the table fell on my toe and hurt me), and this fact contributes to the class meaning of that class of morphemes of which table is a member.

Some emic classes of morphemes have no apparent class meaning; semantically, these classes are "empty" in a manner somewhat analogous to the way in which single morphemes can be empty of meaning (§6.45). Classes which are semantically empty are likely to be small and to be restricted to occurrence in one or a few grammemic spots which are lacking in any obvious structural meaning (§7.321); the membership of an empty class is also likely to be comprised of morphemes with semantic components which are very diverse, so that it is difficult to find a semantic component which serves as the "least common denominator" of the class. A class of suffixes which occurs in only one grammemic spot, which contains only a half dozen morphemes, and whose morpheme meanings are very diverse, would constitute such a class type.

Where a morpheme class has a strong class meaning, it may sometimes be detected--or tested--in ways beyond those implied thus far. If, for example, a word is borrowed from another language, and if the native speaker who first borrows that word knows immediately what morpheme class to place it in, and what grammemic spots to use it with, without help of clues other than the semantic ones in the word being borrowed, the probability is that the class to which he assigns it has a strong class meaning. On the other hand, if native speakers react with considerable surprise when it is pointed out to them that a word has a particular etic semantic character (as fire represents a process), the probability is that his surprise is caused by the clash of a class meaning with an etic component of a lexical meaning which it is modifying. The feature mode of a morpheme class may (or may not) contain any such strong class meaning as one component; other feature-mode components help to differentiate it from other classes.

In a composite morphemic distribution class which includes some morpheme sequences, as distinct from a distribution class comprised of single morphemes, there can be some markers of the class which are constituted of one or more special morphemes of such sequences--and this fact constitutes another component of the feature mode of such a class. Thus, a case suffix may identify a noun, for example, as distinct from a verb; or items such as the or a may identify a noun phrase as distinct from a verb phrase. In a composite class comprised of some single morphemes plus some morpheme sequences, the sequence members of the class could likewise be identified by some one morpheme of the sequence. Thus the occurrence of the in the boy serves to identify it as a noun phrase, as a morphemically-complex member of a class which also includes single-morpheme items such as Bill; similarly -ize in verbalize helps to identify that word as part of a morphemic class which also contains the word run.

When a member of an emic morpheme class is comprised of a sequence of two morphemes, it is a MORPHEMICALLY-COMPLEX member of that class. John and Bill are morphemically-simple members of a class which contains the morphemically-complex members the boy, a man, and Johnny, each of which is comprised of two morphemes. Morphemically-complex members must be distinguished, however, from MORPHETICALLY-COMPLEX (BUT MORPHEMICALLY-SIMPLE) members of a morpheme class. If, for example, one concludes that hamlet is a single morphetically-complex morpheme (cf. §6.54) with one passive and one semi-active morph, it is a morphemically-simple member of the class which contains town; a subclass which is comprised exclusively of morphetically-complex but single morphemes would in turn constitute a morphemically-simple but morphetically-complex class. A morphemic subclass which is entirely comprised of morphemically-complex members, however, would itself constitute a morphemically-complex class. Likewise, one may find a PASSIVE MORPH CLASS which is comprised exclusively of passive morphs (§6.61) in a certain grametic spot within a subclass of morphetically-complex morphemes. Classes of morphs are active or passive in a reciprocal relationship with the activeness or passiveness of their membership; a decision as to the activeness of a class of morphs automatically forces the same decision concerning its membership, and vice versa.

The principal component of the feature mode of an emic class of morphemes, however, is probably best considered to be comprised of its TOTAL MEMBERSHIP rather than the morphetic or morphemic characteristics of its individual members. One class may be comprised of members such as boy, twig, scissors, and another of items such as brown, tall, ugly. The membership of a class is an identifying-contrastive characteristic of that class. It is important to notice that the knowledge of the total membership of a class is one fact which enables the analyst to recognize the presence of a morphemic class through any one specific morphemic manifestation of that class, once the membership of class has been determined by prior study. Such membership, however, cannot constitute a clue for the analyst in his search for the classes in the first place; the class and some or all of

its membership must first be discovered with the aid of clues which come from the distribution mode, as we shall see presently (§7.313(2)). Membership in a class of morphemes serves most usefully as a differential clue to the identification of the particular class being manifested at a particular moment, when the two classes under attention are MUTUALLY EXCLUSIVE IN MEMBERSHIP so that no morpheme is a member of both of those emic classes. Two classes of morphemes are comprised of mutually-exclusive memberships if the members of these classes are in turn mutually exclusive as to the gramemic spots which they occupy (§7.313(2)).

Class membership of a morphemic class may be limited, or CLOSED, such that no new members are known to have been added in recent times, and such that the analyst observes that a native speaker in borrowing words from another language adds them to other classes, but not to a closed one. As an instance of a closed class, note one of the groups of "function words" in Fries, 1952, e.g., Group G, comprised exclusively of do, does, did, as in the sentence Do the boys correct their work promptly?

An OPEN class is one to which new items are known to have been added in recent times, and one to which the linguist may by chance observe a native speaker add new words by borrowing or by direct invention--e.g., the linguist may be able to watch a scientist at work developing the terminology in some field, or may be able to observe a native speaker of a primitive technology borrow into open classes words for new gadgets which the linguist brings to the area. As an instance of an open class, note that class to which the following words have been added: radio, television, meson.

Closely related to the closed and open membership of a class may be its size. A class is SMALL which has only a few members--say three to thirty; but a class is LARGE which has many--say two hundred or more. Small classes are likely to be closed in membership; open classes are likely to be large ones. Small classes often are constituted of special grammatical elements, such as case, or tense, or connectives (cf. §6.82(f)). Occasionally a morphemic class is found which contains only one member, but which must nevertheless be treated as a bona fide total morphemic class since it is the only morpheme occurring in a particular gramemic spot, and as constituting one part of a spot-class-correlative. Such a morpheme may be called a UNIQUE member of a morphemic class. Note Group H, comprised of the one morpheme there, in Fries, 1952 (p. 97).

7.313(2) The Distribution Mode of an Emic Morpheme Class

The principal differential element of two morphemic classes of a type which contain no morpheme sequences (i.e., which are not composite morphemic-and-morphemic-sequence classes) consists of differences in their respective distribution modes. This characteristic is more important, in such instances, than the phonemic shape (§7.313(1)) of its member morphemes, or its class meaning (§7.313(1)).

It is this distributional characteristic which above all others allows the investigator to discover a morphemic class in the first place, and to know that such classes are relevant to the language in question, whereas an attempt to make class meaning a basic starting criterion for determining the classes is fatal to any structural analysis. (Similarly, no criterion constituted of the presence of sequence markers should be allowed to usurp the basic place of the distributional criterion for determining the presence of and membership in a morphemic class. This last warning may be unnecessary if one notes carefully that we are dealing at the moment with single-morpheme classes, in which no marker--neither particle nor affix--can be found; but an early statement of this fact may prevent a misinterpretation of the problem at the present stage of the discussion.)

The distribution mode of a morphemic class would include its occurrence or potential for occurrence in one or more emic spots. Two etic classes which are mutually exclusive as to the emic spots in which they occur are thereby known to constitute two different emic classes. It is by this provision that the classes containing respectively Bill and sing are considered emically different. Etic classes with different distributions in their respective emic spots are themselves emically different, and this distributional difference is the crucial element in the distribution mode of such simple morphemic classes. In this connection, it may be noted, further, that in §7.313(1) it was the total mutually-exclusive membership of a class that was treated as part of the feature mode of that class (§7.313(1)), whereas here it is the mutually-exclusive distribution of that total membership which is analyzed as a component of the distribution mode of the class.

In §6.64 we indicated that the PHONEMIC SHAPE TYPE of a morpheme constituted one component of the distribution mode of that morpheme in reference to its internal structure. Similarly, in terms of a distribution class of morphemes, any characteristic shape type which is present for each morpheme of that class is in

turn a component of the distribution mode of that class. If, for example, all stems of a certain language are of the phonemic shape CVC or larger, whereas some (but not all) affixes are of phonemic shape V, or of shape C, then the shape-type CVC (or larger) is one component of the distribution mode of each morphemic class of stems, and the option of having shape-type V or C is a characteristic shared by some manifesting members of each morphemic class of affixes. In Tzeltal (a Mayan language of Mexico), for example, all noun stems and all verb stems begin with CV, and some of them end with one, or two, or three consonants; numerous affixes, however, are comprised of VC, or even simply of C (Slocum, 1948, pp. 77-86).

Another component of the distribution mode of some classes of morphemes or of subclasses of morphemes--in fact a component which is frequently the element which separates a class into two or more subclasses--is the POTENTIAL FOR CORRELATION OF A MEMBER OF ONE CLASS OR SUBCLASS WITH A MEMBER OF ANOTHER CLASS OR SUBCLASS, such that both have the same referent, either within the same utterance or within different utterances of an including hyperutterance. Thus John, Bill, the man, etc., may optionally be included in the following sentence, substituting for Bill in correlation with who and he: Yesterday I saw Bill, who had come from the grocers, just as he was crossing the street. Or the following: Query: Did you see John yesterday? Reply: Yes, I saw him crossing the street. Note also John, the man, him, and secretary, in John is the man I mean; they made him secretary.

A somewhat different distributional component of the distribution mode of a morpheme class is its OCCURRENCE IN A SYSTEM OF MORPHEME CLASSES and, in this connection, in a HIERARCHY OF CLASSES or of subclasses within classes. Characteristics of these systems will be treated briefly in §7.313(4), and again in §16.

In §6.65 we argued that it was useful, and emically valid, to assume that when a listener was hearing an allomorph, that he was hearing the morpheme--that when an allomorph occurred, the morpheme could be viewed as occurring. It does not seem to me similarly valid and useful, however, to apply the same conclusions to a multiple-member class of morphemes and its variants. The difference lies in the fact that in between the manifesting morpheme and a total morphemic multiple-member class is an etic multiple-member variant of that class, an alloclass (§7.313(3)).* For this reason, a person who has just heard a morpheme spoken has not heard a total allo-class; it is necessary for him to have heard at least two morphemes in that same gramemic spot before he can react to the multiple-member nature of such a class. Even if he hears a particular sentence repeated a number of times, but with one word deleted at a certain point each time, with a different member of the same morpheme class replacing it, he has never heard the morpheme class uttered all at one time--but only members of the class at different intervals. If he tries to hear a morphemic alloclass, as such, by having a list of items repeated in isolation one after another, this too fails to meet emic conditions, since this abstracting of the class is a kind of hypostasis which leads to a morphemic class quite different from the one he was trying to hear (inasmuch as one of the components of the class he wanted to hear is its distribution in nonhypostasic circumstances, whereas his hearing it in isolation is a hypostasis which destroys those conditions). A morpheme, from this point of view, seems to be an "event," whereas a class of morphemes is not an event. Any one total variant of a morpheme may occur at one time in such an event; but the total variant of a multiple-member class of morphemes cannot all occur at one time as an event. A class unit is in this respect a step further removed from behavior as such than is the morpheme unit.

A class of morphemes, then, cannot be said to "occur" in the same sense that a morpheme does. In order to indicate this difference in our discussion, we will say that a morpheme both occurs and is manifested when an allomorph of it occurs, but will speak of an emic class of morphemes as being manifested by the occurrence of one of its morphemes, without saying that the class itself has occurred.

This problem is the source of one of the reasons why a grameme seems, at first glance, so much less concrete than a morpheme. Since an emic class of morphemes is one of the components of the feature mode of a grameme, the grameme carries with it some of the difference between a manifested morpheme and a manifested class which is manifested by that morpheme. Nevertheless, the grameme is treated as an objective emic unit occurring within normal participant behavior--not a mere conceptual construct of the linguist (but cf. gramemic spot, §7.321)--because of its function and structural relation to the uttereme; it is assumed always to have a physical basis in terms of its manifested variants, and no grameme is postulated as being present in an utterance unless such a manifestation is present.

We shall return to this problem again in §7.55, insofar as it concerns gramemes as wholes, rather than their manifesting classes of

*A single-member "class" (§7.313(1)) is not under consideration here; such a class would present a border-line case in this instance even as it leads to indeterminacies in other directions (§7.324).

morphemes (and cf. §§7.313(4), 16). Meanwhile, the discussion has proceeded far enough to allow us to indicate that it is this difference between a morpheme and an emic class of morphemes--and between comparable elements in the structure of phonemes and grammemes--which has led us to treat morphemes, grammemes, and phonemes as more elemental within the theory of the structure of behavior than are the emic classes of morphemes, the classes of grammemes, or the classes of phonemes.

It should also be pointed out here that on the basis of this decision as to the nature of the structure of human behavior it is by no means helpful to define a morpheme as "a class of allomorphs" or to define a phoneme as "a class of allophones." The two uses of the word "class" reflect groupings which are structurally so different that such a terminology is confusing. This difficulty is increased when we find it necessary for descriptive purposes to identify and name certain classes of allomorphs in which each allomorph in the class comes from a different morpheme (§7.313(3)). Hence we avoid the use of the term "class" as applied to a group of sub-emic allo-units of a single morpheme or phoneme. To ignore the distinction (although, of course, it could be handled by a very different terminological device) is to ignore an important structural threshold within the emic activity of man.

7.313(3) The Manifestation Mode of an Emic Class of Morphemes

The manifestation mode of a morpheme class is comprised of the sum of the nonsimultaneous variants of that class. These variants may be optional ones, or conditioned by the immediate environment whether (a) phonemic or (b) morphemic, or may be conditioned (c) by the particular grammemic spot and (d) by the congruent system in which they are occurring (§§6.5, 6.7).

Two morphemic classes may be etically different classes but emically the same class, for example, if they occur in different grametic or grammemic spots (§7.321) but contain the same morphemes as members. It is convenient, however, to call two such etic classes the SAME VARIANT OF A MORPHEMIC CLASS, or 'two instances of the same etic class of morphemes', just as repetitions of a morpheme are the 'same variant' (§6.51) of that morpheme if the emic sounds are the same at each repetition.

A morpheme class has FREELY-VARIANT MANIFESTATIONS of that class whenever, in the same grammemic spot, one member of the class is substituted for (cf. §7.321) or replaced by another morpheme which is a member of that class. The replacement of John by Bill in John came and Bill came is an instance of this freely variant manifestation of a class of morphemes.

Three types of LOCALLY-CONDITIONED VARIANTS (CONDITIONED ALLOCLASSES) OF EMIC CLASSES OF MORPHEMES may be distinguished, in accordance with the kind of modification which is produced in the class by the environment: (1) In the first of these, the membership is reduced or increased so that the number of morphemes in the class is changed. (2) In the second, the phonemic content of the manifesting morphemes is affected. (3) In the third, the meaning of one or more of the manifesting morphemes is modified. The conditioning elements may be phonemic, or morphemic, or grammemic, or systemic.

The first kind of locally-conditioned etic variant of a class of morphemes occurs whenever two etic classes of morphemes, which are members of the same emic class of morphemes, differ as to the presence or absence of one or more morphemes, provided that this difference is caused by its position in relation to a contiguous or noncontiguous emic class or subclass of morphemes in the same uttereme. In English such an instance may be seen in the composite morpheme-hypermorpheme class which includes, for example, the members John, the boy, and the boys in the grammemic spot after I saw in the sentences I saw John, I saw the boy, and I saw the boys. Of these three sample members, however, only John and the boy can manifest that class in the grammemic spot before is in John is here; and of these three only the boys can manifest that class in the same grammemic spot in the utterance the boys are here. The partial lists of members of the larger total composite morpheme-hypermorpheme class which may occur in these respective limiting grammemic spots constitute etic subclasses of morphemes or hypermorphemes, and these subclasses in turn constitute GRAMEMICALLY-CONDITIONED LEXICAL VARIANTS OF THAT COMPOSITE EMIC CLASS OF MORPHEMES AND HYPERMORPHEMES. Just as will in the form wo- conditions not to n't in won't, and vice versa, on a submorphemic plane, so the etic singular subclass of the emic class which contains John, the boy, and the boys reciprocally conditions the occurrence of the singular subclass of the emic class which contains both is and are. The conditioning factor, here, is the manifesting morpheme (i.e., is) of the subclass (i.e., singular) of the emic morpheme-hypermorpheme class (including live, lives, come, comes, etc.) which may occur within the emic spot following it.

Note, also, the conditioning of occurrence of members of a subclass by grammemic arrangements of correlated forms such as John and him in John came home yesterday and I saw him there (cf. §7.313(2)).

When the conditioning factor affecting the

membership of the etic variant of an emic class of morphemes consists of a neighboring morpheme or morphemes, a MORPHEMICALLY-CONDITIONED (OR LEXICALLY-CONDITIONED) LEXICAL VARIANT OF AN EMIC CLASS OF MORPHEMES is obtained. In the grametic spot filled by work in the phrase to make quick work of, the manifesting etic class of that gram potentially includes items such as time, but does not include shrift. In the phrase to make short work of the word work is a member of the same emic class as seen manifested by work in the preceding sentence, but the etic class is different, since it may now include shrift as one of its members, since one hears the phrase to make short shrift of.

In certain types of verse, a PHONEMICALLY-CONDITIONED LEXICAL VARIANT OF AN EMIC CLASS OF MORPHEMES is seen, in that at certain points in a stanza the only appropriate (cf. §§3.42, 1.3) words which may fill a certain grametic spot will be items which rime. This riming limitation constitutes a phonological subclass of the larger class of items which might otherwise fill that spot.

The conditioned variation of morpheme classes thus far illustrated has involved the presence or absence of complete morphemes. In the next type, however, it involves submorphemic phonological variants of morphemes and hence of their manifesting classes. These kinds of variants have already been discussed from the point of view of morphemes (§6.53). A further word about them is needed here to show their relation to etic distribution classes of morphemes (and cf. §6.7). When a type of conditioning of morphemes is phonologically regular (§6.53) and widespread so that it affects the phonemic content of a number of morphemes of a particular emic class of morphemes, it produces in the emic morpheme class a locally-conditioned etic variant which may be called a PHONEMICALLY-CONDITIONED PHONOLOGICAL VARIANT OF THAT EMIC CLASS OF MORPHEMES. Such a class variant is an ALLOMORPH CLASS which might be constituted, for example, of the variants of the members of a class of morphemes, in which each variant has been modified by the palatalization of its final consonant under the influence of a following morpheme which begins with a palatal sound.

When, however, the change of phonemic content of the variants of one or more morphemes of a morpheme class cannot be traced to the regular phonological influence of an adjacent morpheme or morphemes, but the change is irregular and phonologically unpredictable, the locally-conditioned allomorph class in such a situation constitutes a MORPHEMICALLY-CONDITIONED PHONOLOGICAL VARIANT OF THAT EMIC CLASS OF MORPHEMES. The wo- (of won't), and the sha- of shan't thus constitute some of the members of an allomorph class of that morpheme class which contains shall, will, can, etc.; and this morphemically-conditioned class variant is comprised of that group of morpheme variants arbitrarily modified and abbreviated in phonemic content under the influence of the morpheme not which follows them in a context such as I can't go today.

Similarly, there may occur a GRAMEMICALLY-CONDITIONED PHONOLOGICAL VARIANT OF THE MORPHEME CLASS which it manifests. This type would be constituted of an etic class variant which contained among its manifesting members some allomorphs which were phonologically conditioned by their occurrence in a particular gramemic spot. Thus he and him would belong respectively to different gramemically-conditioned allomorph classes (cf. §6.53) of the same morpheme class.

The third type of locally-conditioned variant of an emic morpheme class is one in which the local environment affects (a) the meaning of some of the morphemes manifested within it, or (b) the meaning of the class as a whole. When it is the gramemic spot in which the morpheme class is occurring that affects the meaning of the morpheme or of the morpheme class, a GRAMEMICALLY-CONDITIONED SEMANTIC VARIANT OF THAT EMIC CLASS OF MORPHEMES is produced. The effect of the meaning of a gramemic spot upon the meaning of individual morphemes will be discussed in §7.323 (i.e., terribly in terribly pretty; and cf. §6.53); the effect upon the analysis of the meaning of a morpheme class will be treated in §7.324. A MORPHEMICALLY-CONDITIONED (or LEXICALLY-CONDITIONED) SEMANTIC VARIANT OF AN EMIC MORPHEME CLASS would be an etic class of morphemes which had one or more of its members modified in meaning because of its occurrence in the same context with another morpheme or class of morphemes (cf. drive in drive a horse, versus in drive a car, §6.53; in that section it was the individual morpheme which was under attention whereas here it is the class of morphemes which contains drive, etc., which is under attention). A PHONEMICALLY-CONDITIONED SEMANTIC VARIANT OF AN EMIC CLASS OF MORPHEMES, paralleling morphemically- and gramemically-conditioned types, occurs when the phonemes of neighboring morphemes force a submorphemic but semantic change in the morpheme or morpheme class under attention. The heightened semantic impact of some words in verse is presumably to be handled as a modification of their less colorful meanings, as a conditioned result of the patterned phonemic content of some part of that verse (cf. the verse quoted in §6.45).

An ETICALLY-COMPLEX VARIANT OF AN EMIC MORPHEME CLASS (analogous to a morpheme containing two morphs in sequence, §6.54) occurs as a hypermorphemic subclass within a

composite morphemic-hypermorphemic class, manifesting that larger class under certain conditions. In a distribution class which contains, among other items, John, Bill, the boy, and a dog, the items the boy and a dog are members of such a morphemically-complex subclass within the larger composite class. In certain grametic spots the occurrence of this morphemically-complex subclass is freely variant with the morphemically-simple subclass, since either of them may be found in such sentences as John came home and the boy came home. Under other circumstances--in different grametic spots--the occurrence of the morphemically-complex subclass may be conditioned. In the grametic spot filled by boys in Boys like to run fast, for example, only a morphemically-complex subclass occurs, conditioned by that grametic spot in its relation to the plural form of the morpheme like which is manifesting the next grametic spot; in the grametic spot filled by John in John likes to run fast, however, that subclass does not occur, whereas the simple subclass which includes John does occur, and the morphemically-complex subclass containing that boy may also occur, since these two latter subclasses are in free variation with each other in their occurrence in this grametic spot.

FUSED VARIANTS OF EMIC CLASSES OF MORPHEMES also occur, but discussion of them will be postponed until §14 (and cf. §6.55).

There may occur SYSTEMICALLY-CONDITIONED BUT LOCALLY-FREE (cf. §6.56) VARIANTS of an emic class, analogous to the three types of locally-conditioned variants of emic classes already discussed.

A SYSTEMICALLY-CONDITIONED (BUT LOCALLY-FREE) PHONOLOGICAL VARIANT OF AN EMIC CLASS OF MORPHEMES would be constituted of a distribution class of allomorphs which includes one or more allomorphs whose phonological character is modified because of the style which the speaker is using (§6.56, where not occurs in certain formal styles at points where n't would be inappropriate).

Also, a SYSTEMICALLY-CONDITIONED (BUT LOCALLY-FREE) SEMANTIC VARIANT OF AN EMIC CLASS OF MORPHEMES would be constituted of any allomorph class among whose allomorphs are some which have semantic variation conditioned by the style or physical matrix in which they are occurring (cf. §6.56, with the illustration He is a queer bird; cf. also §7.313(4)).

A SYSTEMICALLY-CONDITIONED LEXICAL VARIANT OF AN EMIC CLASS OF MORPHEMES is seen when certain morphemes of a class occur during the utilization of one congruent system (or style) of a language, but are omitted during the utilization of a different congruent system. To the class containing you, he, we, etc., in ordinary speech is frequently added Thou, for example, in the congruent system of prayer (§6.7). In the same congruent system, -est (verbal suffix, second person singular) is added to the class containing -s (verbal suffix, third person singular). An emic class of morphemes which is comprised of the combination of two classes of morphemes from two (or more) respective congruent systems constitutes a HYPERCONGRUENT CLASS OF MORPHEMES: within such a hypercongruent emic class of morphemes, an etic subclass which is limited in part to one of the congruent systems is a conditioned variant of that hypercongruent class. Similarly, formal versus informal congruent systems of speech may contain different variants of a particular morphemic class. In English, for example, many polysyllabic nouns would certainly enter a variant of composite morphemic-hypermorphemic noun class which is used in very formal style, which would not be likely to constitute part of an etic variant of the same emic class which occurs in informal speech. That is, the use of too many "big words" in informal speech would appear inappropriate--and inappropriateness is evidence of the use of items outside their accepted class (§3.42) or system.

7.313(4) Systems of Morpheme Classes

It is likely, furthermore, that a congruent system (§§6.7, 6.56, 5.4) which contains a special etic subclass of one morphemic type will contain several such subclasses for other morpheme classes. In such an instance, the sum of the morphemes and morpheme sequences in the subclasses of all the variant morphemic classes for that particular STYLE-CONGRUENT SYSTEM constitute a SYSTEMICALLY-CONDITIONED LEXICAL SET (i.e., CLASS OF COMPATIBLE CLASSES) OF MORPHEMES. It is appropriate to that particular style to use any member of the lexical set in any relevant emic spot in that congruent system: formal-style verbs may be used in formal-style spots where verbs occur, while formal-style nouns may occur in their permitted spots, and so on, so that a text constitutes a uniform document insofar as permitted lexical-style types are concerned. When, however, a particular morpheme or morpheme sequence is a member of two such lexical sets, it may occur in speech in both styles.

Occasionally words are excluded from certain contexts, not because a style-congruent system rules them out, but because a MATRIX-CONGRUENT SYSTEM makes them inappropriate. These are the situations in which it does not "make sense" to put certain morphemes together, even though the grammatical conditions and style do not prevent their juxtaposition or use in the same context in that manner: these are MATRIX-CONDITIONED (SEMANTICALLY-CONDITIONED) LEXICAL SETS. The fact that it "makes sense" in a fairy tale to say that The fox ate up the moon, but that it would not be appropriate in normal contexts, is due to such matrix conditioning.

In a number of instances (§§7.313(2), 7.313(3), 6.83(c)) we have had occasion to refer to subclasses within larger classes. This implies the presence of a HIERARCHICALLY-STRUCTURED SYSTEM OF CLASSES within any one single congruent system of the language under attention. Specific consideration of this hierarchical structuring, however, will be postponed until §16.

A system of morphemic classes is not an event. It is rather a class of classes, and its variants are therefore classes. Just as the classes are one step removed from events (cf. §7.313(2)), so a system of two or more emic classes is one step further removed from such events. A system of classes of morphemes is not itself an event, and hence it is not convenient to state that it "occurs" when an utterance occurs; rather the system of classes of morphemes, like its classes, in this theory is said to be manifested in utterances but not to occur in them. (For a system of behavior as a product of behavior, see §16.)

Since in one of its aspects a language may be viewed, however incompletely, as in part a system of classes of morphemes (§6.7), it is highly instructive to keep in mind an abbreviated and over-simplified schematic set of etic possibilities or "models" of the manner in which different such systems may contribute to the structure of different kinds of languages.

In Schematic Class-Type A we will assume that the language contains only one emic distribution class of morphemes. All elements other than those signalled by the individual lexical items must be signalled by the emic spots in which they occur (§7.32); subordination, modification, "an action" versus "to aet," etc., must all be signalled exclusively by the relative physical order of the elements. Every morpheme must be able to occur in every spot that any other morpheme may occur. If one tries to build a language artificially to meet these requirements, one starts satisfactorily, but cannot continue very far, since there are not enough kinds of signals available to handle the many kinds of relationships which develop in any culture. Nevertheless, the exercise is very useful, in showing basic language characteristics. Note, for example, the following sentences from an artificial "language." In them there is just one emic distribution class of morphemes comprised of los, which means 'having some reference to one or more characteristics of smoke', mif 'having some reference to one or more characteristics of a ball', and kap 'having some reference to one or more characteristics of an eye or eyes'. The specific differences in the meaning of these items, such as 'it is smoke', 'smoking condition', 'smoke as a subject of discussion', 'smoke-like activity (of the eyes)', 'smoke-like character (of the eyes)', constitute gramemically-conditioned semantic variants (§§7.323, 6.53, 7.313(3)) of the morpheme los, etc. The different functions of these items are characteristics of the gramemic spots in which they occur (§§3.4, 3.51, but especially 7.321 below; for symbolization of the gramemic structure of this problem, see §7.74).

SCHEMATIC CLASS-TYPE A (Artificial Language Material* with Only One Emic Distribution Class of Morphemes):

1. los 'It is smoke'
2. mif 'It is a ball'
3. kap 'They are eyes'
4. losmif 'The ball is smoking'
5. miflos 'The smoke is rolling'
6. mifmif 'The ball is rolling'
7. mifmiflos 'The smoke is rolling in round puffs'
8. mifmifkap 'He is rolling his eyes around' or 'The eyes are rolling around'
9. losmifkap 'His eyes roam darkly'
10. mifkaplos 'The smoke is trying to escape' or 'The smoke looks around'
11. kapmifmif 'I can see the ball rolling' or 'The rolling ball is visible'
12. mifkapkap 'He is looking around' or 'The eyes are looking around'
13. losloskap 'His eyes are smoldering menacingly'

Also, with no translation provided:

14. kapmiflos .....
15. kapkapkap .....

For building Schematic Class-Type B we will assume that the language--a different language from that illustrated by Schematic Class-Type A --contains two or more emic distribution classes of morphemes. These classes are mutually exclusive as to the gramemic spots which they may fill; any gramemic spot which may be filled by a member of one of the classes cannot be filled by any member of any other of the classes; but any gramemic spot which may be filled by one member of a class can be filled by any other member of that same class, in principle, though there may be gaps in observation such that some apparently "possible" sentences do not happen to occur in the recorded data. Each class contains a number of morphemes with easily detected, fairly objective meanings, even though a few of the meanings may be much less so than others. In this language, the gramemic spot and its physical order (relative to other emic spots with their functions, not relative absolutely to the beginning of the sentence) continue to be an

*The data for illustrating Class-Types A, A′, B, B′, and C were prepared to these specifications by Evelyn G. Pike.

important signal beyond that of the lexical item itself but, in addition, the class as such is also a signal, since once the linguist has finished his spot-class analysis of the language, the recognition of a particular morpheme as belonging to a particular class signals the fact that the grammemic spot which it is filling must be one of a limited number of grammemic spots which may be filled by such a morpheme. This added provision makes for much greater flexibility for Type B than for Type A; a much more extensive artificial language can be built to this model than to Type A. Note the following brief sample: one emic distribution class of morphemes in this artificial "language" is comprised of som 'boy', fik 'donkey', mul 'cow'; the other emic distribution class of morphemes is comprised of lok 'having reference to noise', and mis 'having reference to stopping', with semantic change from 'speak' to 'mooed' and to 'bray' constituting a morphemically-conditioned semantic variant of the morpheme lok (§§6.53, 7.313(3)), with the semantic change from 'mooed', etc., to 'did this loudly' constituting a grammemically-conditioned semantic variant of the same morpheme (§§7.323, 6.53, 7.313(3)), etc. The different functions of these items are characteristics of the grammemic spots in which they occur (§§3.4, 3.51, but especially 7.321 below; for a grammemic analysis of this data, see §7.74). Note that the place of a grammemic spot is not to be counted mechanically, say from left to right, but in reference to its total function in which a morpheme sequence can serve as a morphemically-complex member of a class of items which fills a higher-layered spot. Thus in sommislok 'The boy spoke haltingly', below, note that mis is not in the same grammemic spot in which it occurs in the sentence sommis 'The boy stopped', but rather joins with lok to make a hypermorphemic sequence mislok which fills the same spot as occupied by, mis, alone in sommis (cf. morphemically-complex submembers of a distribution class of morphemes, §7.313(3), and of a grammeme manifestation, §7.44).

SCHEMATIC CLASS-TYPE B (Artificial Language Material with Two or More Major Emic Distribution Classes of Morphemes):

1.	somlok	'The boy spoke'
2.	sommis	'The boy stopped'
3.	fiklok	'The donkey brayed'
4.	mulmis	'The cow stopped'
5.	sommislok	'The boy spoke haltingly'
6.	fikmismis	'The donkey kept balking'
7.	mulloklok	'The cow mooed loudly'
8.	fiklokmis	'You could hear the donkey stop'

Also, with no translation provided:

9.	somloklok	.....
10.	mulmislok	.....

For the next generalized situation, Schematic Type A′, we add to the single major large distribution class of morphemes of Type A a small number of morphemes which constitute one or more distribution classes which are very small (some of which may contain only one morpheme per class); which occur in relatively few emic spots; which signal grammatical relationship or hypergrammemic function of a morpheme sequence more than they do a particular lexical meaning, so that the lexical meaning may be difficult to find, or impossible to separate in part or in whole from the grammemic meaning (cf. §§7.324, 6.45). In the following brief sample, the reader is to assume that kol and pav constitute two members of a major emic distribution class of morphemes which is very large, but which is illustrated here by only these members; on the other hand, he is to assume that em and sa are the only members of their minor class. We do not supply the meanings of the morphemes, here, but they may be deduced (1) from the general meaning of the utterances in which the morphemes occur, in contrast to the general meaning of utterances in which they do not occur, etc., and (2) from the observed structural relationships of the morphemes in sequence, once the general meaning has been vaguely understood; grammemically-conditioned semantic variants of these morphemes occur, as they did in the two earlier artificial languages used for illustration; the meanings of the morphemes sa and em are less "concrete" than for kol and pav, and cannot be easily equated with the English translations implied in the translations of the sentences as wholes. The 'general meaning of the utterances' as wholes, referred to in item (1), must either be obtained from some kind of crude translation by a bilingual, or must be deduced by the linguist as he observes the physical and cultural situation within which the utterances are made, and the gestures or activities which accompany them; that is to say, that the analysis of the individual morpheme must begin with some kind of vague understanding of the total verbal-nonverbal pattern in which it occurs; morphemic analysis begins with a crude etic appraisal of the behavioremic situation.

SCHEMATIC CLASS TYPE A′ (Artificial Language Material with One Major Emic Distribution Class of Morphemes and One or More Minor Classes):

1.	emkol	'They are learning'
2.	sakol	'It's a school'
3.	empav	'They are playing'
4.	sapav	'They are players'
5.	sapavkol	'The players are well trained' or 'They are well-trained players'
6.	sapavpav	'The players are playful'
7.	sakolpav	'The school is playful' or 'It's a play school'
8.	emkolpav	'They are learning in a playful way'

9. emkolkol 'They are learning in a skillful way'
10. empavsakol or sakolempav 'The scholars are playing'
11. empavkolsakol or sakolempavkol 'The school plays skillfully'

Also, with no translation provided:

12. sakolempav .....
13. sapavemkol .....

This type of class situation, Schematic Type A′, is deliberately patterned to reflect some of the characteristic phenomena seen in many of the languages of China, or of Polynesia. The reader should note, however, that such a type makes no pretense at "classifying" a language as consisting of these characteristics only; every language is sufficiently complex that at some point it is likely to have elements which are similar to each of the types we are using here to illustrate general principles. The proportionate amount by which languages differ in such respects, however, gives to them a pattern of their own which may impress a person from a different language area as being strange.

Such characteristics of a language do not necessarily have this effect upon the observer early in his study of that language. It is quite possible that an analyst in the early days or even months of his study might be convinced that the data he was meeting were of a somewhat "conventional" type (i.e., of a more Indo-European pattern). Then, however, a few residues might begin to trouble him--a number of morphemes which do not fit his preconceived ideas as to how a language should operate. It is sometimes such a crucial residue of data, rather than a large initial mass of data, which forces him to consider casting his entire description in a different format. For purposes of illustration, however, we find it necessary to condense, into a small space, material which in an actual situation might be much more diffuse. The procedures implied here, and illustrated more at length in §§7.74, and 22, are designed to be applicable to the actual situations, not just to artificial ones.

Just as Schematic Class-Type A could be made much more productive by an addition, in Type A′, of one or more minor emic classes of morphemes, so also Schematic Class-Type B may be made much more flexible if it is modified into Schematic Class-Type B′ with one or more added minor emic distribution classes of morphemes to supplement its major classes. In the following artificial sample, one major class is comprised of masu, fukos, kiti, and sat. A second major class is comprised of tesu, soki, kuni and samo. One minor class is comprised of kil; a second is comprised of top.

SCHEMATIC CLASS-TYPE B′ (Artificial Language Material with Two or More Major Emic Distribution Classes of Morphemes and One or More Minor Classes):

1.	manatesu	'The lady makes dresses (or clothes)'
2.	fukostesu	'A friend makes dresses'
3.	kititesu	'The man makes clothes'
4.	sattesukil	'Does the clown make dresses?'
5.	kititesutop	'The man does not make dresses'
6.	sattesutop	'The clown does not make dresses'
7.	manatesufukos	'The lady makes dresses for a friend'
8.	mantesukitikil	'Does the lady make suits for the man?'
9.	manatesukititop	'The lady does not make suits for the man'
10.	kitisokimana	'The man sells groceries to the lady'
11.	fukoskunisat	'A friend keeps accounts for the clown'
12.	kitisamotop	'The man is not singing a song'
13.	satsoki	'The clown sells groceries'
14.	kitisamotopkil	'The man is not singing a song, is he?'

Also, without translation provided:

15. fukossamokititopkil .....
16. manasokitopkil .....

Sometimes a language which contains phenomena associated with Schematic Type B may have within its major classes a number of subclasses of those major classes which operate grammatically in ways analogous to the minor classes for Type B′. Such a type might be labelled Schematic Class-Type B″. The difference between Schematic Class-Type B′ and Schematic Class-Type B″ is that the minor classes of the latter are comprised of subdivisions of the larger classes, instead of being completely independent of the membership of the larger classes. The Mixtec language of Mexico has as one of its most characteristic sets of features a group of classes which are similar to those mentioned for both Types B′ and B″; for a list of some members of a subclass which manifests a Mixtec directional-locational grameme, see §7.323.

In our next type, Schematic Class-Type C, we wish to illustrate the manner in which a language may have several major emic classes of morphemes, and several minor emic classes of morphemes, but so arranged into a hierarchy of classes that one major class (let us say Class I) may occur with one or more minor classes (say Classes 1a, 1b, 1c) in an intimate association with them such that a member of Class I plus a member of Class 1a (or of I plus a sequence of

1a, 1b, and/or 1c, etc.) enters into a class of close-knit hypermorphemes which as a whole is itself one of several major mutually-exclusive hypermorpheme classes or of composite morpheme-hypermorpheme classes. A further close-knit higher-layered class might be comprised of members which have as one of their morphemes a member of Major Class II, and as another morpheme or morphemes in sequence with it, a member or members of Minor Classes 2a, 2b, and 2c. No member of Class 1a, 1b, or 1c occurs in association with Class II as comprising a hypermorpheme; and no member of Classes 2a, 2b, 2c occurs with a member of Class I as comprising a hypermorpheme. Such hypermorpheme classes, or composite morpheme-hypermorpheme classes, we may call respectively Class I′ and Class II′.

These emic distribution classes, like all other emic distribution classes of morphemes, or of morphemes and hypermorphemes, are determined in reference to the grammemic or hypergrammemic spot or spots which they fill. In the following artificial language material, emic classes of morphemes and hypermorphemes are therefore to be determined in this way; since, however, we shall not be discussing grammemic spots in detail until §7.32, hypergrammemic considerations until §11, and hypermorphemes, as such, until §10, some of the reasons for our analysis will not appear until those sections are reached. Similarly, phonological considerations are relevant to the ultimate treatment of such morpheme sequences, and these phonemic and hyperphonemic items will not be treated in detail until §§8 and 9. Nevertheless, we are anticipating here some of the conclusions concerning morphemic classes which in fact cannot be completely justified within behavioremic theory unless some data (the precise amount, whether much or little, we do not specify) is gathered from these various modes of the utterance, as well as from the nonverbal behavioremic setting (within which the distribution of the uttereme may aid in determining cultural relevance and function--i.e., meaning or purpose of some kind, as well as the spot-filling function of the utterances within a larger nonverbal-verbal context).

It is very useful for the advanced linguistic student* to take a number of hours to attempt to analyze these data before seeing a solution or partial solution of them. Within this material are many kinds of interlacing problems which, stated in words, may not appear very surprising to him but which, when "worked through," make concrete a number of the principles of linguistic structure which otherwise may remain unassimilated, and which cannot be appreciated in the same way if the solution is read before the data are viewed with care. For this reason, and because of the interlocking of morpheme classes with grammemic spots, we shall give the data here, but delay the listing of the members of the morpheme or morpheme-hypermorpheme classes until §7.74. At that time, also, we shall give some grammemic and utteremic formulas for the same materials. The student will find the effort more profitable, in some ways, if he attempts to analyze, first, the data for "Stage A" from these several (morphemic, grammemic, utteremic, phonemic) points of view and only then proceeds to inspect the data of "Stage B" from these same points of view, in order to correct or amplify his conclusions based upon the first stage. Next he proceeds to "Stage C," etc.

The reason for such a MULTIPLE STAGE PROBLEM is that it allows for an extremely important element: it makes it possible to view all the data from many viewpoints so that he can treat the problem as a whole; he "dives in" to the structure as a whole, vaguely, crudely, inaccurately, but nevertheless with the advantage that he can begin to see each componential system or mode of the language in reference to other systems or modes. In addition, it makes possible in a practical, working situation that which behavioremic theory asserts in principle--that various parts of the language, such as morphemic class structure and grammemic structure, hypermorphemic structure and hyperphonemic structure, in some instances constitute reciprocal components in their respective definitions. Such a multiple-stage and multiple-level approach reflects, furthermore, something of the actual working procedure of every practicing descriptive linguist--even of those who most vigorously attempt to eliminate such matters from their theoretical statements and from their written final presentation of data. (For documentation of this fact, see Pike 1952a, pp. 115-19, e.g., in reference to Trager and Smith, 1951, pp. 54, 81, 68.)

If the student is not acquainted with methods of phonemic analysis at the time he starts the analysis of this material, he may ignore the phonological theoretical problems (which are not treated until §§8 and 9); otherwise he may utilize current phonemic techniques (e.g., Pike, 1947c).

*The beginning student is likely to find this problem too complex for solving readily. For his purposes, a more gradual approach is needed, and one which introduces him to problems in an order quite different from that adopted in this theoretical treatment. Such a step-by-step procedure, however, is projected for brief treatment in §22.

SCHEMATIC CLASS-TYPE C (Artificial Language Material with Two or More Major Emic Distribution Classes of Morphemes Linked in Close-Knit Hypermorphemes with One or More Minor Emic Classes of Morphemes, respectively; and with the Hypermorphemes Thus Formed Constituting Further Major Emic Distribution Classes of Hypermorphemes, or Entering Composite Morpheme-Hypermorpheme Classes):

Phonetic Data* Stage A:

1.	to. 'mik. sa\‖	'The food is good''
2.	to. 'mi. ku\‖	'The food is hot'
3.	ti. 'pa. ku\‖	'The fire is hot'
4.	ti. 'pa. suf. ku\‖	'The fires are hot'
5.	ti. 'pam. to. mim\‖	'The food on the fire is cooking'
6.	ti. 'pam. to. mis\‖	'The food on the fire is done'
7.	sti. 'fo\mit. ·i. pa\‖	'The man is stirring the fire'
8.	sti. 'su.\mit. '·i. pa. suf\‖	'The man will stir the fires'
9.	sti. 'ka.\mi. 'tuf. sto. mi\‖	'The old men stirred the food'

Phonetic Data Stage B:

10.	tu. 'pa. pi.\mit. 'mi. tuf. m\‖	'The man sees the children'
11.	ksa. 'tu. pa. pi\mit\‖	'The man sees well'
12.	lil. 'ksa\‖	'Life is good'
13.	ksa. 'ta. ta\mi. tuf. m\‖	'The children ate well'
14.	tu. 'pa. ka.\mit. 'ka. puf\‖	'The man saw the berries'
15.	lil. m. '·it \‖	'The man is living'
16.	lil. m. '·it. m\‖	'The child grows'
17.	lil. m. '·its\‖	'The old man is living'
18.	lil. 'smits\‖	'The old man is dead'

Phonetic Data Stage C:

19.	tat. 'su\mi. tuf\‖	'The men will eat'
20.	ta. tak. sa. mi. tuf. m. ku. to. mi	'The good children ate the hot food'
21.	tu. pa. ka. mit. ksa. ka. puf	'The man saw the good berries'
22.	ka. 'puf. ksa\‖	'The berries are good'
23.	lil. m. 'ka. puf. m\‖	'The growing berries are ripening'
24.	lil. m. 'ka. pufs\‖	'The growing berries are ripe'
25.	lil. 'ska. pufs\‖	'The berries on the dead vine are ripe'
26.	tu. 'pa. su.\ksa. 'mi. tuf. ti. pa. suf\‖	'The good men will see the fires'
27.	tu. 'pa. ka.\ mit. 'ksa. to. mi. suf\‖	'The man saw the good meal'
28.	tat. 'pi\mits\‖	'The old man is eating'
29.	tat. 'su.\ mit. m. 'kap\‖	'The child will eat the berry'

Phonetic Data Stage D:

fon. m. 'skim.\‖ tu. 'pa. ka.\mit. 'smit. m.\‖ ta. 'ta.\mit. m. 'ka. puf. nos\‖
tu. 'pa. tu. pa. ka.\ mit.\‖ ta. 'ta.\ mit. m. 'ka. puf.\‖ mit. m.\ fon. 'smits.\‖
ka. 'puf. ksa. nos.\ fon. 'smits.\‖ ka. 'puf. ksa.\ fon. 'smit. m.\‖ mits.\
tu. 'pa. pi.\ sil. 'ska. puf. nos.\ fon. 'smit. m.\‖ tu. 'pa. pi.\ ski. 'suf. ka. puf.\
fon. 'smits.\‖ ka. 'puf. ksa.\ fon. 'smits.\‖ tat. 'su.\ ski. 'suf. ka. puf.\
fon. 'smit. m.\‖ tat. '·a. ta.\ mi. 'tuf. ksa. ka. puf.\‖ lil. 'ksa.\ fon. 'smi. tuf.\‖
fon. 's:kim.\‖ 'I'm telling you a story. An old man saw a child. Was the boy eating berries? He looked again. Yes, the boy was eating berries. "Hello, fellow," said the old man. "Are the berries good?" asked the old man. "The berries are good," replied the boy. "Old man, can you see the berries?" asked the boy. "I can see the berries and they are good," replied the old man. "Let's eat berries, then," said the boy. They ate and ate the good berries. "Life is good," they said. I'm finished telling my story.'

*The low dot [.] represents syllable division. The low line slanting to the right [\] represents the end of an abdominal pulse, a stress group. The single vertical bar [|] represents the end of a tentative-ending breath group; the double vertical bar [‖] represents a final-ending breath group. These items will be discussed in §§8-9. The raised dot [·] indicates the lengthening of the quality of the sound immediately preceding it.

Although we shall not be discussing in detail the problem of "words," or of "morphology" versus "syntax," until §11, the preceding problem is built to lead to certain units which would clearly be recognized as "words," and to illustrate a language type in which a morphology-syntax division is structurally basic. The terms "stems," "affixes," and "words" are much more useful in discussing Class-Type C than they are in discussing a language which utilizes morpheme distribution classes which are more like Class-Types A or B.

If Class-Type C is augmented with further minor classes which are like the minor classes of Class-Types A′ and B′, rather than like those of Class-Type C which are so closely knit to major classes in further classes of hypermorphemes, it becomes Class-Type C′. Such a type may serve to initiate the student into some of the theoretical problems which are met in--say--Turkish, or Aztec, or Latin (though certain other problems, e.g., those, of gramemic fusion, need a supplementary model for Latin or Spanish; fusion problems will be discussed in §14).

7.32 Gramemic Spot, Proportion, and Structural Meaning as Gramemic Components

A morphemic distribution class is determined by its occurrence in one or more gramemic spots (§§3.41, 6.63), and it is the structural, reciprocal correlation of a class of morphemes with a gramemic spot which constitutes the grameme--a verbal motifemic-spot-class-correlative. Therefore just as the identifying-contrastive criteria of morpheme classes constitute one set of identifying-contrastive criteria for gramemes, so the identifying-contrastive criteria of the gramemic spots also constitute another major set of identifying-contrastive criteria for gramemes.

7.321 Grametic versus Gramemic Spots

With this in mind, it is now necessary to make a distinction between a grametic spot and a gramemic one--which we have not done on occasions earlier, when emic spot was mentioned (e.g., §6.63).

A GRAMETIC SPOT has at least three important elements to identify it, or to contrast it with other spots, in addition to those resulting from the class filling it. First, a grametic spot has a single, rigid physical ORDER or physical POSITION in reference to the place it occurs in some one variant of an uttereme. Thus, to be in the "same" grametic spot, in two utterances, a word must precede or follow the same morphemic classes in the same grametic spots in those two utterances: John and Bill are in the same grametic spot, for example, in the utterances John, they say, came home yesterday, and Bill, they say, came home yesterday, but the grametic spots would differ slightly or considerably from them in the utterances They say that John came home yesterday, and My big John came home yesterday, and Did John come home yesterday?

Second, a grametic spot is such that there is a constant relationship between the function of any one of the morphemes optionally filling it and the morphemes filling other grametic spots in the same uttereme; there is therefore a constant functional PROPORTION which can be seen between any set of morphemes filling two grametic spots of an uttereme. For example, the relationship of John to ran is the same as that of Bill to ran in the sentences John ran home, and Bill ran home. Set up in the form of a proportion, this would read:

John : ran home :: Bill : ran home.

In these utterances, Bill and John are HOMOLOGOUS; and John is here a HOMOLOGUE of Bill, while Bill is a homologue of John. Two morphemes which are proportionate in filling the same grametic (or gramemic) spot, then, are homologous; homologous items fill a comparable place in the next layer of the hierarchy of which they are a part.

It needs emphasis at this point that we have not stated here that any one "meaning"--or any meaning--has been carefully and minutely identified in order to discover that proportionate relationship. Rather we have indicated that, whatever the meaning is, or whether or not there is any detectable meaning, the relationships are parallel between the utterances, and between the elements substituting one for another within the grametic spot. It is not necessary that one be able to define more accurately than this the function of elements in order to be able to identify spot-class relationships, and to identify membership in the same gram constituted of that spot-class correlation.

Third, however, we note that in spite of the necessity for this last word of caution, we can state that often there is a discoverable--though perhaps vague--function, or STRUCTURAL MEANING which is one of the identifying-contrastive characteristics of such a grametic spot as manifested by its morphemic class. For example, the function or structural meaning of the spot-class unit manifested by John in John ran home may be labelled 'actor-as-subject.' On the other hand, it may not be profitable to try to describe a specific structural meaning, for the morphetic-spot-class-unit (the gram) manifested by to in the utterance He wanted to sing and He wanted to write, etc.; in accordance with the second (i.e., proportion) characteristic of a grametic spot, all that is necessary to enable one to identify the presence of that gram is to

separate it from others which do not enter the same proportion.

Nevertheless, once a structural meaning has been clearly found for any one gram, it must be assumed to be a different gram from a spot-class-correlative which has a distinctly different structural meaning. Once the structural meaning of a gram has been discovered, it is as legitimate a criterion of the identity of that gram as any of its other criteria; two grams can be differentiated by any one of their respective characteristics--whether of meaning, or of order, or of proportion, or of class membership, etc. It is in part by this provision, for example, that we indicate that in English there must be more than one subject gram: the gram manifested by John in John ran home means 'actor-as-subject-of-the-sentence' but the gram manifested by John in John was hit in the eye is a different gram with a different structural meaning such as 'recipient-of-action-as-subject-of-the-sentence.'

A GRAMEMIC SPOT is comprised of one or more grametic spots joined into a single grammemic functional unit. Grametic spots, from this point of view,* are variants of grammemic spots. (Variants of grammemes, including their variant spots, would normally be scheduled for treatment in §7.4; it is convenient, however, to transpose a bit of that material to this section in order to clarify the relation of the grametic spots to their corresponding grammemic ones.) Several types of such relationships may be listed:

(1) A sequence of two grametic spots in two respective utterances may be assumed to constitute the same sequence of grammemic spots if their function, proportion, structural meaning, and physical order are the same in reference to each other in the two utterances, even if some material in the second utterance interrupts the two spots under attention in the first utterance. Thus, in John ran home the relationship between the spots filled by John and ran is unaffected by the intervening they say in the utterance John, they say, ran home; hence the grametic spot filled by John in the first utterance and the grametic spot filled by John in the second utterance are assumed to be variants of the same grammemic spot.

(2) The physical order of a grametic spot (in reference to other grametic spots in that utterance) may differ from that of a functionally similar grametic spot in a second utterance and yet be a variant of the same grammemic spot. Thus the grametic spot filled by away in John ran away is the same grammemic spot but a different grametic spot from that one filled by away in Away ran John, but the style difference carried by this grametic variation must be accounted for in a manner analogous to that for other kinds of locally-free but stylistically-conditioned variants (§§6.56, 7.313(3)).

(3) Two grametic spots may be assumed to constitute the same grammemic spot if they differ only in the functional relation between these spots and, respectively, the neighboring spots in the utterances in which they occur, provided that this functional difference seems to be noncontrastive in the language, and is rather conditioned by the particular lexical elements filling these spots. Thus, for example, the relation of fire to burns in Fire burns is a bit different from the relation of man to sings in Man sings (since fire cannot voluntarily perform its action, etc.), but this difference is not emic; the grammemic spot filled by fire is the same grammemic spot as is filled by man; the language treats fire "as if" it were an actor, precisely by constituting it a member of the same morphemic class as man, filling the same grammemic spot, and manifesting the same grameme in the the same uttereme.

There may, however, be some permanent indeterminacy or early but temporary procedural error in deciding just how similar two grametic meanings must be before one may assume that they may or may not constitute variant meanings of the same grameme; this, however, is no different in principle from the indeterminacy in deciding whether a certain pair of homophonous morphs, different somewhat in meaning, are members of the same morpheme (§§6.43, 6.44; and cf. §7.43).

(4) Grametic spots from two different utteremes may constitute a single grammemic spot if the functions (or structural meanings) and classes filling them are the same. Thus, for example, the grametic spot filled by John in John is here is the same grammemic spot but a different grametic spot from that filled by John in Is John here?

Before ending this discussion of grammemic spots it is necessary to draw attention to one erroneous conclusion which a reader might easily be led to deduce from our terminology, but which must be rejected within the framework of the total theory. If the analyst assumes that a grammemic spot is to be considered an emic unit of behavior on a par with the behavioreme, uttereme, morpheme, grameme, phoneme, he will encounter crippling difficulties; although a number of grammemic-spot characteristics such as we have discussed in this section can be shown to be in line with the conclusion that a grammemic spot is itself an emic unit, there is

*A slightly different point of view, not under consideration here, is that involved when the analyst is first attempting to analyze a language. At such a stage, a grametic spot may in some instances be merely a tentatively-regarded grammemic spot. The two views do not conflict, and often merge into one.

one element that rules it out. This latter characteristic is the fact that the grammemic spot as such has no physical manifestation within nonhypostasic behavior. But since every emic unit within this theory does have its manifestation mode, a grammemic spot cannot be considered one of them; that is to say, a grammemic spot is not an eme.

The question is likely to be raised at this point as to why the "filling" of a spot does not constitute a "manifestation" of that spot, and so fulfill the requirements of a manifestation mode for the spot. The answer is in two parts: First, the reason for discussing spots as spots is specifically to study their distributional relations as if there were no filling in them; to drop this approach would necessitate the reworking of the presentation of the nature of grammemes, without the advantage of being able to discuss the situations, considered abstractly, within which grammemes have their manifesting classes occurring; it can be done, and would not injure the basic trimodal emic theory we have been setting forth, but it would make it more difficult to talk about, since more things would have to be said "at the same time" without being able to break up components for separate contemplation. Secondly, if we grant for the sake of argument that the filling of a spot is a manifestation of that spot, and hence that a spot is an eme without the restriction objected to above, then our resultant eme turns out to be a spot-plus-filling correlative. But since the filling is a morphemic class, we have ended up with a spot-class correlative; and the morphemic-class-grammemic-spot-correlative is already accounted for in our theory: it is, specifically, the grammeme. Furthermore, once we see that the result would in fact be the reestablishment of the grammeme under a different label, we can then point out that there is considerable advantage in retaining our present approach: In practical matters, we gain by being able to discuss spots apart from their filling; in theoretical matters, we gain by having our term--grammeme--represent by definition the entire spot-class correlative, with the filling constituting one component and the spot another component, rather than having the term focused on just one of these components. It allows us to retain the point of view, also, enunciated in §3.56, that the distribution mode [of a unit] is not a system of empty spots within empty spots, but a system of filled spots, in which the substance filling the spot--the particular item at the time, and the class of potential items so occurring--is part of the distribution mode.

Two questions concerning this problem still remain: Why, one might first ask, do we use the term 'emic' for a spot, if the spot is not a nonhypostasic eme? The answer is that it proves convenient to have a term to refer to 'a characteristic of or component of an eme' without committing ourselves as to whether this particular component is or is not an eme itself. An 'emic unit' is an eme; an emic characteristic or component may in some instances constitute an eme, and in other instances may not constitute a nonhypostasic eme.

The second question follows: What kind of unit, then, is an emic spot, within this theory, if it is not an eme? The answer to this query is that it is either an analytical abstraction made by the linguist, or--in an instance where non-analytical participants in an activity discuss spots where activity may or does occur (§3.41, the omitted choir number)--an analytical abstraction made by the participants. In both instances, the result would be a CONCEPTUALIZED HYPOSTASIS (§§6.43, 18) of a component of an eme; but this hypostasis is neither a functional hypostasis nor an analytical functional hypostasis of an eme in the sense described in §4.23, since it is not the hypostasis of a unit which is a part of, and an activity normal or essential to, the behavioreme in which the spot normally occurs. In this sense, "spot," as a unit--since it does not occur unfilled in actual behavior--is analyzed as a creation of the analyst, in a manner which we have rejected for emes of non-analytical behavior (cf. §§2.1, 2.72) but which we accept as valid for conceptualized hypostasis and which we have accepted for the etic systematizations of the analyst (§2.1). It is, however, a conceptualized functional hypostasis when normal participants focus on spot characteristics minus the particular activity which might fill such a spot (cf., again, §3.41--the omitted choir number noted by the participants), and it is a conceptualized analytical functional hypostasis when the nonparticipating analyst studies such a spot from the point of view of the normal participants in its containing activity.

Both of these conceptualized types differ from the nonconceptualized types of hypostasis of §4.23 in that the only physical activity which manifests this analytical activity is constituted of the verbal utterances of the analyst himself (especially the verbalization of the names, such as "spot," which he uses to label these abstractions), and of his neural activity as he ponders the problem (cf. §18). The analytical activity of abstracting for discussion a "spot" without its filling is itself an activity emic to the analyst. If one chooses to eliminate from one's data all analytical activity, whether performed by a professional or by normal participants in an activity, such problems may be in part by-passed. If this is done, however, the resultant theory cannot be a complete theory of the structure of human behavior since any such theory must include the theorizing of the theorist himself, as we have indicated in §2.1. Yet a confusion of analytical and non-analytical types of activity paralyzes effective analysis; they must be treated separately within the theory without a distortion of that theory.

7.322 Recognition of Proportion

In the preceding section we indicated that one of the elements essential to a grameme was the homologous nature of its various manifesting morphemes. The question which we raise here is the means by which the linguist can recognize such homologousness when he sees it, i.e., how he can tell that

John : came :: Bill : came.

Our conclusion is that there are some tests which lead one to an assurance that his first guesses are right, or that they are wrong and must be corrected, but that there is no technique which can by-pass the necessity for the initial crude etic guess nor which can lower to zero the margin of error of that initial guess.

If, for example, the analyst for some reason suspects that two sentences have homologous parts, he may use an "expansion" approach to test that guess: Two sentences which can be similarly expanded by the addition of extra words in the same places in those sentences can usually be assumed to have the same gramemes and to have corresponding morphemes or words proportionately placed in these gramemes, whereas two sentences which cannot be so expanded have to be assumed to contain different gramemes in whole or in part, or to be in some way different as regards the arrangement of their gramemes. Thus, the utterance Come John! can be expanded to read Come here quickly John! whereas the utterance No John! cannot be expanded to read No here quickly John! and make sense; the two utterances do not have homologous parts; come and no are not homologues of each other in these instances. On the other hand, Come John! and Run John! can both be expanded by the addition of quickly before John; they have homologous parts.

A second test for homologousness, one which is not conclusive but which helps to support the first, is the fact that if two morphemes are homologous in one gramemic spot, and if each of these morphemes occurs in numerous other gramemic spots, there is a strong probability that the two morphemes will be homologous in at least some of these other spots as well. Thus, if the analyst is uncertain as to whether two morphemes are homologous in a spot under attention, but if he is certain that they are not homologous in other spots, then he should hesitate to consider them homologous in the first spot. This is another way of viewing the fact that morphemes occur grouped into emic classes, and once a member of a class is identified in a particular gramemic spot, there is some probability that other members of that same class, occurring in the same sequence of morphemes, will be homologous with it. There is some caution needed in this test, however, since there sometimes occur homophonous but contrasting manifestations of grameme sequences--i.e., structurally ambiguous sentences do occur--which are not distinguished by this second test, although they would be so distinguished by the first test (compare John paid for a bench in the park, with John paid for a bench which was in the park, and John paid for a bench yesterday when he was in the park); and cf. §11.

Further techniques of gramemic identification are implicit in the balance of this chapter, and in §22, but none of these later additions eliminates the necessity for a man to make at least some of the first crude etic guesses as to proportion when he is analyzing a language for which no interpreter is available. If the analyst has bilingual informants sufficiently sophisticated, he may try to pass on to them the onus of such an analytical leap, by asking them to tell him whether items such as John came and Bill came are the same or different. This is by no means a simple question to ask of a native speaker, however (and cf. discussion in §§2.73-74), since in this instance sameness or differentness has to be interpreted not on the level of morphemes (in which these two sentences are different) but on the level of gramemes (in which the two sentences are the same).

Even if the analyst succeeds in destroying the naïveté of his informant (§2.73) so that the informant learns to react on the gramemic level at the appropriate time, the essential question still remains: How does the quasi-analyst--i.e., the informant who has now in part become an analyst--recognize that two items are homologous? And how is this knowledge related to an initial guess of the nonnative analyst, when both native and nonnative may be only partly right?

If one tries to escape this difficulty by stating that the analyst utilizes structural and/or lexical meaning to recognize proportion--which he certainly does, for this early guess--the question then becomes: And how does he recognize this structural meaning--is it not by proportion? And how does one separate that structural meaning in his first steps from lexical meaning--does not gramemic proportion enter?

If the analyst tries to escape these difficulties by affirming (without demonstrating) that he uses neither lexical meaning nor structural meaning nor intuitive recognition of proportion nor any combination of these, but that he uses only "distribution," he has once again changed the focus of attention for the question, but has neither answered it nor by-passed its implications. How does he recognize that things are in sequence--that one comes after the other? And how does he recognize that two sequences are comparable, or the same, or different, so that he can compare distributions? Or how does he recognize "spots" in a sequence without labelling the spots as such (since that would

lead back immediately to the difficulty of recognizing proportion) so that "distribution" is not treated as a crude occurrence of one morpheme next to another, but of morphemes in relevant sequence? And how does he recognize the fact that two items are the two items which he thinks they are, or how does he recognize that one is a recurrence of the other, if no such identification insight occurs prior to the study of the distribution of the items identified crudely or tentatively by that insight?

I am not competent to handle the philosophical and psychological problems involved in the analysis of the initial insight of the analyst, whether that insight has reference to the recognition of proportion (or of structural meaning) or the recognition of the first items of lexical meaning (or of purpose). Our linguistic theory and the procedures based upon it, however, must take as a basic working assumption the fact that proportion and lexical meaning are part of the data, as well as the fact that the linguist can identify, crudely, etically, with a wide margin of error, something of these characteristics in the data before he applies his rigorous emic procedures to this material to arrive at a structural refinement of that material. We have chosen--perhaps unwisely--to call these essential activities of the analyst INTUITIVE STEPS (or ANALYTICAL LEAPS). By them the analyst sets up his ETIC HYPOTHESES for testing, and in relation to them any emic analysis of human behavior must ultimately be in part initiated.

A further related intuitive step is implicit or explicit in the application of every major part of the theory. One will occur, for example, at the introduction of the phoneme (§9), where the analyst assumes the presence of speech segments and his ability to recognize--crudely and etically only--some of them. Another occurs at the introduction of each hyper-unit (§§9-11).

It is at this point, then, that I refer again (cf. §1.2 end) to a monolingual approach to the analysis of a language--the analysis of a language approach through gesture, without an intermediary interpreter--emphasizing that it constitutes my basic method of testing whether those points which must be bridged by intuitive steps are fatal to the theory by being procedurally unworkable; or whether on the contrary it can be demonstrated, objectively and repeatedly, by independent observers, that those steps can in fact be taken within the limits of time and equipment available to the practicing linguist, and with a degree of accuracy sufficient to allow success. In reference to the two instances mentioned here (proportion and lexical meaning) in which such intuitive initial steps are essential to the theory, there is no doubt whatever--these steps can be taken: on the one hand, people have for years been learning the meaning of words by gesture, where an interpreter is not available, and my test of the monolingual demonstration of this procedure is merely putting the process under conditions for more rapid testing and better control. On the other hand, in the same manner, persons have been learning and responding to the analogies or proportions or patterns of language from their childhood--and, once more, a laboratory monolingual test of this ability (seen, for example, in our Record 53) merely shows that under controlled conditions one can indeed recognize linguistic proportion between similar items rapidly enough and with a sufficient degree of accuracy to be useful. Therefore there is no procedural reason for eliminating such recognizability from the basic theory itself even though the philosophical statement of these matters may be far from adequate.

It is also important to see that within this theory a morphemically-complex item cannot be considered as homologous with a morphemically-simple item, unless the morphemically-complex item occurs within the boundaries of a single expanded grameme; it may not occur partly in one (nonfused) hypergrameme, and partly in another (nonfused) hypergrameme. This follows from the phrase in the definition of §7.1 which reads: '...within the pyramided hierarchy of the distribution mode of a minimum or included behavioreme or hyperbehavioreme.' The phrase 'pyramided hierarchy' implies that a grameme, except at a point of fusion of two grammemes, cannot be divided in such a way that half the manifested form of a morphemically-complex variant of one grameme, and half the manifested form of a morphemically-complex second grameme, constitute a coherent higher-layered unit, since, rather, in this theory the higher-layered unit beyond a grameme would be constituted of a hypergrameme, and a hypergrameme is comprised of the manifested forms of two (or more) grammemes--not parts of two manifested grammemes. Similarly, we would not, within this theory, group into a relevant high-layered unit half the manifested form of a hypergrameme with the manifested form of part or all of a simple or morphemically-complex variant of a grameme. Specifically, this would mean, for example, that we would not grant that John...s is homologous with you in John sings and You sing; although John...s occurs when you does not occur, and vice versa, we would not state that one substitutes for the other, since the gramemic-spot occurrence, and hypergramemic analysis of the totals, is not the same. (This point of view is related to that within which we stated that Latin ...us ...us of filius bonus could not in this theory be considered a pair of discontinuous morphs of a single morphetically-complex morpheme, but had to be considered a noncontiguous sequence of morphemes; cf. §6.54.) We would state, rather, that John substitutes for you, and that sings substitutes for sing.

7.323 Grammemic Meaning in Relation to Morphemic Meaning

Occasionally the grammemic (i.e., structural) meaning may be strong enough to modify, or even eliminate or reverse, the meaning which the manifesting morpheme would have elsewhere, in other grammemes. Thus, for example, if we say that something is terribly good or terribly bad or terribly pretty the meaning 'degree of' seems to be implied by the grammeme rather than by the morphemes, since almost any morpheme (or hypermorpheme) in the same spot will have much of its ordinary meaning lost whereas the meaning of the grammeme will continue. Compare, for example, awfully good, awfully bad; or frightfully good, frightfully bad, frightfully ugly, frightfully beautiful. In some languages this is even more striking. In the Mixtec language of Mexico, for example, there are the nouns čìi 'stomach', žatà 'back', ?inì 'innards, heart', ?ici 'road', nuù 'face'. All of these are used as ordinary subjects and objects of verbs with the meanings given. When, however, they are manifesting a special 'directional-locational' grammeme, the normal lexical meaning is partially superseded by the meaning of the grammeme so that translation of these items is changed: 'stomach' becomes 'under', 'back' becomes 'back of', 'innards' becomes 'inside of', 'road' becomes 'direction toward', or 'to, toward', so that prepositions might then be used in translating them into English. Note, for example, hikán-de kee-dé nuù náà-de 'He asks [eggs] from his mother', in which 'from' is the word 'face' in the special directional-locational position. For other Mixtec illustrations note the following: ni hakù ?u?ù-de 'He laughed bitterly' in which the ?u?ù is a verb meaning 'to hurt' but manifesting here a grammeme which has as its function the modification of the preceding verb; hence the morpheme 'to hurt' has its meaning modified by an accretion of the grammemic meaning until it must be translated as 'bitterly' (i.e., 'hurtingly').

7.324 Grammemic Meaning in Relation to Morphemic-Distribution-Class Meaning

When a grammeme is manifested by a class of morphemes which occur only in this grammeme and not elsewhere, then it is impossible to separate the structural meaning of the grammeme from the meaning of that distribution class as a whole. We have already indicated (§§7.313, 6.83(e)) that a distribution class of morphs or morphemes may, as a whole, have a kind of meaning in which a large number of the members of that class--but by no means all the members of that class--have some meaning component in common. Since, however, this morphemic-class meaning is in part a product of its distribution in one or more grammemic spots, and since grammemic meaning is likewise a product of distribution of elements in a set of functional environments, these meanings coalesce if the distribution class occurs only in the one grammeme and does not occur in other grammemic spots in such a way that the total class-meaning component could have been differentiated from any one grammemic meaning. For example, the morphemic class comprised of and, or, not, nor, but, rather than is such that 'All the words of this group stand only between words of the same part-of-speech or subgroups'...and 'are signals of "leveling," of connecting two units with the "same" structural function' (Fries 1952, pp. 94-95); hence the semantic component of 'connection' or 'leveling' which is part of the class function is simultaneously part of the grammemic function as well.

The indeterminacy becomes even more striking, however, when the morphemic class manifesting the grammeme is not only limited in occurrence to that one grammeme, but when that class is itself comprised of only one member. In the prior situation there could be some lexical semantic differentiation among the words of the class by observing the contrast of one of them with another in the same grammemic spot--since any semantic difference between them while within that spot could not be attributed to the spot, but could only be attributed to the morphemes (i.e., the semantic difference between and and or is lexical, not grammemic). In this new situation, however, no lexical contrasts can occur within the single manifested morpheme of the grammeme, and so there is no way of determining which part of the semantic component at that point adheres to the morpheme and which is a product of the grammeme. The English plural morpheme, as in cats, for example, occurs only in this one grammeme which may also be said to carry the implication of 'plural modification.' It is not possible, therefore, to state what percentage of the plural meaning is carried by the grammeme, and what percentage is carried by this one morpheme which alone can manifest it--nor is it necessary to do so since the analysis may be left indeterminate, with the statement that this is the way in which the structure itself is built, and that the analysis is designed to reflect that structure. For purposes of reference, however, the semantic label may be applied indiscriminately to either or both--one may refer either to the 'plural morpheme -s' or to the 'plural grammeme manifested by the plural class which contains a single member, the plural morpheme -s.'

7.4 The Manifestation Mode of the Grammeme

Turning from the feature mode of the grammeme to the manifestation mode of the grammeme, we find that much of the data relevant to the

manifestation mode has already been set forth incidental to the discussion of the feature mode of the grameme. The identificational-contrastive characteristics of the feature mode of the grameme constitute its simultaneous components (e.g., the morphemic class which manifests it, the grammemic spot which this class fills, the structural meaning--if any--pertaining to it, and so on). Each of the identifying-contrastive features of a grameme may vary freely, or under the impact of a particular environment, and each such variation of a contrastive feature, or simultaneous variation of several contrastive features of a grameme, produces a separate nonsimultaneous variant of that grameme, i.e., an ALLOGRAM. We may mention briefly certain of these types, and refer to the sections in which the varying components were earlier treated; they are mentioned again here in order to help the reader see the variation as it affects the total grammemic variant rather than just the abstracted class component of the grameme.

7.41 Identical Manifestations of a Grameme

Just as a morpheme which is repeated after a few minutes' interval is considered the same variant of that morpheme, provided that no emic units of sound are lost, or added, or replaced, and in spite of differences of surroundings in various utterances (§6.51), so two instances of a particular grameme may be considered the SAME VARIANT (the same allogram) of that grameme if all of the emic contrastive features are the same in the two instances. If, for example, we at one period of time hear the utterances John came home, Bill came home, Joe came home, and at another period of time we again hear John came home, Bill came home, Joe came home, the allogram manifested by John, Bill, and Joe is the same in each instance. Similarly, this same allogram is seen in a different context in the manifesting phrases Did John come Home? Did Bill come home? Did Joe come home? In each of these instances, the manifesting class was the same morphemically (§7.313(3)); in each the structural grammemic meaning ('actor as subject' §7.321) was the same; and in each the functional grammemic spot (§7.321) carrying that meaning was the same.

7.42 Free Variants of a Grameme

There occurs a FREELY-VARIANT MORPHEMIC MANIFESTATION OF A GRAMEME when one member of its manifesting class is freely substituted for another member of that class (§7.313(3)). HOMOLOGOUS members of two utterances (§7.32) are freely variant morphemic manifestations of a grameme; cf. John and Bill in John came home versus Bill came home.

On the other hand, FREELY-VARIANT MORPHETIC MANIFESTATIONS OF A GRAMEME occur when two instances of an utterance contain two respective members of a morpheme which are in free variation with each other (§6.52), as in I am going versus I'm going.

Likewise, FREE GRAMETIC-SPOT-VARIANTS (or POSITIONAL VARIANTS) OF A GRAMEME would be constituted of two utterances in which the grammemes were the same, but in which the physical order of occurrence of the grammemes was modified without any change in their linguistic signal, or meaning, or style; compare, in §7.32, John ran away, with John, they say, ran away.

7.43 Locally-Conditioned Manifested Variants of a Grameme

Conditioned variation of a component of a grameme results in the conditioned variation of the grameme itself. If an emic class of morphemes (§7.313) has two conditioned etic variants which are phonologically different, and each of which, in different environments, may manifest a particular grameme, the occurrence of each of these alloclasses leads directly to the occurrence of a LOCALLY-CONDITIONED PHONOLOGICAL VARIANT OF A GRAMEME manifested by these respective alloclasses. This local conditioning may be of several types, in accordance with the respective types of conditioned alloclasses (§7.313(3)). A grameme has (1) a phonologically-conditioned phonological variant when the morphemes of the class or subclass manifesting the allogram are submorphemically but phonologically conditioned in a regular manner (§6.53, say by a regular process of palatalization). The grameme has (2) a morphemically-conditioned phonological variant when one or more members of the morphemic class manifesting the allogram is submorphemically but phonologically modified in an irregular manner due to the influence of a specific neighboring morpheme or morphemes (§§6.53; e.g., as will is modified to wo- in won't). There occurs, also, (3) a gramemically-conditioned phonological variant of a grameme when one or more of the members of the morphemic class manifesting the allogram is submorphemically but phonologically modified in an irregular manner, due to the influence of a neighboring grameme or grammemes; if we assume that in §§6.53, 7.313(3) we were correct in concluding that I and me, he and him, and also she and her are respectively members of single morphemes, with locally-conditioned phonological variants determined by their occurrence within particular grammemes in utterances such as She came home and The people met her, we would assume furthermore that the same phonological variants are conditioned by neighboring grammemes in such instances as those which Jespersen calls 'relative attraction' in

utterances like I have come to be known as her whom your uncle trusted (1949, 7.226, where her is used rather than she under the influence of the manifested grameme following it). For a different type of example in which it may perhaps be helpful to assume that a morpheme receives a phonological variant under the impact of a neighboring manifested grameme, note wiv- in wives; here, and possibly also in the earlier illustration, it is indeterminate as to whether the conditioning element is the single morpheme 'plural', or the grameme uniquely manifested by that one morpheme.

The membership of the class of morphemes manifesting the grameme may be controlled locally, leading to a LOCALLY-CONDITIONED LEXICAL (or MORPHEMIC) VARIANT OF A GRAMEME. The conditioning element (§7.313(3)) may be (1) grammemic (such that there is concord--plural noun occurring with plural verb, etc.), or (2) morphemic (such that certain morphemes are limited to sequences in which certain other specific morphemes occur--as in to make short shrift of), or (3) phonemic (such that only certain words, of a particular phonological structure, may be used in certain places where they must rime with other words, etc.).

When, however, the grammemic component which is affected is a semantic one, then there occurs a LOCALLY-CONDITIONED SEMANTIC VARIANT OF A GRAMEME. The semantic component which is affected may be one of the individual semantic components of the individual morphemes comprising the class of morphemes manifesting the grameme, and in this situation one may see semantic components of the morphemes affected (1) by local morphemic conditions (§§6.53, 7.313(3), e.g., in to drive a horse versus to drive a car), (2) by local grammemic conditions (§§6.44, 7.323, 7.313(3), e.g., in terribly pretty), or (3) by local phonemic conditions (§§6.53, 7.313(3), e.g., in rime or alliteration).

On the other hand, the vague, general meaning of the manifesting class of morphemes may contribute to the meaning of the total grameme (§§7.312, 7.313(1)), and in this way be considered to affect that structural meaning indirectly. In instances where only one grameme is ever manifested by a particular class of morphemes there may be indeterminacy between the class meaning and the structural meaning of the grameme (§7.324).

In addition, the semantic conditioning may be local but the semantic component directly affected may be structural meaning of the grameme itself, rather than the meaning of the class of morphemes (or its members) which manifests the grameme. Thus, for example, the meaning "actor-as-subject" in the first grameme in Fire burns is slightly different from the meaning "actor-as-subject" in Man sings, since the relationship of the subject to the remainder of the sentence is slightly different in each instance (§7.321).

Just as, however, differences of meaning which are sufficiently great may force the analyst to treat as different a pair of homophonous morphemes, so it is necessary to treat as separate grammemes any two grams which are sufficiently different in meaning (§7.321), even if they are manifested by the very same morphemes; such grammemic manifestations are homophonous but not homologous (cf. §7.321, where John is seen to manifest two separate grams--which may now be said to constitute separate grammemes as well--in the utterances John ran home and John was hit in the eye). For an illustration of longer phrases which are homophonous but not homologous--and which therefore, by this theory, are seen to contain the same morphemes but different grammemes--note Fries (1952, p. 223): 'these Spanish students (those who are studying the language, Spanish, or students from Spain,' 'a deaf and dumb teacher (one who teaches those who are deaf and dumb or one who is himself deaf and dumb)'; the expanded environments which indicate that the relationships of the parts of the sentences are not the same for the alternate interpretations is there supplied by Fries, as indicated. The degree of difference of meaning necessary to be sure that such homophonous items are or are not homologous (i.e., are or are not freely variant manifestations of the same grameme) is indeterminate, as the degree of difference necessary to separate homophonous morphemes is indeterminate (§§7.321, 6.43, 6.44); a number of doubtful instances might be included among those modifiers for which Fries states: 'I have not been able to find formal features that differentiate the more precise meanings included here' (1952, p. 224 fn. 15).

Turning now to the membership of a class of morphemes manifesting a grameme, we see that conditioned changes in the membership (§7.313(3)) of an emic class within any one emic spot lead to conditioned changes in the etic variants of the grameme which it manifests, i.e. to LOCALLY-CONDITIONED MORPHEMIC (or LEXICAL) VARIANTS OF A GRAMEME. These variants (1) are morphemically (or lexically) conditioned when the class membership which may manifest the grameme is limited because of the specific morphemic or lexical items in its immediate surroundings (§7.313(3), e.g., the etic class containing shrift in to make short shrift of versus the etic class in to make quick ... of). The variants (2) are phonemically conditioned when the class membership which may manifest the grameme is limited because of the necessary phonological shape of the lexical item required to fill the spot (§7.313(3), e.g., in those instances in verse where a particular grammatical spot must be filled by words of a

specific riming character). The variants (3) are grammemically conditioned when the class membership which may manifest the grameme is limited because of the subclass of morphemes manifesting a different grameme in some other part of the uttereme or hyperuttereme (§7.313(3); e.g., in concord or agreement of various types, as plural subject with plural predicate; or §7.313(2), e.g., in the correlation of a member of one class manifesting a grameme with a member of a different class manifesting a second grameme, as he correlates with man--in the same or different utteremes of a hyperuttereme--or as Bill correlates with secretary in They made Bill secretary).

7.44 Morphemically-Complex Manifested Variants of a Grameme

In reference to the membership of the classes of units manifesting grammemes, it is not only the changes in the individual morphemes of the manifesting subclasses which must be discussed, but the morphemically-simple versus morphemically-complex membership of these manifesting classes. The problem assumes considerable importance, since the threshold between grammemes and hypergrammemes must be determined relative to considerations of this membership. We have already faced a similar problem in noting the difference between a behavioreme and hyperbehavioreme; between minimum and nonminimum (expanded) manifested variants of a behavioreme; between a minimum behavioreme and a minimum manifested variant of a behavioreme; and between top focus and included behavioremes (§5.3).

The crucial difference between a grameme and a hypergrameme is that a grameme is sometimes manifested by a single morpheme, whereas a hypergrameme is never manifested by a single morpheme; some grammemes may on some occasions be manifested by a sequence of two or more morphemes, whereas a hypergrameme is manifested exclusively by sequences of two or more morphemes or by a simultaneous composite or fusion of two or more morphemes; the manifestation of a grameme is optionally morphemically complex (but with the essential reservation that some of its manifestations are morphemically simple), whereas every manifestation of a hypergrameme is essentially morphemically complex; except that here, as at many other points in behavior, there may be discovered an area of indeterminacy.

The difference in the permitted manifestation of grammemes versus hypergrammemes can also be stated in reference to the classes whose membership comprises the manifestation of the grammemes and hypergrammemes. Thus (see §7.313(1)) the emic class manifesting a grameme must either be morphemically simple, or it must contain a morphemically-simple subclass as part of the total class which is a morpheme-hypermorpheme composite class (e.g., John, Bill, the boy, Johnny, the big boy, as members of a class which may manifest the last grameme in the sentence I just saw John).

Similarly, data in §7.313(1) can be utilized to indicate that a manifested variant of a grameme can be morphetically complex but morphemically simple, since a single-morpheme manifestation is morphemically simple whether the morpheme itself be morphetically simple or morphetically complex. If, for example, the word hamlet is analyzed as comprised of two morphs but one morpheme (§§6.54, 7.313(1)), then the grammemic spot next after the in the sentence The hamlet is over there is the one filled by hamlet; this grammemic spot would be grametically complex but grammemically simple, filled by a morphetically-complex but morphemically-simple member of an emic class.

On the other hand an actor-as-subject plus action expression such as John saw Bill in the sentence John saw Bill but I saw George would constitute the manifestation of a hypergrameme, not of a grameme, since at least two morphemes are essential to the emic spot filled by John saw Bill if the structural relationship of that expression to the rest of the sentence is not to be changed.

Within the discussion of the morphemically-complex manifested variants of a grameme it is useful to introduce a further subdivision: an ESSENTIALLY-COMPLEX VARIANT OF A GRAMEME is one in which both members of the complex (or substitutes for them) must occur if either of them occur. Thus the boy is an essentially-complex variant of a grameme in The boy came home, since, if the occurs, boy (or a substitute) must also occur; if boy occurs, then the (or a substitute) must occur; yet the emic spot at that point is grammemic rather than hypergrammemic since John could substitute for the sequence the boy. An OPTIONALLY-COMPLEX (or EXPANDED) VARIANT OF A GRAMEME, however, is one in which one morpheme (or a substitute for it) of the two-morpheme sequence is essential but the other is optional. Thus My John in My John came home is an optionally-complex manifestation of the actor-as-subject grameme, and an expanded variety of the simple manifested variant John in John came home. The MINIMUM VARIANT OF A GRAMEME would be a single morpheme such as John (but the minimum variant of a hypergrameme would be a two-morpheme sequence).

It should be further pointed out that the reason why a morpheme sequence such as my John must be treated as manifesting the same grameme as John does, in the sentences My John came home and John came home, is that the emic proportion is unchanged by this relation; i.e.,

John : came home :: My John : came home

insofar as the basic structural relationships of the emic spots in that sentence are concerned (cf. §7.321). John and My John are here homologous.

A complication arises at this point in the discussion: By earlier implication of the theory (§§6.1, 6.66), a morpheme occurs only as it is manifesting a grameme; every occurring morpheme manifests a grameme; the beginning of every occurring morpheme coincides with the beginning of a grameme and the ending of every occurring morpheme coincides with the end of a grameme; within the theory, every morpheme is co-terminous with a grameme. How, then, is it possible for a single grameme to be manifested either by an optionally-complex variant or by an essentially-complex variant if such a variant contains two morphemes each of which is co-terminous with a grameme?

The answer implied by this theory is that there may be an INCLUDED GRAMEME within the manifestation of another grameme, when an emically-minimum grameme happens to be manifested by an essentially-complex or by an optionally-complex variant. When the grameme manifested by John in John came home is expanded to my John, the grameme 'actor-as-subject' continues with the same structural meaning and function as before, but with an expanded manifested variant. Within that manifested variant of the grameme, however, on an inner layer of structure, two included grammemes are now to be seen, one of which is manifested by John in my John and the other of which is manifested by my, and both of which manifest minimum grammemes included within an expanded variant of the minimum grameme 'actor-as-subject'. A different set of included minimum grammemes within the same grameme 'actor-as-subject' (but with that grameme and its manifesting class occurring with etic semantic variants, cf. §§7.321, 7.313(1), 7.313(3)) can be seen in the essentially-complex variant to sing in the utterance To sing takes effort (contrast Work takes effort).

7.45 Fused versus Clearly-Segmented Variants of Grammemes

Since morphemes are distributed within grammemes (§§6.1, 6.66), and a grameme begins or ends wherever a morpheme begins or ends, and since, furthermore, there are various kinds of fusion between morphemes (§§6.55, 6.66), it follows that there are grammemic fusions; there will be as many types of such grammemic fusion, also, as there are of morphemic fusion. The morphemic types are listed in §6.66; the grammemic fusions will be discussed in §14; some of the problems of discovering grammemic borders will be discussed in that section, and in §§7.56, 11.

7.46 Systemically-Conditioned Variants of Grammemes

In §7.43 we indicated the manner in which the locally-conditioned variants of emic classes (§7.313(3)) resulted in locally-conditioned manifestations of the grameme. We now turn to the manner in which a systemically-conditioned but locally-free class of morphemes can also affect the manifestation of the grameme, so as to produce a LOCALLY-FREE BUT SYSTEMICALLY-CONDITIONED MANIFESTED LEXICAL (or MORPHEMIC) VARIANT OF A GRAMEME. This conditioning of grammemes may be of two types, in accordance with the kind of systems (§7.313(4)) which affect the grammemes. A grameme has (1) a style-conditioned lexical manifested variant when the matrix system affecting the grameme is a congruent linguistic style (e.g., when the content of the lexical set of classes is conditioned by the style which includes thee and thou, or an extra-large number of polysyllabic words). It may have (2) a matrix-conditioned lexical manifested variant when the matrix system affecting the grameme is that of the general cultural and physical setting (e.g., when it "makes sense" to say that the fox ate up the moon in a fairy tale but not in serious discourse). The occurrence of lexical items, or the COMPATIBILITY of particular sets of classes of lexical items in particular lexical, cultural, or physical contexts, is the element affected by these two types.

Similarly, a grameme has a LOCALLY-FREE BUT SYSTEMICALLY-CONDITIONED MANIFESTED PHONOLOGICAL VARIANT when the style or matrix system affects the phonemic content of some member of the morphemic class manifesting that grameme (see §7.313(3), for choice of not versus n't). Likewise, a LOCALLY-FREE BUT SYSTEMICALLY-CONDITIONED MANIFESTED SEMANTIC VARIANT OF A GRAMEME is seen when the semantic content of some member of the morphemic class manifesting the grameme is affected by the style or matrix in which an utterance is given (§7.313(3), He is a queer bird versus That is a queer bird).

When a style allows or causes a change in the etic spot occurrence of a grameme, this results in a SYSTEMICALLY-CONDITIONED SPOT (or POSITIONAL) VARIANT OF A GRAMEME (as in Away ran John versus John ran away or Away John ran, §7.321). This in turn may result in a SYSTEMICALLY-CONDITIONED STRUCTURAL-SEMANTIC-VARIANT OF A GRAMEME (in that, conditioned by the grametic spot change in the style, the grameme manifested by away has livelier story-telling connotations when it is placed early than when it is placed late in the sentence).

7.5 The Distribution Mode of the Grameme

Just as we found many parallels between the characteristics of the manifestation mode of a grameme and the manifestation mode of the morpheme, since the morphemes were the elements which manifested the grameme, and since any variation in the morphemes was therefore reflected in the variant manifestations of the grameme, so also we find many parallels between the characteristics of the distribution mode of the grameme and the distribution mode of the morpheme.

7.51 Activeness of Grammemes

Within the definition of the grameme (§7.1), for example, there is provision for the fact that it is ACTIVE (or live, productive), just as this provision was in the definition of the morpheme (§6.1) and in its analysis (§6.61). The relationship is much closer than that of mere parallelism, however; the activeness is in part reciprocal, because of the relation of the morpheme to the grameme or, more specifically, because of the fact that the borders of the two in part coincide (§§7.45, 6.66). This fact is the result, furthermore, of the relationship of the morpheme to the uttereme: the morpheme occurs only as an integral part of the manifestation of an uttereme, and its relationship to such an uttereme is its distribution within the minimum units of the distribution mode of the uttereme, namely within the grammemes of that uttereme.

Since a morpheme's boundaries are determined in reference to its activeness, we may then conclude that the criteria for an active morpheme may be used as criteria for the activeness of a grameme as well, although there must be a rephrasing of the criteria from the grammemic point of view. Note, then, the criteria essentially repeated, but modified in statement, from §6.61:

(1) A gram is active (and hence constitutes a grameme or a variant of a grameme) if its feature mode has as one of its characteristics an emic class of morphemes (or an emic composite class of morphemes and hypermorphemes) which is relatively large (e.g., the grameme manifested by John in I saw John, I saw Bill, I saw the boy, etc.).

(2) A gram is active if it is the second part of a two-grameme hypergrameme in which the first grameme meets the conditions of the first criterion just given (e.g., the grameme manifested by {-s} in cats, houses).

(3) A gram is active if the emic class of morphemes constituting one of the contrastive features of its feature mode is also a contrastive feature of various other grammemes (e.g., the grameme manifested by big in I saw the big boy; compare He is too big; big enough, bigness).

(4) A gram usually may be considered to be active if the emic class of morphemes constituting one of the contrastive features of its feature mode has had its membership increased within recent times (e.g., the grameme manifested by radio in The radio works well). There is indeterminacy, however, as to how many such additions there must have been, and how widespread their usage must be, before this conclusion is certain.

There is a further element of indeterminacy which can be very difficult to handle when a particular morph appears to be semi-active (§6.61) in a morphetically-complex morpheme. Here the difficulty lies in deciding whether the gram under consideration is being manifested by just one morph of a two-morph sequence, or whether it is being manifested by the total sequence. For example, are we to assume that the semi-active morph berry in the sentence That is a cranberry is manifesting the same gram as is being manifested by berry in That is a big berry? Or is berry in the first of those two sentences manifesting the same gram as is berry in That is a blueberry? Or, on the contrary, are cranberry and blueberry, as wholes, manifesting the active gram manifested by berry in That is a berry? Note that the sentence That is a green blueberry would seem to force us to treat green as in the same gram with big; hence cranberry, as a whole, in That is a cranberry manifests the same gram as berry in That is a berry. We conclude, then, that a sequence of two passive morphs, or of a passive and a semi-active one, must be assumed to fill only a single active grammemic spot; an indeterminacy as to the active or semi-active status of a morph will therefore be reflected in the analysis of the sequences containing them.

Wherever a single but morphetically-complex morpheme occurs, there one also finds a sequence of two PASSIVE (or dead, nonproductive) grams, or ot a passive and a SEMI-ACTIVE gram; such a sequence constitutes a grametically-complex but single grameme (cf. §7.44). Grams may be PARASITICALLY semi-active or parasitically passive when they occur as the result of the occurrence of parasitic morphs (§6.62).

(5) A gram is usually active if it has a structural meaning clearly identifiable by the linguist (e.g., the actor meaning carried by the actor-as-subject grameme in John ran home), although not all active grams have such a meaning (§7.321).

(6) Any gram for which relatively-unsophisticated native speakers are able to describe a structural meaning, upon questioning, is very likely to be active; but, as it did for the activeness of morphs, such a test leads to a different kind of indeterminacy, by changing the structuring of the informant and rendering any further tests less reliable at any point where such a

test assumes that the speaker is still linguistically naïve.

(7) A gram is active if it is the only segmental gram in an uttereme (e.g., the gram manifested by boy in the exclamation Boy!).

(8) A border between two active grams may be assumed to occur at any point where pauses or intonational breaks frequently occur in non-hypostasic or nonhesitation situations (e.g., after John in John so they say has come home, but not after cran in cranberry; and not in the middle of a morph); but there is some indeterminacy in such matters, in that in very "careful" speech, or to get intelligibility after a misunderstanding, pauses may be introduced where no grammemic border occurs; such social situations must be added to the other excluded types (hypostasis and hesitation) before this supporting criterion may usefully be used. In addition, an occasional individual may have a style differing from that of the average person in the community precisely by the fact that his style is marked by pauses coming frequently where they would not be expected in the speech of his colleagues. One public speaker whom I heard recently, for example, used the following utterances among many which were so marked: That is used in/Brazil but not the very same language. Also: It is altogether possible that within/the sound of my voice...

7.52 The Grammemic-Class Membership and the Potential Occurrence of a Grameme as a Component of Its Distribution Mode

Just as the distribution mode of a morpheme contains among its components the actual occurrence of that morpheme at some one point of time in a particular utterance, and its potential for occurring in various other places in utterances (§.6.63), so a grameme has like components. Not only does the actor-as-subject grameme occur as manifested by John in John came home, but this same actor-as-subject grameme may also occur, manifesting part of a different uttereme, in Did John come home? The total actual and potential occurrence of a grameme in various utteremes or hyper-utteremes is part of its distribution mode.

The grammemic-class membership of a grameme is likewise a component of the distribution mode of the grameme--a component correlated with its potential distribution, since two grammemes which have certain distributional potentials in common (e.g., the grameme 'actor-as-subject' and the grameme 'recipient-of-action-as-subject') are members of the same emic distribution class of grammemes, as we shall see in §7.6.

Problems as to time in relation to the potential distribution of the grameme are analogous to those discussed for the morpheme and the predictability of its past or future occurrence (§6.63). Here, as there, we are interested in "distribution" not only as an element in the recorded history of the behavior of a people, but are also interested in the distribution of this behavior in the potential future. Potential for occurrence in predictable structural positions must be a legitimate functional part of behavior, from the point of view of the manner in which people react to it and act within group-behavior patterns; otherwise, language and nonverbal behavior could not constitute components of culture on which people could rely for building useful activity. In grammemics, a STATIC analysis would be one which refused to grant the relevance of potentials of various kinds and their legitimate place in a description of a language. We must reject such a purely static analysis of behavior materials at whatever point it is found, if this static analysis purports to be an emic analysis; an etic analysis may in some instances be a static view, and highly useful (§2), however, provided it is not allowed to dissuade one from accepting the underlying postulates necessary elsewhere for working emically. One such postulate, which must be included somewhere in any theory which attempts to analyze behavior in reference to the manner in which participants in that behavior react to it, is the descriptive validity of the use of the composite of characteristics of predictability and potentials which occur in a culture. Such a view is an emic one and leads to a DYNAMIC approach to the analysis of grammemics. This view is related, furthermore, to the conviction that the emic analyst of any part of human behavior must be prepared to utilize all kinds of objective, observable behavior which are relevant to that particular part of behavior which he has selected for study, as we indicated in §§2.73-74, 2.5-6. One who holds a dynamic view of behavior, then, must reject any analysis of language which attempts to define behavior exclusively in terms of the past, or in terms of a very small sampling of fixed examples without reference to the productive potentials or productive analogies of the speakers of that language.

7.53 Potential for the Correlation of the Manifestations of One Grameme with the Manifestations of Another Grameme

One of the characteristics of a grameme which may conveniently be considered as a component of its distribution mode is the fact that there is frequently some kind of relationship between the specific manifested form of one grameme and the specific manifested form of another grameme in the same uttereme or hyper-uttereme. Three kinds of such correlation may be mentioned here:

(1) There is a SUBSTITUTION CORRELATION when the manifesting class which constitutes a component of the feature mode of a

grameme is subdivided into groups of morphemes (or morphemes and hypermorphemes) by their correlations with a small number of special morphemes such as he, she, or who, which, etc. (cf. §7.313(2)). Cf. There is a boy who is a friend of mine, versus There is a dog which is friendly with me.

(2) There is REFERENT CORRELATION when members of the same major class of morphemes--not members of a major class and of a minor class, as in the preceding type--are essential to the respective manifestations of two grammemes of an uttereme or hyper-uttereme, provided that it is also required by this structural correlation that the two be in some way identifiable by objective cultural tests as referring to the same person, or object, etc. (cf. §7.313(2)). Cf. John is president.

(3) There is AGREEMENT CORRELATION (or a TIE, or CONCORD) when the occurrence of the manifested form of one grameme forces within another grameme of the same uttereme or hyper-uttereme a manifestation--usually morphemically-complex--which indicates its correlation with the first grameme in number, case, gender, or the like. Cf. Spanish la casa blanca 'the white house', with the article, the noun, and the adjective containing a feminine ending. The reader should note, however, that if each of the two elements so correlated is morphemically-complex at every occurrence--i.e., if each is comprised of a stem plus an affix which is in agreement with an affix attached to the stem of the second element--the essentially-complex nature of the two would remove these complexes from grammemic consideration and lead to their consideration within the discussion of the internal construction of the respective hypergrammemes involved. This third type, then, is more specifically relevant to the discussion at this point if one of the two grammemes is at times correlated with the second in such a way that the first of them is sometimes morphemically simple even though the other may be always or sometimes morphemically complex; or, in a sequence of correlated morphemically-complex hypergrammemes the grammemic-correlation relevance is to be considered in reference to the specific affixes so correlated rather than in reference to the correlation of the stem-affix combinations.

(4) There is SYSTEM CORRELATION when the manifested forms of the grammemes of one system or subsystem of grammemes partially limits the occurrence of the manifested forms of an interlocking but different system or subsystem of grammemes. Thus a system of grammemes manifested by segmental morphemes may interlock with and partially limit the occurrence of the forms of a grammemic system which is manifested by intonational morphemes. For the latter kind of system, see §13; for a discussion of interlocking of systems, see §15.

7.54 The Internal Structure of the Grameme

We have previously indicated (§§3.5, 6.64) that components of the distribution mode of an eme include not only its actual distribution within a sequence under attention, and its potential distribution in other sequences, but also the internal distribution of its parts. For the grameme, as for other emes, this fact is relevant. For reference to its distribution in larger units, for example, see §§7.52, 7.6, 11.

A morphemically-simple manifestation of a grameme has only one morpheme within it, so that no problem of morpheme-sequence constructions is relevant in grammemic manifestations such as John in John is coming. When, however, the grameme has an expanded manifested variant comprised of a morpheme sequence, the internal structuring includes the relationship between the morphemes of such a sequence or--more specifically insofar as this theory is concerned--between the sequence of included grammemes (§7.44) within the grameme including them.

The structuring of the manifestations of a grameme in terms of morpheme-sequence types is limited to the particular grammemic variants which are optionally complex or essentially complex. See §7.44 for initial illustration of these items (My John versus John in My John came; and To sing takes effort versus Work takes effort); for a more inclusive etic listing of such grammemic types; see, also, §11 for essentially-complex morpheme sequences occurring as manifestations of essentially-complex grammemes, i.e., as manifestations of hypergrammemes.

The phonological structuring of the manifestations of a grameme will be constituted of the shape types of its manifesting morphemes (§6.64).

7.55 An Occurring Grammemic Manifestation Viewed as an Occurring Grameme

In §6.65 we argued that it was useful and emically valid to assume that when an allomorph occurred the morpheme could be viewed as occurring; in §7.313(2), on the other hand, we stated that the conclusion must be quite different for an alloclass of an emic class of morphemes: a person who heard a morpheme manifesting that alloclass should not be considered as hearing the alloclass itself. In turning now to the grameme, it is not at first apparent which viewpoint will prove most useful and valid, inasmuch as the grameme is manifested by a morpheme (and hence might seem to "occur") but this morpheme is a member of an emic class of morphemes (§7.31) which constitutes one component of the feature mode of the grameme (and hence might seem not to "occur").

Our decision is to treat an occurrence of a manifestation of a grameme as an occurrence of that grameme. This is useful, since it allows

us, for example, to say that 'the grameme actor-as-subject in the sentence John came home is John' or, more simply, that 'the subject of the sentence is John'; but this usage would be partially invalid if we could not assume that an occurring manifestation of a grameme can rightly be viewed as the occurrence of that grameme. Furthermore, it allows us to count the number of gramemes in a specific sentence, which we could not do if gramemes could not be said to occur in a specific sentence. Ultimately, on higher levels of the hierarchy, we must be able to speak in this manner, or we will be forced to state that no sentence type ever occurs, but that manifestations of sentence types do occur; this, too, seems less useful than the implications growing from our decision, which allows us to speak of the sentence types (utteremes) occurring in a particular paragraph, for example. On grounds of general theory, it makes our theory more consistent and symmetrical to treat every unit of a behavioreme as occurring when it is manifested, rather than treating a morpheme as occurring when manifested, but the grameme and phoneme and some other units as not so occurring. Similarly, we shall generalize and treat all emic classes as not occurring, but as being manifested only, so that here too the treatment of emic classes of morphemes is parallel with that given to other emic classes of behavior. For further support to our decision in terms of an analogy with reference to native reaction to persons, see §6.65.

7.56 Border Limits of Gramemes in Reference to Morphemes and Hypermorphemes

The relationship between the identification of grameme boundaries and morpheme boundaries is partially but not completely reciprocal.

All of the problems met in the identification of single-morpheme boundaries are immediately relevant to the identification of grameme boundaries, in view of the fact that wherever a morpheme begins a grameme begins, wherever a morpheme ends a grameme ends, and wherever there is morpheme fusion there is fusion of the manifestations of two or more gramemes. Thus the kinds of problems mentioned in §6.66 may be re-phrased here: (1) The manifested elements of two gramemes may fuse in part, so that no clear border may be discovered between the gramemes; this occurs when the border between the two manifested gramames occurs within a single phoneme (cf. §§6.55, 14; e.g., when the morphemes as and you manifesting their respective gramemes have the border fused to /ž/ in a rapid pronunciation). (2) The manifestations of two gramemes may be completely fused, so that no border can be found between them, and the same phonemic sequence simultaneously manifests both (cf. §§6.55, 14; e.g., when the morphemes did and you manifesting their respective gramemes are fused to /ǰ/ in a rapid pronunciation of Did you enjoy it? as /ǰɨnǰoɪ ɨt/). (3) Grameme manifestations which appear sharp cut at their borders when seen in phonemic transcription may nevertheless be phonetically blurred if one looks at the subphonemic characteristics of their sound-producing movements (§3.25; e.g., the etic border between [a] and [i] is slurred and indeterminate in a pronunciation of the sequence [ai] without intervening glottal stop); phonemically the border may be clear when phonetically it is blurred. (4) A grameme may be grametically complex, with two grametic spots making up the total, single grametically-complex grammemic spot; this situation results whenever the manifesting morpheme occurs in two etic parts, and in such an instance no grammemic border occurs at the internal grametic border, as no morphemic border occurs at the morphetic border between the two morphs (cf. §§6.54, 6.61, 6.62, 7.313(3); a grametic but not a grammemic border occurs between ham- and -let in hamlet).

These various items will not be discussed further here, but will be treated in a special section (§14), along with certain other related problems. Another item should be mentioned, however, which is relevant to the finding of grameme boundaries: (5) A grammemic manifestation of an optionally-complex or essentially-complex type contains within it a sequence of included gramemes (§7.44; e.g., the included gramemes manifested by big and by John in the including grameme manifested by big John in the sentence Big John came home). In such an instance, the problem of grammemic segmentation is not reciprocal with that of morphemic segmentation, since a grameme manifestation including within it two included gramemes has within it a morpheme boundary which is not as such relevant to either of the boundaries of the including grameme itself. The boundaries of the manifested variants of the included gramemes, however, are reciprocal with that of the morphemes manifesting them, as indicated in the preceding paragraph. (The nonreciprocal nature of some of the boundaries of morphemes with the boundaries of including gramemes will concern us again in §15, where it is seen to carry very considerable theoretical importance.)

In addition, (6), this theory leads to the postulation of some situations in which fused gramemes are manifested by single morphemes which are not fusions of two morphemes. Note that the -o of Spanish ablo 'I speak' is treated as a single nonfused morpheme (with various semantic components) which is manifesting two gramemes fused in this instance within a single morpheme; but in other instances these two gramemes are manifested, nonfused, by a sequence of two or more morphemes, as by -a- and -mos in ablamos 'we speak'. (This problem will be treated further in §14.)

A problem in determining the borders of included grammemes is involved, (7), when the analyst tries to determine whether an addition to a two-grameme sequence is an expansion of one member of that sequence, or is an expansion of the sequence as a whole; a decision in this matter will affect one's analysis of the borders of the included grammemes. Thus, the and boy manifest included grammemes in the including grameme which is manifested by the sequence the boy in the sentence The boy came home; but in The big boy came home does big expand the included grameme manifested by boy or does it expand the essentially-complex manifestation of the actor-as-subject grameme manifested by the morpheme sequence the boy? The ultimate implications of a decision on such a simple matter are far reaching, and to some extent involve the analysis of the IMMEDIATE CONSTITUENTS of an utterance--the morphemes or hypermorphemes which comprise manifestations of the most basic and highest-layered grammemic or hypergrammemic units of an utterance or part of an utterance. A decision on these matters can be rephrased (7) as constituting a decision as to which simple morphemes are homologous with which potential morpheme sequences, or which morpheme sequences are homologous with other potential morpheme sequences. This, in turn, involves a first etic guess based on apparent membership in morpheme-hypermorpheme classes, on apparent grametic position, on apparent grametic function or structural meaning, and on the formal and semantic unity of the manifesting hypermorpheme. The emic refinement of such initial hypotheses must be handled by any procedures available for checking homologousness (see §7.322 or hypermorphemic unity §10) and is subject to the errors and indeterminacy of such procedures and such recognition of proportion. In this particular instance, we conclude on the basis of such tests that in the big boy came home the phrase big boy is homologous with boy and constitutes an expansion of one of the included grammemes within the essentially-complex manifestation of the actor-as-subject grameme which in turn might have been manifested by the single morpheme John.

The alternative analysis, which would make the optionally-occurring morpheme big an expanpansion of the boy, at first seems attractive (since it leaves as the innermost layer of the phrase the big boy the two essentially-occurring morphemes the and boy) but may carry with it an implied analysis of certain expansions which is in contradiction to the structural relationships (structural meanings) etically observable in the cultural situations, i.e., in the larger behavioremic matrix. If, for example, big is optional to the sentence John saw Bill as in John saw Big Bill, it would be structurally unprofitable to state that big modified the entire obligatory sequence John saw Bill, since (a) on a level of structural meaning "bigness" is not a quality of the action John saw Bill but of Bill; and (b) on a level of formal emic classes Big Bill appears to be homologous with and an expansion of Bill; in some such instances, there is certain to be indeterminacy, but (c) in general we suggest the principle that one should try to analyze such items so as to avoid adding further high-level grammemes to a phrase (as there would have appeared an additional one if big were analyzed as modifying John saw Bill); we should treat options, other things being equal, as included grammemes which are expansions of grammemes already there (as big expands Bill, rather than modifying John saw Bill).

It is also useful to emphasize (8) that it is not necessary to postulate an additional including grameme every time a grameme is expanded, and it is not necessary in every instance to insist on attributing a hierarchical order to every such multiple expansion of a grameme. That is to say, that since Big Bill is analyzed as a morphemically-complex manifestation of the grameme which may also be manifested just by Bill, there is no necessity for setting up a new grameme to accommodate the phrase Big Bill; the one grameme can be treated as being manifested in the one instance by the single morpheme Bill, and in the other by the morpheme sequence Big Bill. Similarly, by this provision, it is not necessary to force a decision as to whether, on the one hand, little in my little boy who knew John is related to (modifies) boy, and who knew John is related to (modifies) little boy, or whether on the other hand, who knew John modifies boy, and little modifies boy who knew John, etc. Here a SERIAL EXPANSION is indicated, in which various items may expand a grameme, with the included grammemes of various kinds relating to the original item which manifested the non-expanded form of the grameme, without a determinate hierarchy of this expansion. In such a situation, that is to say, "immediate constitutents" are not to be considered as always binary, but may sometimes operate in a serial or nonhierarchical fashion within the larger including grameme. Nevertheless, there must be allowance for some hierarchical subgroupings of constituents within such a series (as when very is immediately related to big whereas very big is related to boy in the sentence That very big boy knows John). In all such matters, however, there continues the necessity for initial etic hypotheses of homologousness, with the necessity for formal emic checking, modification, or rejection of these hypotheses in reference to other data in the language and in the nonverbal features of the verbal-nonverbal composite behavioremes containing the utterance under consideration.

Although in the preceding instance we pointed out a situation in which hierarchical order is not necessarily present internal to certain low-layered

serial situations in expanded grammemes, we must also point out an instance in which analysis, according to this theory, must include careful attention to hierarchical matters, and must refrain from setting up units which lead to hierarchical clash. This negative principle (9) can be stated tentatively as follows (with further development in respect to hyper-utteremes reserved until §11): A morphemically-complex item cannot be considered as homologous with a morphemically-simple item, unless the morphemically-complex item occurs within the boundaries of a single expanded grameme; it may not occur partly in one (nonfused) hypergrameme, and partly in another (nonfused) hypergrameme. In the terms of our definition of the grameme in §7.1, and expressed positively, this implies that a grameme is distributed within the PYRAMIDED HIERARCHY of the distribution mode of a behavioreme or hyperbehavioreme. For example, if one grants that sings is a unit in John sings, or if one grants that John is by itself manifesting an actor-as-subject grameme, then it would be invalid to treat as a hypermorpheme unit the noncontiguous morpheme sequence John ...s. If one attempted to argue that John...s is substitutable for and homologous with you in You sing, and hence a unit, the theory here would lead to deny that statement and to reply that John, on the contrary, is homologous with you, and sing with sings, and that the agreement correlation of John with sings, and of you with sing, is to be treated, as indicated in §§7.313(2), 7.313(3), 7.43, as representing the potential for such correlation within the distribution modes of their respective emic classes and grammemes; the observed resultant forms (of sing versus sings, etc.) are the grammemically-conditioned lexical variants of the manifested respective grammemes. (For a comparable problem in respect to morphemes, where the view was rejected that ...us ...us of Latin filius bonus constitutes a single morphetically-complex morpheme, see §6.54.) All such considerations affect the points in a sequence of morphemes where the theory allows one to conclude that grammemic borders occur.

7.6 Systems of Grammemes as Comprised of Emic Classes of Grammemes

In §5.4 we indicated that behavioremes were members of systems of behavioremes some of which might on occasion be manifested simultaneously in a composite hierarchy; other systems of behavioremes (especially styles) were nonsimultaneous, but congruent, so that units of the one were related to units of the other, and the two systems formed a hypercongruent system of behavioremes. In §6.7, morphemes were shown to enter comparable simultaneous componential systems, or nonsimultaneous congruent systems. In §7.313(4), a similar approach led to viewing certain emic classes of morphemes--not the individual morphemes themselves--as members of systems which were either style congruent, or matrix congruent. Finally, in §7.52 the present section was anticipated in part, when it was indicated that grammemes occurred as members of distribution classes of grammemes. Now we wish to discuss in more detail the nature of distribution classes of grammemes and the manner in which they may constitute members of systems of grammemes.

A DISTRIBUTION CLASS OF GRAMEMES is constituted (1) of a number of grammemes which have in common the potential for occurring in an analogous included spot in an utterememe, but which differ both in the formal structure of their manifesting classes and in the structural function or structural meaning of those grammemes; or a distribution class of grammemes is comprised (2) of two or more grammemes which have in common a constellation of one or more distributional components such as physical order in a number of utteremes in which they occur plus agreement or concord of the manifesting subclasses of these grammemes with the manifesting subclasses of neighboring grammemes in these utteremes.

Many of the items in English which are ordinarily called "subjects" of statements would seem to constitute an etic distribution class of grammemes of the second type. Note the following sentences: John runs home. John has been hit in the eye. John was given the map. John was given to the city for a manager. John is the teacher. John is tired. At least some of these sentences must be considered as beginning with separate grammemes, because of the sharp differences in their structural meaning and proportion (§7.321; e.g., actor-as-subject, versus recipient-of-action as subject), and in their potential expansion (§7.43; e.g., To John was given the map but not To John ran away). Nevertheless, there is some kind of distributional unity among them, in that each precedes the predicate in these utterances and each is manifested by a singular etic subclass (§7.313(3)) of its total emic class which is in agreement correlation (§7.53) with a reciprocally-conditioned subclass of the class of morphemes which manifests the grammeme following the subject (i.e., singular predicate follows singular subject). The morphemes John, Bill, and George have lexical meanings which are different, but these morphemes are members of a single emic distribution class of morphemes; likewise, the distinct grammemes which are manifested by John in the above sentences have grammemic meanings which are different, but the grammemes are members of a single emic distribution class of grammemes.

Two or more etic distribution classes of grams may combine into a single emic distribution class of grammemes. If, for example, one concludes that the grams manifested by John in

the preceding sentences are a single distribution class of grams, but are the same grammemes which are manifested respectively by John in the questions: Did John run home? Has John been hit in the eye? Was John given the map? etc., then this etic distribution class of grams from the statements would combine with the corresponding etic distribution classes of grams from the questions to form larger emic distribution classes of grammemes.

A second distribution class of grammemes in English is constituted of a group of grammemes which may occur as "modifiers"; the data quoted here concerning formal arrangements, statements concerning structural meanings, and sample phrases, are largely taken from Fries (1952, pp. 202-27); the difference in my interpretation of his data lies in the fact that I am suggesting that several different grammemes, in a distribution class of grammemes, are involved in that which he calls 'The modification structure with Class 1 word as head' such that the structure 'signals a variety of meanings' or even a 'great diversity of meanings' (p. 217). He seeks, 'as far as possible, to connect each [structural] meaning with the distinctive formal features which operate to distinguish it'; at the points where he succeeds, we suggest that, within our theory, separate grammemes are in general identifiable--that as, elsewhere, a combination of phonemic form and lexical meaning help to identify or contrast morphemes, so here a combination of form and structural meaning help to identify or contrast grammemes. Fries names as 'Class 1' a group of items which we could assume constitute an emic distribution class of morphemes and hypermorphemes, including items such as hat, cushion, clerks, failures, companions, committee, streets, worker, performance, Spanish [people], criminal [i.e., one who has committed crimes]. His 'Class 3' is an emic distribution class including items such as pure, open, unsightly, crooked, continuous, rapid, flat, perfect [as in perfect stranger], hard [as in a hard student], criminal [as in a criminal lawyer who handles cases of crime], Spanish [as in a Spanish student who is studying the language]. By referring to these emic classes of morphemes and hypermorphemes as descriptive components of grammemes, two or more separate grammemes can then be identified within a single distribution class of "modification" grammemes:

(1) A grammeme characterized and manifested by Class 3, with a significant contrastive grammemic meaning of 'character of' or 'quality', and distributed in an emic spot preceding a grammeme to which it is related as a head in a higher-layered hypergrammeme. (This following grammeme is in turn characterized and manifested by Class 1 and has the meaning of 'substance.') Note, for example, the grammeme manifested by pure in the pure water, or by open in the open book.

(2) A grammeme characterized and manifested by Class 1, with a significant, contrastive, grammemic meaning of considerable variation, but in part summarizable under the label 'identification', and distributed within a hypergrammeme such that it precedes a head grammeme which is characterized and manifested by Class 1, and which has a vague and non-uniform grammemic meaning of 'material' or 'item'. Note, for example, budget in the budget committee, or bath in his bath robe, or milk in the milk delivery, or birthday in a birthday remembrance.

Several problems arise in connection with the further analysis of these two grammemes, however. When a word in Class 3 is homophonous with and related in meaning to a word in Class 1, for example, ambiguous phrases can result (Fries, p. 223). Nevertheless, two such structurally-ambiguous phrases would be grammemically different, within this theory: the phrase a criminal lawyer (i.e., who handles cases of crime) is homophonous with, but not comprised of the same grammemes as, the phrase a criminal lawyer (i.e., who has committed crimes) cf. also §7.43).

Another problem lies in the fact that, as an emic unit, a grammeme may have some sub-emic variants (§7.4), which may in part be reflections of sub-emic variants of emic classes of morphemes and hypermorphemes (§7.313(3)). The variation may occur either in the form, or in the structural meaning, or in both of these components. It is clear in Fries' material that there are other "modification" grams, similar to these either in form or in meaning, which I have not mentioned. Are they to be interpreted as the same or as different grammemes? In some instances I am not at all certain; a further study might lead to reasonable certainty on some of these, and to a realization of permanent indeterminacy for others.

It would seem probable that in situations where Class 1 words modify certain other Class 1 words and the structural meanings are 'somewhat diverse', but Fries has 'not been able to find formal features that differentiate the more precise meanings included' in that group of phrases (p. 224 fn. 13), that the variation in the structural meanings is lexically conditioned (note locally-conditioned semantic variants of grammemes, under the influence of neighboring morphemes, in §§7.43, 7.321). That is, the difference in the modification relationship of truck to driver and of milk to delivery and of rug to sale would seem to be conditioned by the particular lexical items involved, in the phrases a truck driver, the milk delivery, and a rug sale.

It seems possible, however, that separate grammemes should be postulated for the grams manifested by purified and purifying in the phrases the purified water and the purifying water since there are 'formal characteristics

within the "modification" structure' which 'provide significant contrasts to distinguish certain of the meanings that attach to the "modifier" relation' (p. 219). The formal indication in the word purified is the presence of one of the members of 'Class 2-d'--i.e., a word from 'Class 2' such as remember, want, see, purchase, plus 'the -ed form (the so-called past participle)' (p. 220). The formal indication in the word purifying is the presence of a word of the same group (Class 2) plus the -ing form. The semantic component of the gram manifested by purified is 'indication that the following modified item is the undergoer'; the semantic component of the gram manifested by purifying is 'indication that the following modified item is the performer.' This composite form-meaning difference would seem to indicate that the two grams are separate gramemes.

It is possible, however, that in this instance someone would choose to argue that the manifesting classes are the same, in that they are merely subclasses of the larger emic class labelled Class 2, and that therefore the semantic difference is no more than a subgramemic variation conditioned by this subclass occurrence. Now we should recall that in the instance of morphs which differed both by form and by meaning, or which differed by meaning alone, we assumed that they constituted different morphemes if their meanings were sufficiently different; the use of the word 'sufficiently' however, left an area of indeterminacy (§6.44). Likewise, we indicated the same problem for grams in §7.321. Here, it appears to me that the difference of meaning is sufficiently great, coupled with the formal difference, to justify analyzing them as separate gramemes within a single distribution class of gramemes.

In some instances, the Class 1 word being modified is derived from a Class 2 word, as student from study, denial from deny. When such a word is modified by a Class 3 word which has a contrasting form with a Class 4 word (as continuous contrasts with continuously, rapid with rapidly), 'the meaning in the modification is not that of "quality of substance" but rather "manner of action"' (p. 222), as in a continuous worker (who works continuously) or a flat denial (where a person denies flatly). In this data, it seems to me that no new gramemes are involved, but that the meaning of 'quality of action' instead of 'quality of substance' is conditioned by the lexical subclass of the following Class 1 manifestations, rather than being a component of a contrasting grameme.

If, however, the various "modifiers" are in fact comprised of a distribution class of gramemes, is there any justification left for the vague title given to them as a group? Possibly so, though such a grouping might need structural refinement, or some subdivision. Note, for example, that morphemes also come in distribution classes, and that such a class may sometimes have--but does not necessarily have--a detectable class meaning (§7.313(1)). The meaning of an emic class of morphemes, furthermore, may be vague, or inconsistent, but in the latter event it continues to function as one of the components of response-behavior elicited within the culture, even though it "logically" is inconsistent, or is applied to some of the morpheme-class members with which it is in obvious lexically-semantic clash. It should not surprise us unduly, therefore, once we have established the presence of a distribution class of gramemes, to find that this total set of gramemes, as a whole, has a very high-layered and vague but none-the-less effective impact on the activity of a culture. In Fries' terms, we might say that such a component is no more than 'connection' of a type which is in structural contrast with other connective patterns; i.e., '"Modification" is a structure of connection, but it is a connection of a particular kind' (p. 207). Or a phrase which he uses in describing the meaning of "direct object" might be suitably rephrased to serve as a model for describing the meaning of some "modifiers": 'The meaning of "undergoes the action" in this kind of object includes everything that is linguistically grasped in the pattern of "undergoer." From a practical point of view there may be no actual "receiving" or "undergoing" of any action' (p. 184; note that Fries seems to handle the kinds of inconsistencies which we mentioned, above, in the phrase 'From a practical point of view...').

If, now, we ask where the impact of such a semantic component of a distribution class of gramemes can be seen in our English-speaking culture, I suspect that the best answer is this: It can be seen precisely in the fact that in the history of the development of the study of English grammar, many persons have reacted to some kind of unity in the undifferentiated or partially differentiated grammemic members of that class, and this reaction took the form of developing the label "modifier." More direct evidence from non-analytical or non-hypostasic data is more difficult to find, but might be found by procedure similar to those which would indicate that native speakers of English react to words such as (the) fire as if it were an object instead of a process, as indicated by the fact that they may show surprise when it is pointed out to them that some of these words represent processes rather than objects.

Without attempting to discuss in detail the nature of the evidence, we might suggest a third possible emic distribution class of gramemes and hypergramemes in English, in addition to the one comprised of "subjects" and the one comprised of some "modifiers." This third grammemic-hypergrammemic class would be comprised of "predicates." It is precisely the fact

that predicates are not uniformly comprised of a single grameme which forced Fries, I think, to utilize three separate 'minimum free utterance test frames that formed the basis' of his examination of English structure (pp. 75, 80-82). 'Frame A' was illustrated by the sentence The concert was good (always); 'Frame B' by the sentence The clerk remembered the tax (suddenly); 'Frame C' by The team went there. The various items which here enter his 'Class 2' form 'subgroupings of these words' of that class. The structural evidence for separate predicate grammemes or hypergrammemes is in part constituted of the distinctions between these subgroups of morpheme-hypermorpheme classes which manifest the grammemes under discussion. The evidence for uniting these grammemes into a single larger distribution class of grammemes or hypergrammemes is in part the kind of data which led Fries to group together these manifesting subclasses of words into his Class 2, which contains not only is, was, are, seem, become, but also remembered, saw, signed, and likewise went, came, ran, started, talked.

If one finds it useful to analyze subjects, modifiers, and predicates as comprising distribution classes of grammemes, it would seem likely that further distribution classes of grammemes would also appear in a more extended study of such matters. The sum of all such emic distribution classes of grammemes of a language, within a single componential system of behavioremes, would constitute a COMPONENTIAL SYSTEM OF CLASSES OF GRAMEMES. Two such componential systems from two congruent styles would constitute a single hypercongruent class of grammemes or of grameme classes. The distribution classes of grammemes within a formal style, for example, would be congruent with--and in many respects identical with--or supplemental to the distribution classes of grammemes in a less formal style; for some sample etic differences in the physical position of etic spots, or the membership of morpheme distribution classes, note Away ran John (§§7.321, 7.46), -est of knowest (§§6.7, 7.46).

In general, two componential systems of distribution classes of motifemic-spot-class correlatives are distinct the one from the other, even though simultaneously manifested in a behavioreme. Thus, separate motifemic-spot-class correlatives of verbal and nonverbal types may be simultaneously present in the church service (§3), the football game (§4), or the breakfast scene (§5). Nevertheless, there is some indeterminacy between them, and some overlapping, in that some one motifemic-spot-class correlative may be manifested optionally by morphemes or by nonverbal motifs, or by a composite of verbal-nonverbal motifs. It was precisely at this point that we begin the volume in Chapter 1. In that chapter, the gesture song as a game was specifically built upon the possibility of substituting, for party purposes, nonverbal for verbal units in the artificial motifemic-spot-class situations (§1.1). A bit later in that same chapter (§1.3) a non-artificial situation entailed the possibility of substituting a shake of the head for the verbal no, a nod for yes, etc., and illustrated again the fact that there are emic distribution classes of behavior units which are of a composite verbal and nonverbal type; here, also, there is interpenetration or overlapping or indeterminacy between the verbal and nonverbal systems of emic spot-class correlatives.

7.7 Grametics

A verbal etic motif-spot-class-correlative is a gram (7.1), with numerous characteristics which allow for its identification or for its contrast with another gram. In this section we wish to bring together a listing of a number of these characteristics, many of which have already been discussed and illustrated, and to give a brief indication of the way in which grams may be discovered and analyzed grammemically.

7.71 Segmentation of a Continuum into Grams

In §§5.51 and 6.81 we discussed briefly the manner in which a continuum of speech could be segmented into utterances and morphs. A similar problem must be met in the segmentation of a continuum into a sequence of manifested grams. Since, however, the borders of morphs coincide with the borders of grams (§§6.66, 7.56), except that an expanded gram may contain several included morphs (§§7.44, 7.54), the problems of gram segmentation are in part reciprocal with morph segmentation: every morph boundary will simultaneously be a boundary of a gram of some type, whether included within another gram, or not so included.

In addition, however, for gram segmentation it is necessary to make initial judgments as to substitutability, since borders of segments are here relative to borders of substituted items. Two homologous items are members of the same gram and are substitutable (§7.321). Judgments must therefore be made as to whether two items are or are not homologous, with tests of expandability, etc., for checking on the accuracy of these initial judgments (§7.322).

A further problem of gram segmentation arises that is of a type which does not affect morphetics or morphemics as severely: a minimum gram must have among its manifestations at least some which are comprised of single morphs, but others of its manifestations may be comprised of morph sequences for which each included morph simultaneously manifests an included gram (cf. §§5.3, 7.44). The fact that a gram, the minimum etic unit of the distribution

mode of an utterance type, can have nonminimum variants, increases the analytical difficulty; homologousness must be judged for a pair of morph sequences, or for a morph sequence and a morph, in terms of the function of such items relative to the remainder of the utterance in which it occurs. Thus one must judge not only whether one morph substitutes for another in a sequence--which is relatively simple--but whether a morph sequence substitutes for a single morph, which is sometimes a judgment very difficult to make and to test.

The initial margin of error in such grametic segmentation may be larger than in morphetic analysis. Here, as there, the theory does not lead to error-proof initial procedures, but rather provides for an initial start in grametics which is a first approximation, and for further procedures which lead to a grammemic analysis which eliminates many of these errors, while leaving a margin of indeterminacy.

7.72 Etic Classificatory Criteria for Gram Types

In §§5.52 and 6.64 we listed some criteria for classifying etically various kinds of utterances and morphs. Similarly, we can summarize here a number of the kinds of grametic criteria which have appeared directly or by implication in earlier pages of this volume, or which are of comparable types.

First we list criteria which permit the analyst to classify grams in accordance with class characteristics of their manifestation mode:

(a) Is the class which manifests the gram comprised of single morphs only? or of morph sequences? of single morphemes only? or of morphemes and hypermorphemes as well? (§7.44)

(b) Is this manifesting class comprised of segmental morphs? or of morphs manifested by pitch, stress and length only? or by a phonological process of some kind? or by some combination of these? (§§6.64, 7.74)

(c) Are some or all of the members of this class phonologically modified under certain phonemic, morphemic, grammemic, or systemic conditions? or lexically modified under some such conditions, so that the class membership varies under these conditions? or in grametic concord? or semantically conditioned? (§§7.43, 7.45, 7.46, 7.53) Must the manifesting member of this class have the same referent as the manifesting member of a class manifesting another gram in the same utterance? or does it correlate in some other way? (§7.53)

(d) Is the manifesting class relatively large? small? (§§6.83, 7.313(1))

(e) Is the class limited to occurrence in this gram? if not, where else does it occur? or is it a subclass of a larger class? (§§6.83, 7.313(2-3), 7.313(4), 7.74)

(f) Is there a class meaning detectable within many members of the class? and is it separable from the structural meaning of the grametic spot in which it occurs? (§§7.313(1), 7.324) Is the class meaning, if any, that of action? object? quality? quantity? substance? state? process? person? tense? aspect? gender? number? case? connection? manner? degree? identification? negation? exclamation? imitation? relationship? (cf. §6.82(e-f))

(g) Are the members of the manifesting class active? passive? semi-active? (§§6.61, 6.62, 6.92, 7.51)

Secondly, we list criteria which have relevance to grametic spots (or "slots") as a component of the gram:

(h) In what physical order does the gram come in reference to other grams? Is this order fixed, or is it freely variable with other orders? (§§7.321, 7.42)

(i) Is this grametic spot manifested only by minimum variants or by minimum and by expanded ones? (§§7.44, 7.54)

(j) Is this grametic spot obligatory to the higher-layered grametic or hypergrametic unit in which it is occurring? or optional? (§§7.44, 7.54, 11)

(k) In relation to the gram or hypergram with which it is most closely associated structurally is it subordinate (marginal, satellitic, affixual)? head (nuclear, central, stem)? coordinate?

(l) Is the grametic spot an active one? passive? semi-active? (§§7.51, 6.61, 6.62, 6.92, 7.56, 6.66.)

(m) Can it constitute the only gram in an utterance? (cf. §6.3)

(n) Is it related in occurrence to the occurrence of pause, intonation, or other phonological events? (cf. §§7.746, 15)

(o) Is there a grametic structural meaning detectable within some or all of the manifestations of the gram? and is this meaning separable from the meaning of the class manifesting it? or from the morpheme(s) which in turn constitute the manifestation of the class? (§§7.321-324) Is this meaning--if any--that of performer of an action as constituting the subject of an utterance? recipient as subject? identified item as subject? other relation as subject? goal of an action as object of an utterance? indirect object? agent? object complement? identified item as a predicate nominative? or as in apposition with some other item? transitive action? intransitive action? a relating action, or state, or affirmation? or impersonal action? a direct or indirect question indicator? quotation types? formality or informality indicator? quality? quantity? substance? connection? exclamation? specified position, time, degree or other relation? or gender, number, person, tense, aspect, case, direction, instrument, emphasis, formality, mood, emotional flavor, command, negation, etc.? (cf. §§5.53, 6.82(e-f), 7.321, 7.6, 11.)

7.73 Etic Classificatory Criteria for Grams in Reference to Their Distribution Classes

We have seen that grammemes may occur in distribution classes (§§7.6, 7.52), and we now list a few of the criteria for distribution classes of grams as we previously did for distribution classes of utterances (§5.54) and for distribution classes of morphs (§6.83):

(a) Do the grams in this distribution class of grams all occur within a single style or system? (§§5.4, 6.7, 7.313(4), 7.46, 7.6)

(b) Is the class of grams comprised of several grams? or of only two or three? or is it a unique member of the class? (§7.6)

(c) Do each of these grams have the same manifesting morphemic or morphemic-hypermorphemic class (i.e., are they homophonous)? or are they manifested by different morphemic classes? (§7.742-746)

(d) Do each of the grams in such a class have similar rules of agreement concord--if any --with other grams in the same utterance? (§7.53)

(e) Do the grams of this distribution class of grams occur in only one sentence type (one utterememe) or in several? (§7.6)

(f) Do each of the grams of this class occur in the same utteremes, or do some of them occur in certain utteremes which do not permit one or more of the others? (§§7.52, 7.6)

(g) Is there a distribution-class structural meaning--even though vague--which may be detected in a number of the occurrences of the members of this class? If so, what is it? subject? object? modifier? action? relator? or other? (§7.6)

7.74 Utteremic-Grammemic Formulas Following Grametic Analysis

7.741 Summary of the Relation of Grams to Grammemes

In order to pass from a prestructural, etic description of the minimum units of the distribution mode of utterances to an emic description of these minimum units, an emic procedure is necessary, and etic training is highly desirable, as it is for utteretics (§5.55) and for morphetics (§6.84). The same general kinds of principles are applicable here, as there.

Every gram may be assumed to comprise: either

(a) a free variant of a grammeme (§7.42)

or (b) a conditioned variant of a grammeme (§§7.43, 7.46)

or (c) part of a grametically-complex variant of a grammeme or of one of its manifested forms (§7.44)

or (d) a sequence of two or more manifested variants of grammemes, so that the tentative gram needs further segmentation (§7.71)

or (e) a fused composite variant of two or more partially simultaneous or completely simultaneous grammemes (§7.45)

or (f) an error of grametic analysis which would be eliminated after further study;

and (g) the grammemes comprised of these grams are members of emic distribution classes of grammemes (§7.6) within the larger system of the language as a whole, which in part they reciprocally constitute.

Once the grams have been studied and reinterpreted grammemically in these respects by the appropriate techniques (§22), the utteremes of a language can then be described in grammemic terms. In order to give an abbreviated view of the manner in which such a description can be presented, we return to the artificial language materials which were used in §7.313(4). The total analysis of these artificial languages cannot be given here, however, since the mechanism for describing hypermorphemes, hypergrammemes, phonemes, hyperphonemes and the interpenetration of modal units, awaits further theoretical development in Chapters 9-11, 15, and procedural suggestions in Chapter 22, with special problems in further chapters. Nevertheless, some additional characteristics of these "languagettes" can now be profitably discussed.

7.742 Utteremic-Grammemic Formulas for Languagette A

If the reader will refer back to the artificial data illustrating Schematic Class-Type A in §7.313(4), p. 111a he may note that there are various alternate utteremic analyses which may be given of this data. In order to determine which is preferable, more data, and longer contexts, would be necessary.

For our purposes we present first the tentative solution suggested by means of the following utteremic-grammemic formulas:

Languagette A:

Uttereme I ('affirmation concerning an item'):

Minimum, obligatory form:

$$+ S^{W}$$

Maximum expanded form:

$$+ (\pm [\pm M^{W} + A^{W}] + S^{W})$$

Utteremes: In this formula the only uttereme present is seen first in minimum and then in expanded form. It is definable in terms of its obligatory grammemes, its potential expansions, its actual manifesting utterances, and its structural meaning. Its distribution in hyperutteremes would be part of the definition if the data had been supplied.

Grammemes: Only one grammeme, symbolized as S^{W}, is obligatory to this uttereme. It is

comprised (1) of a grammemic spot (or "slot") (a) which has the structural meaning of 'item concerning which an affirmation is made', (b) occurring in Uttereme I in physical sequence after an action grammeme, if any such is present in the manifested uttereme; the grammeme is also comprised (2) of the manifesting class ^{W} which fills the grammemic spot just mentioned. As an illustration of this minimum manifestation of the uttereme, note the utterance los 'It is smoke'.

In the expanded manifestations of Uttereme I, two further included grammemes may occur. One of these, A^{W}, is manifested by and in part comprised of the same word class ^{W}--but with the morphemic meaning, of members of the class, modified (conditioned) by the meaning of the included grammemic spot in which they are occurring (see §7.313(4)). The grammemic spot which constitutes its other component has the structural meaning of 'activity going on' and in physical sequence precedes the grammeme S^{W} in that uttereme. Note losmif 'The ball is smoking.' This included grammeme A^{W}, furthermore, may be optionally expanded by the included grammeme M^{W} which (1) is manifested by the morphemic class ^{W}, with its membership semantically conditioned by the grammemic spot it is filling, and (2) has a grammemic spot with structural meaning of 'modification of activity' and a sequential order preceding the activity grammeme. Note losmifkap 'His eyes roam darkly'.

The brackets in the expanded utteremic formula enclose the grammeme A^{W} expanded by the optional addition of the included grammeme M^{W}.

Morphemic classes: The one emic morpheme class in Languagette A is comprised of the items los, mif, and kap (cf. §7.313(4)); this emic class is in turn comprised of several etic classes of the same membership, but with their lexical meanings affected by the grammemic meaning. The symbol used here to label the emic class is ^{W}. An alternate symbol type--more useful under some circumstances--is the symbolization of the entire class by placing one of their members in pointed brackets, thus: <los>*; the same grammemic formula would then read: $S^{<los>}$. The definition of this emic class includes not only its membership and etic semantic variants but its distribution in the grammemes S^{W}, M^{W}, and A^{W} of Uttereme I,

Each of the specific utterances of two or more morphemes constitutes a separate hypermorpheme; e.g., losmif 'The ball is smoking', and miflos 'The smoke is rolling' constitute two hypermorphemes manifesting the same uttereme. Each specific sequence of two morphemes manifesting the included but expanded grammeme $[\pm M^{W} + A^{W}]$ constitutes a member of a class of such included hypermorphemes; e.g., losmif is an included hypermorpheme in the uttermic manifestation losmifkap 'His eyes roam darkly'. (No hypergrammeme occurs in this particular analysis of Languagette A, however, since no sequence of two obligatory grammemes occurs.)

The preceding analysis of Languagette A was based on the assumption that $\pm A^{W} + S^{W}$ is here an expansion of $+ S^{W}$. This assumption could only be substantiated or refuted by observing such items in larger contexts, to see if in a spot in hyper-utteremes these two utterances were homologous (sustaining the analysis above) or not homologous (refuting the analysis above). If the items proved to be not homologous, the analysis of Languagette A would then have to be reworked into two utteremes, as follows:

Languagette A, alternative analysis:
Uttereme I ('identification of an item'):
Minimum and Maximum: $+ S^{W}$
Uttereme II ('activity affirmed concerning an item'):
Minimum: $+ A^{W} + S^{W}$
Maximum: $+ (\pm M^{W} + A^{W}) + S^{W}$

In this analysis, Languagette A, though having the same number of grammemes as in the preceding analysis, has an extra uttereme, so that grammemic definition must be reworked to mention the distribution of grammeme S^{W} in each of these utteremes. Only one emic class of morphemes appears in the solution, as before, and it is related in distribution to the same grammemes. The hypermorphemes remain unaffected. On the other hand, Uttereme II now is in part comprised of a hypergrammeme, $(+ A^{W} + S^{W})$, because, in this alternate analysis, two obligatory grammemes are involved.

The possibility of this kind of an alternate analysis emphasizes once again the necessity for working with units larger than the sentence, and for checking homologousness within the structure of such hyper-utterances; no mere distributional study of morphemes as such is adequate without ultimate reference to such larger structures. In Languagette C, such data is provided as part of the problem.

7.743 Utteremic-Grammemic Formulas for Languagette B

For the languagette illustrating Schematic Class-Type B, see data and discussion of its class types in §7.313(4), p. 112a; utteremic-grammemic formulas for it might be as follows:

Languagette B:
Uttereme I ('affirmation of the activity of an item'):
Minimum, obligatory form: $+ S^{N} + A^{V}$
Maximum: $+ S^{N} + (\pm M^{V} + A^{V})$

*Following Pittman, 1954. The formula is to be interpreted to read 'the class of which los is a member.' If two emic classes contain some of the same members, the choice of the illustrative morpheme must be such as to lessen the possible ambiguity.

In general, the description of this languagette can be handled in a way comparable to that for Languagette A. Note, however, that here ^{N} and ^{V} symbolize two emically-distinct classes (with membership listed in §7.313(4)), which may be conveniently labelled as 'noun' and 'verb'.

Three grammemes are present--S^{N}, A^{V}, and the included grammeme M^{V}; A^{V} has an expansion to $(\pm\ M^{V} + A^{V})$.

The minimum utteremic manifestation is hypergrammemic.

Note, as illustrating the minimum variant of this uttereme, the utterance somlok 'The boy spoke'. For an expanded variant, note sommislok 'The boy spoke haltingly'.

7.744 Utteremic-Grammemic Formulas for Languagette A′

For the languagette illustrating Schematic Class-Type A′, see data in §7.313(4), p. 112b-113a and note the following formulas:

Languagette A′:

Uttereme I ('affirmation of state'):

Minimum: $+\ StI^{P} + St^{W}$

Maximum: $+\ StI^{P} + (+\ St^{W} \pm M^{W})$

Uttereme II ('affirmation of the activity of an item'):

Minimum: $\overset{+}{\underset{+}{\longleftarrow\!\!/\!\!\longrightarrow}}\ P^{(+\ AI^{\underline{em}} + A^{W})}\ S^{(+\ StI^{\underline{sa}} + St^{W})}$

Maximum: $\overset{+}{\underset{+}{\longleftarrow\!\!/\!\!\longrightarrow}}\ P^{(+\ AI^{\underline{em}} + [+\ A^{W} \pm M^{W}])}\ S^{(+\ StI^{\underline{sa}} + [+\ St^{W} \pm M^{W}])}$

For the analysis implied by these formulas we have assumed that Utteremes I and II are not homologous in large hyper-utteremes: we assume that they would occur in some different spots or in different uttereme sequences in such larger structures.

A number of elements in these formulas need to be explained, since they have not been described in the discussion of the preceding languagettes. In the minimum formula for Uttereme I, for example, StI means 'state indicator', with ^{P} meaning emic 'particle class' comprised of em and sa; St is 'spot for functional state (as a thing or as an abstracted activity)', and ^{W} is the 'full word' emic class which may fill that spot. For an example of this uttereme, manifested, note emkol 'A state of learning is present' or 'They are learning'.

In Uttereme II, the 'action indicator' grameme $AI^{\underline{em}}$ differs from the 'generalized state indicator' gramame StI^{P} of Uttereme I in that the only member of the particle class which can fill that spot is em; em therefore is a subclass of ^{P}; and AI is an 'activity indicator' grammemic spot. Similarly, the grameme $StI^{\underline{sa}}$ is comprised of the grammemic spot 'specific-state indicator' plus the manifesting class sa which is a different subclass of ^{P} from that represented by the subclass em.

In addition, $P^{(+\ AI^{\underline{em}} + A^{W})}$ is a hypergrameme with a hypergrammemic meaning of 'performance', and is manifested by the two obligatory grammemes $AI^{\underline{em}}$ and A^{W}; similarly, $S^{(+\ StI^{\underline{sa}} + St^{W})}$ is a hypergrameme meaning 'subject of performance', manifested by the two grammemes $StI^{\underline{sa}}$ and St^{W}.

The arrows pointing to the "+" symbol before each of the hypergrammemes, with the slant line cutting the line connecting the arrows, here symbolizes the fact that there is free variation in the physical order in which these two hypergrammemes may occur relative to one another.

As an example of Uttereme II, manifested, note empavsakol 'an item or state in which scholarly activity occurs is serving as the subject of an activity in which the state is one of playfulness', or 'The scholars are playing'.

7.745 Utteremic-Grammemic Formulas for Languagette B′

For the languagette illustrating Schematic Class-Type B′, see data in §7.313(4), p. 113b, and note the following formulas:

Languagette B′:

Uttereme I ('affirmation of the activity of an actor'):

Minimum: $+\ S^{N} + A^{V}$

Maximum: $+\ S^{N} + (+\ A^{V} \pm G^{N})$

Uttereme II ('negation of an affirmation of the activity of an actor'):

Minimum and Maximum: $+\ Aff^{U\text{-}I} + Neg^{\underline{top}}$

Uttereme III ('query as to the presence of the activity of an actor'):

Minimum: $+\ Aff^{U\text{-}I} + Q^{\underline{kil}}$

Maximum: $+(+\ Aff^{U\text{-}I} \pm Neg^{\underline{top}}) + Q^{\underline{kil}}$

In these formulas, grammemic items different from the kind illustrated in the discussion of Languagettes A, B, and A′ include the 'negative' and 'question' grammemes $Neg^{\underline{top}}$ and $Q^{\underline{kil}}$ (each manifested by a morpheme class comprised of a single morpheme each) and the 'goal' grameme G^{N}. Note, for example, the minimum Uttereme I

illustrated by manatesu 'Lady clothes-makes', i.e., 'The lady makes clothes'; compare manatesufukos 'The lady makes dresses for a friend', in which the included grameme G^N occurs.

For Uttereme II the symbol U-I indicates 'any manifested form of Uttereme I', and Aff implies an affirmative utterance spot.

Hence Aff^{U-I} is a hypergrammemic symbol because of the obligatory two-grameme nature of the first uttereme which here serves as the manifestation of an included grameme in Uttereme II. Note manatesukititop 'The lady does not make suits for the man'.

Uttereme III is similar to Uttereme II in that Uttereme I is included within it: manatesukitikil 'Does the lady make suits for the man?'

Three utteremes are postulated for Languagette B′, under the assumption that the three would not be quite homologous in the spots in a large hyper-uttereme; note that the negative type, in this data, seems only to precede a query of some kind. If, however, a larger body of material were to show that all of these sentences could in fact come as manifesting any of the major spots in a conversation, then the solution would require a single uttereme, instead of three, as follows:

Languagette B′, Alternate Analysis:

Uttereme I ('query or negation or affirmation of the activity of an actor'):

Minimum: $+ S^N + A^V$

Maximum: $+ (+ S^N + [A^V \pm G^N]) \pm Neg^{top} \pm Q^{kil}$

In both Languagette A and in Languagette B′ there appeared the need of hyper-utteremic data. Some of this has been supplied for Languagette C.

7.746 Utteremic-Grammemic Formulas for Languagette C

We turn now to a partial analysis of the data of Languagette C which were presented as an illustration of Schematic Class-Type C, §7.313(4), p. 115.

We are pretending that the data of Stages A-C were gathered by a linguist asking in one language for the general translation equivalent in Languagette C, by using some such query as 'How do you say...'. A linguist of more extensive training than the one we are assuming here might have started differently, merely by recording utterances which he overheard in the course of a day's activities--but this would have necessitated, in order to get a sufficiently large number of forms partly alike and partly different, a much larger body of material than it would have been feasible to publish for this illustration, and much more experience before attempting the task with any hope of efficient, rapid work being done. Stage D represents a story which the native speaker is assumed to have told to the linguist.

We shall not present here the full but tentative analysis of each stage of these data, because of limitations of space, nor shall we indicate all of the phonetic-phonemic or morphetic-morphemic elements which are relevant to their analysis, since our purpose here is rather to set forth the gramemic elements entering into utteremic formulas. A few comments, however, will be made concerning some of the problems which arise in a stage-by-stage analysis of a language.

In Stage A, for example, most of the phonetic data seem quite simple, with the phones [p,t,k; m; f,s; i,u,o,a]. The hyperphonetic segments include open and closed syllables of patterns CV, CCV, and CVC; abdominal pulses (stress groups) have stress on the second syllable of the group; breath groups are comprised of one or two stress groups. The only complication which is likely to bother the beginning student is the long [t·] interrupted by syllable division, in [sti. 'fo.mit.· i.pa↘‖], Utterance No. 7.

The morphetics of Stage A is much more difficult. Students in the class room frequently try to segment Utterance No. 1 into to 'food', sa 'hot', mik 'is'--an analysis biased by the here-irrelevant syllable division, by the accidental fact that ku 'hot' has a morphetic shape-type CV which, they seem to feel, 'ought' to be reflected in the word for 'good' which contains at least the sounds [sa]. A further morphetic start by them often treats the m of tipam (Utterance No. 5) as a 'locative', meaning 'on', because of the translation 'on the fire', but with the m of tomim from that same utterance as constituting a morph meaning 'is in process'. The analysis of some of the morphs of Utterances 7-9 is likely to be quite uncertain at this stage.

The utteremic and gramemic guesses at Stage A are sharply in need of revision at later stages, if the morphetic guesses are those just indicated, since the analysis of the one affects the other.

During the analysis of Stage B, the student, while revising his phonetic analysis, adds the phone [l], and may reach the phonemic conclusion--if he has not done so earlier--that a phonetically-long consonant is phonemically a sequence of two like consonant phonemes. This conclusion either aids and supports the morphetic analysis of tipa in No. 7, and of mit in Nos. 15-17, or the morphetic identification of the latter helps the student to arrive at the phonemic hypothesis to be checked distributionally.

In Stage B, also, he may need to have it called to his attention that the descriptive statement of the structure of stress groups can be retained as in Stage A (with every stress group stressed on the second emic syllable), only if the

syllabic [m] of Nos. 15-17 is treated as an etic syllable which with the etic syllable preceding it constitutes a single etically-complex emic syllable.

Morphetically, in Stage B, there is likely to come the most important insight needed for the appreciation of the morpheme structure of this languagette. By observing ksa in No. 11, part of the erroneous analysis of sa of No. 1 may be corrected; if in Stage B the student arrives at the conclusions suggested in the last paragraph concerning the syllable, then the way is open for him to see that in No. 1 the morph tomi is 'food'--and to eliminate any "copula" from his utteremic pattern, since no morphetic material remains there to manifest such a morpheme. Further, the repeated occurrences of mit in Nos. 10-18 force the student to try to identify that morph in relation to the various translation meanings of 'man', 'old man' (where no specific morph of shape-type CV or larger, for 'old', can be found), 'dead' (where a similar problem arises), 'living', and even for 'children'. For this reason he reconsiders the meanings of m and s, and may hypothecate that the two m morphs of No. 5 were in fact occurrences of the same morpheme.

Provided that he reaches this conclusion in Stage B, the entire utteremic-grammemic structure earlier postulated by him will now undergo complete revision. Whereas he may in Stage A have treated tipa in Nos. 5-6 as a 'verb', homophonous with tipa as a noun in No. 3, he may now begin to see that in this languagette there occur affirmation sentence types without "verbs", as well as one in which verbs do occur. The formularization of these utteremic types should lead to a major break through in understanding the structure of the language.

In Stage C, hypotheses set up in Stage B can be checked, on new data, and gaps in the pattern filled in. Items 20-21 lack some phonological data, but since no evidence has appeared to show contradiction to the tentatively-suggested breath-group structure, it is assumed that these two would follow that pattern. Here, too, it can be seen that there is some correlation between the grammatical structure and the ending of a stress group within a breath group.

Stage D, by adding narrative material, allows some new kinds of data. A 'tentative' breath group contrasts with the 'final' type seen in earlier stages. New sentence types appear, in the more complex situation, and the narrative, as a whole, itself shows a hyper-utteremic structuring.

We are now ready to suggest certain formulas which will show some characteristics of an utteremic-grammemic analysis of this material, but with a minimum of reference to the phonological data.

Languagette C (data on p. 115):

Uttereme I ('affirmation of quality'):

Minimum: + $\text{Item}^{\text{Noun}}$ + $\text{Quality}^{\text{Adjective}}$ ↘‖

Maximum: + $\text{Item}^{\text{Noun}}$(+ $\text{Item}^{\text{noun}}$ ± pl.$\{\underline{\text{suf}}\}$)

+ $\text{Qual.}^{\text{Adj.}}$↘‖

(See Utterances 1-4, 22; and text of Stage D.)

Uttereme II ('affirmation of state'):

Minimum: + $\text{State}^{\text{Noun}_2}$(+ $\text{Item}^{\text{noun}}$ + $\text{asp.}^{\text{asp.}}$)

+ $\text{Item}^{\text{noun}}$↘‖

Maximum: + $\text{State}^{\text{Noun}_2}$(+ $\text{Item}^{\text{noun}}$ + $\text{asp.}^{\text{asp.}}$)

+ $\text{Item}^{\text{Noun}}$(+ $\text{Item}^{\text{noun}}$ ± pl.$\{\underline{\text{suf}}\}$ ± $\text{asp.}^{\text{asp.}}$)↘‖

(See Utterances 15, 5, 16-18, 23-25; and text of Stage D.)

Uttereme III ('affirmation of action'):

Assumed Minimum:

+ $\text{Action}^{\text{Verb}}$(+ $\text{Action}^{\text{verb}}$ + $\text{tense}^{\text{ten.}}$)

+ $\text{Actor}^{\text{noun}}$↘‖

Assumed Maximum:

+ (± $\text{Qual.}^{\text{Adj.}}$ + $\text{Action}^{\text{Verb}}$[± $\text{Action}^{\text{verb-r.}}$ + $\text{Action}^{\text{verb}}$ + $\text{ten.}^{\text{ten.}}$])↘ +

(± $\text{Qual.}^{\text{Adj.}}$ + $\text{Actor}^{\text{Noun}}$[+ $\text{Actor}^{\text{noun}}$ ± pl.$\{\underline{\text{suf}}\}$ ± $\text{asp.}^{\text{asp.}}$]) ±

(± $\text{Qual.}^{\text{Adj.}}$ + $\text{Goal}^{\text{Noun}}$[+ $\text{Goal}^{\text{noun}}$ ± pl.$\{\underline{\text{suf}}\}$ ± $\text{asp.}^{\text{asp.}}$])↘‖

(See Utterances 7-11, 13-14, 19-21, 26-29, and text of Stage D.)

Uttereme IV ('query of affirmation of quality or of action'):

Minimum-Maximum: + $\text{Aff.}^{\text{U-I/U-III}}$ + $\text{Ques.}^{\underline{\text{nos}}}$↘‖

(See text of Stage D, for samples.)

Uttereme V ('quoted affirmation or query'):

Minimum-Maximum: + $\text{Aff.}^{\text{U-I/U-III/U-IV}}$↘|

+ $\text{Quote}^{\text{U-II}}$↘‖

(See text of Stage D, for samples.)

Uttereme VI ('calling affirmation or query'):

Minimum-Maximum:

+ $\text{Call}^{\text{Noun}_2}$(+ $\text{Item}^{\text{noun}}$ + $\text{asp.}^{\text{asp.}}$)↘| +

$\text{Aff.}^{\text{U-II/U-IV (and others?)}}$↘‖

(See text of Stage D, for samples.)

Hyper-Uttereme I ('a story-telling episode'):

$$+ \text{Intro.}^{\text{U-II}} + \text{Narr.}^{\text{U-III}}$$
$$+ \text{Sequence}^{\text{U-I/U-II/U-III/U-IV/U-V/U-VI}} +$$
$$\ldots + \text{Concl.}^{\text{U-II}} \backslash \|$$

(Note: The analysis here is to a considerable extent an etic guess, and incomplete; more complete stories in the same emic pattern are needed if one wishes to explore the limits of substitution in such a pattern.)

From these utteremic formulas we now abstract certain grammemic data:

List of unincluded grammemes and of included grammemes:

Item$^{\text{noun}}$ (in which the 'noun' spelled with lower-case "n" implies the single-morpheme stem); occurs obligatorily in U-I, in U-II (as a grameme by itself, and as included in the 'state' hypergrameme), and in included occurrences of these utteremes. The expanded form is symbolized as Item$^{\text{Noun}}$ since in the formulas this symbol represents any manifestation of the grameme, whether expanded or unexpanded;

plural$^{\{\underline{\text{suf}}\}}$; occurs, optionally, only as included in an expanded form of Item$^{\text{Noun}}$, Actor$^{\text{Noun}}$, or of Goal$^{\text{Noun}}$;

aspect$^{\text{asp.}}$; occurs, optionally, as an expansion included within Item$^{\text{Noun}}$, Actor$^{\text{Noun}}$, or Goal$^{\text{Noun}}$; or obligatorily as a grameme included with the hypergrameme State$^{\text{Noun2}}$;

Actor$^{\text{noun}}$; occurs, obligatorily, unexpanded, or occurs expanded (symbolized as Actor$^{\text{Noun}}$) by plural$^{\{\underline{\text{suf}}\}}$ or aspect$^{\text{asp.}}$, in unincluded and included U-III;

Goal$^{\text{noun}}$; occurs optionally, unexpanded, or expanded (as Goal$^{\text{Noun}}$) by plural$^{\{\underline{\text{suf}}\}}$ or aspect$^{\text{asp.}}$, in unincluded and included U-III;

Quality$^{\text{Adjective}}$; occurs obligatorily in U-I, but optionally as an expansion of the hypergrameme Action$^{\text{Verb}}$ or of the grammemes Actor$^{\text{Noun}}$ and Goal$^{\text{Noun}}$ of unincluded and included U-III;

Action$^{\text{verb}}$; occurs obligatorily in the hypergrameme Action$^{\text{Verb}}$; or occurs also in that hypergrameme as a reduplicating optional expansion grameme Action$^{\text{verb-r}}$, in unincluded and included U-III;

tense$^{\text{tense}}$; occurs obligatorily in the hypergrameme Action$^{\text{Verb}}$, in unincluded or included U-III;

Question$^{\underline{\text{nos}}}$; occurs obligatorily in unincluded and included U-IV.

A few hypergrammemes may also be listed (their component included grammemes have already been recorded above):

State$^{\text{Noun2}}$ (in which the subscript 2 indicates that this noun structure is different from that recorded as Noun without a subscript numeral; it contains exclusively but obligatorily the included grammemes Item$^{\text{noun}}$ and aspect$^{\text{asp.}}$); occurs obligatorily in unincluded and included U-II;

Action$^{\text{Verb}}$ (comprised obligatorily of close-knit Action$^{\text{verb}}$ and tense$^{\text{tense}}$ grammemes; may be optionally expanded by close-knit Action$^{\text{verb-r}}$ or by loose-knit Qual.$^{\text{Adj.}}$); occurs obligatorily in unincluded and included U-III;

Affirmation$^{\text{U-I/U-II/U-III/U-IV}}$; any of the utteremes may serve as the manifestation of this hypergrammeme when included in an affirmation spot in U-IV, U-V, or U-VI;

Quote$^{\text{U-II}}$; the uttereme U-II may fill a quotation-indicator spot, and with it constitute a hypergrammeme, in U-V;

Call$^{\text{Noun2}}$; this 'call' hypergrammeme is manifested by Noun$_2$, as was the 'state' hypergrammeme; it occurs in U-VI;

Intro.$^{\text{U-II}}$; this 'introduction' hypergrammeme is manifested by Uttereme II, and occurs in the opening spot of Hyper-Uttereme I.

Concl.$^{\text{U-II}}$; a 'concluding' hypergrammeme, manifested by U-II, and occurring as the termination of Hyper-Uttereme I.

Morphemic classes were also symbolized in the utteremic formulas, and may now be listed separately, with a note as to their grammemic and hypergrammemic occurrences:

noun stem: tomi 'food', tipa 'fire', mit 'human being', lil 'life', kap 'berry', fon 'utterance', ski 'I', sil 'you'; manifests the following grammemes: Item$^{\text{noun}}$, Actor$^{\text{noun}}$, Goal$^{\text{noun}}$;

plural suffix: suf ~ uf 'plural' (with allomorphs occurring after vowels and consonants respectively); manifests the grammeme plural$^{\{\underline{\text{suf}}\}}$, only, in the expanded grammemes Item$^{\text{Noun}}$, Actor$^{\text{Noun}}$, Goal$^{\text{Noun}}$;

aspect suffixes: m 'continuative', s 'completive'; manifests the grammeme aspect$^{\text{asp.}}$, only, in the expanded grammemes Actor$^{\text{Noun}}$, Goal$^{\text{Noun}}$ (and possibly--though not occurring in the data, and hence not listed in U-I--in Item$^{\text{Noun}}$);

verb stem: sti 'stir', tupa 'see', tat 'eat'; manifests the grammemes Action$^{\text{verb}}$, and Action$^{\text{verb-r}}$, in the hypergrammeme Action$^{\text{Verb}}$;

tense suffixes: fo ∞ pi 'present' (with occurrence of the allomorphs morphemically conditioned), su 'future', ka ~ a 'past' (with allomorphs occurring after vowels and consonants respectively); manifests the grammeme tense$^{\text{tense}}$, only, in the hypergrammeme Action$^{\text{Verb}}$;

Adjective: ksa 'good', ku 'hot'; manifests the grammeme Qual.$^{\text{Adj.}}$, only, in U-I, and in the phrasally-expanded hypergrammemes Action$^{\text{Verb}}$ and Goal$^{\text{Noun}}$;

Interrogative: nos 'query'; manifests the grameme Ques.$\overline{\text{nos}}$, only, in unincluded or included U-IV.

Certain of the symbols in the utteremic formulas represented classes of hypermorphemes:

Noun$_2$: a class of hypermorphemes comprised of noun stem plus aspectual suffix;

Verb: a class of hypermorphemes comprised of a verb stem, or sequence of two identical verb stems, plus a tense suffix;

U-I, U-II, U-III, U-IV: classes of utterances which, when used as manifestations of spots included in larger utteremes, serve as large hypermorphemes.

One composite class of morphemes and hypermorphemes was also symbolized:

Noun: comprised of noun stem, or of noun stem plus one or two optional suffixes.

It is convenient, in this languagette, to give the label of 'words' to members of the following classes: Adjective, Interrogative, Noun, Noun$_2$, and Verb. (Note that these words are not internally interrupted by a pause, nor by the border of an abdominal pulse, nor by other 'words'; Noun occurs as manifesting numerous grammemes, and hence in numerous positions in the phrase; the grameme manifested by Adjective occurs in various utteremes and in various expanded grammemes.)

7.75 Languagettes for Student Analysis

The student who has worked through the formulas given in the preceding section might like to have available a number of further languagettes,* for his own analysis:

Languagette 1

1. molikilosipami	'The dog bit the cat'
2. takumulusumoli	'The cat scratched the boy'
3. katolusisotaku	'The boy struck the horse'
4. pamitiposikato	'The horse kicked the dog'
5. pamitipositukukato	'The vicious horse kicked the dog'
6. molikilomipami	'The dog is going to bite the cat'
7. katolusimotaku	'The boy is about to strike the horse'

Languagette 2

1. pamsotipo	'One big boat sank'
2. patipo	'A boat sank'
3. pamsovatima	'A big boat sailed away'
4. pamsovati	'What a big boat!'
5. pati	'See the boat!'
6. toti	'Oh, a raft!'
7. pamsosapo	'My big boat sank'
8. paso	'It's my boat!'

Languagette 3

1. at	'They are playing'
2. no	'They are running'
3. si	'They are sleeping'
4. atat	'The playing is good' or 'They are playing happily'
5. atno	'The playing is fast' or 'They are playing fast'
6. noat	'The running is good' or 'They are running well'
7. nosi	'The running is slow'
8. sino	'They are going to sleep quickly'
9. noatat	'The game is a happy running one' or 'They are running well for fun'
10. noatatno	'Running well leads to a fast game'
11. nonono	'Fast running makes a race' or 'It's a fast race'
12. atatatat	'Playing well gives a happy game' or 'The happy game is being played well'
13. atatatsi	'Playing well gives a slow game'
14. atatatno	'Playing well gives a fast game'
15. nonosi	'Running fast makes for sleepiness'

*These languagettes were prepared by Evelyn G. Pike, except for No. 14, which was prepared by Miss Eunice V. Pike, and No. 8, by George Cowan.

Also, with no translation provided:

16. atatsi .....
17. noatnono .....

Translate:

18. ..... 'The running is fast'
19. ..... 'The game is running fast'

Languagette 4

1. bade 'Boy'
2. men 'Fine'
3. gumo 'House'
4. minu 'See something'
5. sab 'Much'
6. sena 'Was built'
7. bademinu 'The boy sees something'
8. badezabeminuzabu 'The big boy sees something frequently'
9. sabbade 'The boy is large'
10. sabmenebade 'The nice boy is large'
11. sengumo 'The house was built'
12. menzenmenogumo 'The nice house was well built'
13. sabgumo 'The house is large'
14. bademezenamena 'The nice boy built something well'
15. menzabmenebade 'The nice, good looking, boy is large'
16. bademegumozabozenamena 'The nice boy did a good job building a large house'

Languagette 5

1. apituk 'He fell today'
2. esozaz 'She ran yesterday'
3. apazit 'He fell yesterday'
4. ukapoz 'He ran today'
5. azitap 'He fell yesterday'
6. itesaz 'She fell yesterday'
7. ozazes 'She ran yesterday'
8. ozukap 'He ran yesterday'
9. itapaz 'He fell yesterday'
10. ukites 'She fell today'
11. azesoz 'She ran yesterday'
12. apazoz 'He ran yesterday'

Languagette 6

1. pokakasasik 'I write many papers'
2. pokakasasiknit 'I, a teacher, write many papers'
3. pokekasasiknit 'The teacher writes many papers'
4. pokekasasik 'He writes many papers'
5. lanekasasik 'He sees many papers'
6. lanositisik 'You see many men'
7. lanasiksitisik 'We see many men'
8. lanesiksitisiknitsik 'The teachers see many men'
9. lanosiksitisik 'Many of you see many men'
10. lanekasanitnop 'The happy teacher sees the paper'
11. lananopkasa 'I am happy to see the paper'
12. lanositinop 'You see the happy man'
13. lanenopkasakon 'The bus driver is happy to see the paper'
14. pokesitikon 'The bus driver writes to the man'
15. pokasitisik 'I write to the man'
16. pokasitikon 'I, a bus driver, write to the man'

Translate:

17. ..... 'You are a bus driver who writes to the man'
18. ..... 'The happy teacher writes an amusing paper'

Languagette 7

1. totan 'There's a cat'
2. totos 'There are many cats'
3. mitup 'It flew'
4. totosmitup 'It flew at the cats'
5. totosskat 'It sees many cats (or the cats)'
6. sanit 'There are two birds'
7. sananstup 'He is flying at the bird'
8. sanantotanskat 'The bird sees the cat'
9. sanantotitskat 'The bird sees two cats'
10. totansanitskat 'The cat sees two birds'
11. totansanitmikat 'The cat saw two birds'
12. totitsananmikat 'The two cats saw a bird'
13. sanostotanmitup 'The birds flew at the cat'

Also, with no translation provided:

14. sanittotittokat .....

Translate:

15. ..... 'The cat sees the bird'
16. ..... 'It flies at the cats'

Languagette 8

1. yoblakam 'The boy called the man'
2. amyobsna 'The man answered the boy'
3. amyoblak 'The man called the boy'
4. yobamlak 'The boy called the man'
5. yoblakyob 'The boy called the boy'
6. yobsnayob 'The boy answered the boy'
7. amamlak 'The man called the man'
8. amsnaam 'The man answered the man'

Languagette 9

1. sansoktumposo 'I saw the child'
2. santaltumposo 'I saw the large person'
3. loptaltumposo 'I saw the large fruit'
4. lopmoptummuk 'The child saw the ripe fruit'
5. loptummuk 'The child saw the fruit'
6. lopfatullat 'The man ate the round fruit'
7. lopmislet 'The man picked the fruit'
8. lopkonposo 'I liked the fruit'

Also, with no translation provided:

9. santalkonmuk .....

Translate:

10..... 'The man ate the ripe fruit'
11. ..... 'I liked the person'

Languagette 10

1. losisanfelopinmotu	'The man saw the flower in the garden'
2. losifelopinmotu	'The man looked in the garden'
3. losifelomotu	'The man saw the ball'
4. losipinmotu	'The man saw the garden'
5. losimotu	'The man saw it'
6. litomotu	'The teacher saw it'
7. litolakimotu	'The pretty teacher saw it'
8. litolakipinlaki	'The pretty teacher made the pretty garden'
9. nasulaki	'The children made it pretty'
10. nasulakilaki	'The good looking children made it attractive'
11. sanlakitokanlositon	'The pretty flower is in front of the man'
12. santokanton	'The flower is in front'
13. litofelokol	'The teacher showed it inside' or 'The teacher showed the ball'
14. litofelopinkol	'The teacher showed it inside the garden'
15. nasutokanlakimotu	'The children saw the pretty face'
16. felofelopinton	'The ball is in the garden'
17. losilakifelolakifelopinmotu	'The handsome man saw the pretty ball inside the garden'
18. nasustankonolo	'The children ate the cake'
19. nasustankokani	'The children made the cake well' or 'The children did well at making the cake'
20. losipinlakikani	'The man did well at making a pretty garden'
21. litokanilakitokannasukani	'The good teacher did well at making a pretty flower before the children'
22. sankanipinlaki	'The good flower made the garden attractive'
23. litofelotokannasukol	'The teacher showed the ball to the children'

Languagette 11

1. snolusnil	'It is the hunting (season)' or 'They are in the habit of hunting now'
2. snoluslin	'The hunting (season) is in progress'
3. simsnolusnilmus	'You often hunt for me'
4. simsnonumlinmus	'You were hunting for me'
5. simsnonumlinsun	'He was hunting for me'
6. snolusnilsun	'He hunts'
7. sunsnoluslinsim	'I am hunting for him'
8. simsnonumolinsun	'I was hunting for him'
9. sunsnolusolin	'He is hunting'
10. simsnoluslinmus	'You are hunting for me'
11. sunsnonumnilmus	'You used to hunt for him'
12. simsnonumolinmus	'I was hunting for you'
13. mussnonumlinsim	'I was hunting for you'
14. mussnolusnilsun	'He is in the habit of hunting for you'
15. mussnolusonilsim	'You hunt for me'
16. mussnonumlinmus	'I was hunting for myself'
17. mussnonumonilsun	'You used to hunt for him'
18. sunsnonumolinsun	'He was hunting for himself'
19. sunsnonumolinsim	'He was hunting for me'
20. simsnolusolin	'I am hunting'
21. snoluslinmus	'You are hunting'
22. snolusolinmus	'I am being hunted for' (i.e., 'Someone is hunting for me')
23. snolusolinsun	'He is being hunted for'
24. snoluslinsun	'He is hunting'
25. snonumolin	'(They) were being hunted'
26. simsnonumnil	'(They) used to hunt for me'

Languagette 12

STAGE A:

1. kinazviŋazzunvi	'Will the man shoot the lion?'
2. viŋazkinazzamatvi	'Will the lion spring at the man?'
3. ŋitkakinazzuŋku	'The man prepares to shoot'
4. ŋitkaviŋazpumazamatku	'The hungry lion prepares to spring'
5. pumakapatka	'It hungrily turns'
6. zivzamatka	'It quickly springs'

STAGE B:

7. pitkaviŋazkinas	'The lion sees the man'
8. zunvikinazzivviŋas	'The fast man will shoot the lion'
9. zuŋkuviŋazmuka	'Does the shot kill the lion?'
10. mukvikinazpumaviŋazzif	'The hungry man will kill the fast lion'

Languagette 13

1. ['zadamgiin'zolif]	'He wants that hat.'
2. ['mogibzo'zadamgiin'zol]	'The boy wants that hat.'
3. ['zadamgiox'mogibzo'zol]	'This is the hat the boy wants.'
4. ['zadamgiatdi'zolif]	'Does he want my hat?'
5. ['nox'gas'zadamgi'zolif]	'No. He wants a big hat.'
6. ['mogibzoif'gas'zit'zadamgi'zolak]	'His son wanted a big new hat.'
7. ['dzaagif'zit'zadamgi]	'He bought a new hat.'
8. ['gas'mogibzoots'bogamgidi'dzaim]	'Will your big son buy potatoes?'
9. ['li'gas'bogamgi'dzaimif]	'Yes. He will buy big potatoes.'
10. ['maamgidi'zolagots]	'Did you want corn?'
11. ['li]	'Yes.'
12. ['gas'mogibzoox'maamgi'dzaak]	'This big boy bought corn.'
13. ['bavdzibzoox'goamgiots'dimzak]	'This girl washed your dress.'
14. ['goamgiat'bavdzibzoox'dimzim]	'This girl will wash my dress.'
15. ['bavdzibzoif'zit'goamgiivin'dimzak]	'His daughter washed that new dress of hers.'
16. ['zit'goamgi'bavdzibzoat'zol]	'My daughter wants a new dress.'
17. ['gas'bavdzibzoots'zit'goamgiif'dims]	'Your big daughter washes her new dress.'
18. ['mogibzo'zadamgiadoxdi'dims]	'Does the boy wash this hat of mine?'
19. ['nox]	'No.'
20. ['zit'zadamgi'zit'goamgi'zolat]	'I want a new hat and a new dress.'
21. ['zaxdi'zolimots'goamgi]	'Hey! Will you want a dress?'
22. ['zit'zadamgiat'dimzakat]	'I washed my new hat.'
23. ['mogibzoin'vigvibgi'zol]	'That boy wants a dog.'
24. ['vigvibgiin'mogibzoat'zol]	'My boy wants that dog.'
25. ['bavdzibzoin'maamgi'loak]	'That girl saw the corn.'
26. ['vigvibzo'mogibgi'lo]	'The dog sees the boy.'
27. ['mogibzo'bavdzibzo'vigvibgi'lo]	'The boy and the girl see the dog.'
28. ['zax'loots]	'Hey! Look!'
29. ['zax]	'Hey!'

Languagette 14

STAGE A:

1. kimatapkansutso 2. tapkansutsokima 3. sutsokimatapkan 4. kimasutsotapkan 5. tapkaŋkimasutso 6. sutsotapkaŋkima	'You are speaking to him' (Utterances 1-6 are alternate utterances with the same meaning.)
7. sutsotapkantapma	'You are speaking to me'
8. sutsosutkantapma	'You are listening to me'
9. sutsosutkaŋkima	'You are listening to him'

10. kimsosutkantapma 'He is listening to me'
11. kimsosutkansutma 'He is listening to you'
12. kimsokimkantapma 'He is working for me'
13. kimsokimkansutma 'He is working for you'
14. sutsokimkantapma 'You are working for me'

STAGE B:

15. sutsokuptapkantapma 'Are you speaking to me?'
16. sutsotapkaŋkuptapma 'Are you speaking to me?'
17. kupsutsotapkantapma 'Are you speaking to me?'
18. kimsotapikimkan } 'He who is talkative is working'
19. kimkaŋkimsotapi }
20. tunaskaŋkimsotapi 'He who is talkative is studying'
21. tunaskantapso 'I am studying'
22. tapkaŋkimsotunaši } 'He who is learned is speaking'
23. kimsotunašitapkan }

STAGE C:

24. kimsotapkantunaši } 'He is speaking learnedly'
25. tapkantunašikimso }
26. kimsotunaši 'He is learned'
27. tapkansuti 'The speech is audible'
28. kimsotapkansuti 'He is speaking audibly'
29. tapso 'There is a speaker'
30. tapkan 'There is speech'
31. suti 'There is audibility'
32. sutso 'There is one who listens'
33. sutkan 'There is listening'
34. kimso 'There is a worker'

STAGE D:

35. tapsotunaskantapi } 'I am studying aloud'
36. tunaskantapitapso }
37. kimtapso } 'There is a speaker and a worker'
38. tapkimso }
39. kimtapsosutkan }
40. tapkimsosutkan } 'He and I are listening'
41. sutkaŋkimtapso }
42. sutsotapkimkan } 'You are talking and working'
43. sutsokimtapkan }
44. kimsotapkansutunaši } 'He is speaking audibly and learnedly'
45. kimsotapkantunasuti }
46. kimtapmakimsotunašisutkan } 'The learned one is listening to him and me'
47. sutkantapkimakimsotunaši }
48. kimtapkantunaskimikimsokimi } 'He, an industrious person, is working and speaking
49. kimsokimitapkimkaŋkimtunaši } learnedly and industriously'

STAGE E: The following utterances are recorded without translation:

50. kimtapi .....
51. suttapkan .....
52. tunastapso .....

STAGE F:

53. tapkan‖ 54. tunaskanotoki‖ 55. sutsotunaskaŋkup| tapkantapso‖ 56. tapsotunastunaskan| kimsotapkan‖ 57. sutsotunaskankupma| tapsotapkan‖ 58. tapsotunaskan| tapkan| kimsotapkan‖ 59. kupsosutkanfopisutma| tapsotapkan‖ 60. tapkaŋkimatunaši| kimsotapkan‖ 61. sutsotunaskanotokikup| tapkan| tapkantapso‖ 62. notoki| kimsotapkan‖ 63. sutsotunaskanfopikup| tapkantapso‖ 64. fopi| kimsotapkantapma‖ 65. tapsosutkanfopisutmakup| tapkantapso‖

66. sutsosutkantapma| kimsotapkan‖ 67. fopso‖ 68. taptapsosutkaŋkima‖ 69. tapkansuti‖ 70. tapkan‖ 'Here's a story. Once there was a student. "Are you studying," I asked. "I am studying very hard," he answered. "What are you studying," I asked. He said that he was studying a speech. I asked who would listen to him. "It is for the students," he said. "Did you study the speech yesterday?" I asked. He said, "Yes." I asked if he would study the next day. He said to me that he would. "May I listen to you," I asked. "You may hear it," he replied. The day arrived. We all listened to him. It was an acceptable speech. That's the story.'

7.8 Bibliographical Comments on Chapter 7

It will be evident to the reader acquainted with the linguistic literature that this chapter is a crucial one to the theory in that it proposes a third linguistic unit--the grameme--to join the phoneme and the morpheme, which are two small units that serve in some fashion as a starting point for much of the work of current linguistics (e.g., Bazell, 1953, pp. 5-6).

The outlook of this chapter, by setting up the grameme, takes issue with Harris' conviction that

> 'The linguistic structure of an utterance is presumed to be fully stated by a list of the morphemes which constitute it, and by their order. The difference between two utterances is expressed by the difference in morphemic constituency between them' (1948, p. 87);
>
> 'Past this point [i.e., the formal basis of getting phonemes and morphemes, etc.], however, there is often no agreement, even though it might seem that agreement would be almost automatic, since all that has to be done is to state the distribution of the elements which have been obtained' (Harris, 1944, p. 198; and cf. Lounsbury, 1953, p.11).

We would say, rather, that the distribution of morphemes must be handled in reference to gramemic units, which must also be obtained.

For a mathematical argument that many definitions which have been condemned as circular are in fact scientifically valid, as a variety of 'recursive definitions' from which 'the definienda are not always eliminable,' or 'where [it] seems inevitable to define some term A with the help of B and B with the help of A,' see Bar-Hillel (1953b). In our view, the descriptions of uttereme, morpheme, grameme, etc., make up a set of such simultaneously recursive definitions, and hence constitute a system.

In the nonverbal sphere the empirical usefulness of some kind of motifemic-spot-class correlative may perhaps be more easily seen than it is in linguistic analysis. The reason for this difference lies in the greater difficulty in locating a minimum motifemic unit in the analysis of nonlinguistic events than in verbal ones. It is relatively simple, by utilizing the communicative function of speech, to arrive at morphemes as minimum lexical units, with some residue; it is much more difficult to determine when one has a minimum nonlinguistic but purposive unit. This difficulty is in part due, according to this theory, to the fact that different participant types of activity or participant focus analysis of some units are clearly homomorphic but broken into subunits of different sizes and thresholds in accordance with their actor's participant type (§§3.32, 4.15, 4.1.10, 4.23, 4.32, 6.44, 6.62). By utilizing a theory which builds on a spot-class correlative as a basic occurring unit, however, the analyst can start his analysis in the middle of the hierarchy, without waiting to find maximum and/or minimum units. This makes a spot-class starting point much more useful, for behavior as a whole, than is one which by implication insists on identifying a threshold that defines some kind of minimum before analysis can go further.

This does not mean, however, that the nonlinguistic analyst is not to be interested in the possibility of thresholds and minimum units of various types, but that he can get started and can delay a decision concerning them until after he has collected and partially analyzed a considerable body of material which may help him understand something of participant types or systems of activity which may cause such thresholds to differ within events which appear to be homomorphic.

7.81 On Classes of Morphemes

The discussion of classes of "words" as such (rather than of morphemes, or of morpheme-hypermorpheme composites) and of "parts of speech" will be reserved for later chapters (e.g., §11). A number of references to classes are useful here, however, even though they overlap on that discussion.

Thus, for example, according to our theory Fries was reacting to the emic--as distinct from an etic--view of morpheme or morpheme-hypermorpheme classes when he made the following statement:

> 'A part of speech in English, like the strike in baseball, is a functioning pattern. It cannot be defined by means of a simple statement. There is no single characteristic that all the examples of one part of speech must have in the utterances of English. All the instances of one part of speech are the "same" only in the sense that in the structural patterns of English each has the same functional significance' (1952, p. 73).

Note also his important statement about lexical sets:

> 'As we record more specifically the details of the experience of language learning, we realize increasingly that we "learn" not only the shape of a lexical item and the recurrent stimulus-response features that correlate with it, but also the sets of other lexical items with which it usually occurs' (Fries, 1954, p. 66, fn. 32).

Certain etic variants of classes, in which the membership is lexically conditioned (§§7.43, 7.46), were treated by Fries in reference to 'lexical compatibility' (1952, pp. 223-24), and lexical set (1954, p. 66); cf. also Harris ('culturally determined limitations,' 1951, pp. 253-54, and 1946, pp. 163-64, Wonderly (1951, p. 3), and Whitehead (1929, p. 115).

For discussion of the meaning of a class, note Sweet who says that

> 'I may remark at once that the real difficulty of determining the meaning of the parts of speech lies in the fact, which logicians and grammarians obstinately ignore, that they often have no meaning at all. Indeed the whole of language is an incessant struggle and compromise between meaning and pure form, through all the stages of vagueness, ambiguity, and utter meaninglessness' (1875-76, p. 16),

so that the 'definition of a part of speech must be a purely formal one' (p. 18). Contrast Bloomfield:

> 'The functional meanings in which the forms of a form-class appear constitute the class-meaning' (1926, p. 159; cf. also 1933, pp. 266-68, 166, 202-05, 247-51).

For a recent use of semantic labels for classes, see Pittman (1954a, p. 10). For vague meanings of classes of classes, see Harris (1951, p. 252, fn. 21).

For a theoretical rejection of class meanings, but with a simultaneous practical retention of class meanings under a different label, note Voegelin:

> 'One after another, the meaning content of an older generation's use of a category is abandoned, leaving nothing but distribution, that is, position in an utterance or part of an utterance, as a word or phrase. Thus, from the older use of verb (V) as an action word and noun (N) as a thing word, and so on, modern analysts of natural languages use V and N and other parts of speech in a strictly formal sense, divorced from meaning' (1952, p. 222);

but, later,

> 'the overriding meaning of the paradigm is possessor relation to N. ... To obtain an overriding meaning in this sense implies that a given language will show at least two sets of forms with parallel or analogous specific meanings, but with contrastive or overriding meaning' (p. 232).

On the other hand, Voegelin has been responsible for stimulating one of the most useful approaches to the labelling of morpheme classes, through a numbering technique. Any morpheme labelled with a 'decade' number (i.e., 21-29, or 31-39, or 41-49, etc.) is a member of that class. For an illustration, note Wonderly (1951-52), and Garvin (1949, 1951).

For instances in which class meaning, lexical meaning, and structural meaning are indeterminate or problematical, in "function words," cf. Fries (1952, p. 106). Whereas for Fries the function words seem to constitute one part of a basic dichotomy of his theoretical approach, in our theory they are less prominent, and rather form a marginal group of lexical items in which grammemic meaning, morphemic meaning, and morphemic-class meaning become fused or indeterminate (§§6.45, 7.323-24). Compare, also, references to Pittman in §6.9, and compare Sweet:

> 'It need hardly be said that there is no absolute line of demarcation between the two [grammar and dictionary]; thus the prepositions and many of the particles belong both to the grammar and the dictionary' (1900b, p. 74).

Extensive discussion of morpheme classes occurs in Harris (1951, pp. 243-324). Cf. also Bazell (1953, pp. 69-80); Fries (1952, pp. 110-41).

7.82 On Spot or Position

Bloomfield early suggested that 'Each of the order units in a construction is a position' (1926, p. 158). The conception of a sentence as containing places for substitutable items had, nevertheless, been a part of practical grammatical apparatus before that (e.g., Sheffield, 1912, p. 107).

For positions as diagnostic, see Bloomfield (1926, pp. 158-59), Pike (1943b, p. 81), Harris (1946, p. 165), Fries (1952, pp. 75-86). For position as having a strong priority over morphemes in analysis, see Harris:

> 'We may therefore speak of inter-environment relations, or of occupyings of positions, as being our fundamental elements' (1951, p. 371, and cf. 1946, pp. 171, 181),

though this point of view of Harris' is unreconciled and non-integrated with his more frequent attention to morphemes and morpheme classes (e.g., 'The method described in this paper will require no elements other than morphemes and sequences of morphemes, and no operation other than substitution repeated again and again' 1946, p. 161; and cf. quotations in §7.8, above).

7.83 On Proportion, Positional Meaning, and Substitutability

Bloomfield stated that 'The meaning of a position is a functional meaning' (1926, p. 159), and that it

> 'would be more concrete, but perhaps less useful, if we said: the meaning common to all forms that can fill a given position, when they are in that position, is a functional meaning' (1926, p. 159).

Since that time, the prevailing climate of opinion has led workers to try to eliminate such reference to meaning from their structural definitions, while on occasion granting the presence of such meanings. Note, for example, the following quotations from Fries:

> 'The grammar of a language consists of the devices that signal structural meanings' (1952, p. 56),

nevertheless,

> 'For a grammar that will give an understanding of the working of a language we must turn aside from all definitions that strive to state the identifying characteristics of grammatical structures in terms of meaning content. Structures do signal meanings, it is true; and these meanings must be described. The meanings, however, cannot serve successfully to identify and distinguish the structures' (1952, p. 203).

As far as analytical procedures are concerned, however,

> 'Meaning of some kind and of some degree always and inevitably constitutes part of the framework in which we operate' (Fries, 1954, p. 61),

and

> 'The use of the technique of substitution in investigation always demands control of certain features of 'meaning.' The investigator must, in some way, either through an informant or by using his own knowledge, control enough of a particular kind of meaning to determine whether the frame is the "same" or "different" after any substitution is made' (1952, pp. 74-75, fn. 6),

but

> 'Of course, the object of our search here is not the meaning but the strictly formal features which make a difference in the "meaning"' (1952, p. 75, fn. 6).

furthermore,

> 'it is necessary to insist that such terms as "subject," "indirect object," "direct object" have no relation to the actual facts of a situation in the real world. As grammatical terms they are simply names for particular formal structures within an utterance' (1952, p. 175).

Although Harris finds it necessary to add to his scheme a 'position-morpheme' (1951, p. 211, fn. 38; cf. also pp. 185-86, 357 and 195) presumably because it adds, for example, 'the "object" meaning to you in I saw you,' he fails to integrate this addition into a coherent theory with the main stream of his thought (which 'will require no elements other than morphemes and sequences of morphemes' 1946, p. 161, from which morpheme types he normally omits morphemes of order, without comment). Even in reference to meaningful or structural positions, however, he elsewhere states that

> 'It may be necessary to point out that this positional analysis is strictly formal, as compared with form-and-meaning analysis like the one in Otto Jespersen's analytic syntax' (1946, p. 177, fn. 26).

At this point, Harris seems on occasion to share with Fries the recognition of structural, positional meaning, and the desire to eliminate this factor from his structural definitions. Trager and Smith go even further, in that they wish to see such structural meaning eliminated not only from the resultant definitions but from the procedures of analysis as well:

> 'The procedures for syntactic analysis do not differ essentially from those already used. With the phonology completely established, and the morphological analysis completed, the syntax of a language like English can be constructed objectively, without the intervention of translation meaning or any resort to metalinguistic phenomena' (1951, p. 68).

The reader will recall that we have earlier insisted that, in our view, neither an approach through meaning alone, nor one through form alone, is valid, but that in every step in linguistic analysis we must retain a form-meaning composite as essential to analysis and definition (§§5.64, 2.73).

Here, likewise, we reject with Fries and Harris an analysis by meaning alone, and reject with Fries an analytical procedure which purports

to be handled by form alone; but within this theory I find it valid to include structural meaning within the various components which enter into a definition of a grameme, if for that particular grameme a structural meaning is clearly identifiable (but for Fries' discussion of some of these problems, see 1952, pp. 203, 188-89, 175-76, 178, 191, 201, 204-06, 217, 219, 224).

One of the chief reasons for insisting on the validity of and necessity for the use of meaning along with form, to identify and control proportion (§7.321) in substitution, is illustrated in a problem met by Harris when he ignored this component:

> 'Since our procedure now permits us to make any substitutions of any sequences, it may become too general to produce useful results. For example, we might take the utterance I know John was in and substitute certainly for know John, obtaining I certainly was in' (1946, p. 166);

know John is not proportionate to certainly in that utterance. Harris, in that paragraph, states that this substitution conceals several important facts of sentence structure, distribution and concord. He affirms that 'such substitutions as certainly for know John can be precluded by analyzing the utterance into immediate constituents,' but that such a technique does not serve him there since 'the analysis into immediate constituents is not used here and we must state other methods of excluding such substitutions as certainly for know John' (1946, p. 166, fn. 9); no such methods are provided in that article, however, and the problem does not seem to be raised in the same way in 1951 (compare, however, the discussion of related but different problems on pp. 249-51, 257, 259-60, 296-97, 311, 311 fn. 21, 350-51, 365 fn. 6). For a quasi-mathematical attempt to discuss such a problem, see Bar-Hillel (1953, p. 48).

For an extensive critique of Harris' substitution methods, see Fowler:

> 'But the methodical use of frames requires a kind of control not possible at the beginning of an analysis in which distribution or arrangement is the only relevant relation' (1952, p. 508),

and

> 'But (as, again, it can hardly be too often repeated) no substitution classes are yet in existence; the choice of another frame (no matter whether one or all of the constituent elements be changed) is necessarily therefore either random (and not a method at all) or determined by a criterion other than "distribution or arrangement"' (p. 508),

and

> 'It is this prime criterion--the additional element of function or of meaning--which Harris would put aside in favor of "distributional investigations." Until it is brought back and placed in first position, the job simply cannot be done' (p. 509).

To Wells we are indebted for the term 'expansion' (1947, pp. 81, 83). We use it, however, within a framework of control which embraces both form and meaning (or proportion) from the early etic beginning of an analysis, rather than trying 'in our exposition to leave the factor of meaning out until much later (Part III)' (Wells, 1947, p. 85--a goal he fails to attain, cf. pp. 81, 85, 92).

For the term 'substitution' used for open classes, vs. 'commutation' for closed ones, see reference to Firth in Carnochan (1952, p. 79 fn. 5).

For some descriptions of grammemic meanings, within a different theoretical framework, note Jespersen, e.g., 1949:

> 'The tertiary serves to qualify not the real content signified by the verb, but the stylistic choice of the following word, which is then strongly stressed, as in "she fairly screamed", or as in "I absolutely blushed"' (p. 84).

7.84 On Potential and Prediction

In §§2.6 and 2.74 we discussed some of the possibilities of predicting behavior in reference to clashing emic systems. Within the grameme, the productive 'potential' for substitution leads to the 'prediction' of sequences which may occur. For a discussion of such productive potential see Wonderly (1951, pp. 2-3; compare Fries, 1952, p. 65). For potential as prediction, see Hockett (1948, pp. 269-70); but for his adverse reaction to potential in another connection, note 1949, pp. 47-48, and reply by Pike (1952a, pp. 109-11).

Note also Harris:

> 'Therefore any differences in substitution potential which can be recognized from the structure of an utterance are relevant even to that utterance alone [i.e., by itself] (and are certainly relevant to the whole language)' (1951, p. 273 fn. 27);

and, in reference to the ability to 'predict utterances,' see p. 365--though predictions of difficulty in learning a second language are 'outside the techniques and scope of descriptive linguistics' (p. 21).

For an earlier reference, note Bloomfield:

> 'The totality of utterances that can be made in a speech-community is the language of that speech-community. We are obliged to predict; hence the words "can be made."'

'Where good informants are available, or for the investigator's own language, the prediction is easy; elsewhere it constitutes the greatest difficulty of descriptive linguistics' (1926, p. 155).

In reference to nonverbal behavior, note Sapir:

'It is easy for an Australian native, for instance, to say by what kinship term he calls so and so or whether or not he may undertake such and such relations with a given individual. It is exceedingly difficult for him to give a general rule of which these specific examples of behavior are but illustrations, though all the while he acts as though the rule were perfectly well known to him. ... It is, rather, a very delicately nuanced feeling of subtle relations, both experienced and possible' (1927, Selected Writings, p. 548).

For an extensive discussion, favoring the use of the term 'choice' in nonlinguistic situations, see Nadel (1951, pp. 68-72). Compare Kluckhohn (1949, pp. 31, 43, 67-68, 260), and Twaddell,

'we notice in our own language the meanings, the acts of choice'

and

'Language is one of the points of intersection in that network of habit and choice which is the pattern of human beings' (1949, pp. 6, 4).

But for this term sharply rejected (and, in 1933, replaced by the word 'selection'), as reflecting 'the primeval drug of animism,' see Bloomfield (1930, p. 554). Contrast the activity of the parrot who, according to Hoijer,

'learns single and unrelated (to him) morpheme utterances. The trick learned by the primate, like the utterances of the parrot, is not seen as a frame in which substitutions are possible but only as an act complete in itself and discrete from all others' (in Kroeber, 1953, p. 555).

For reference to selection potential as basic to communication theory, note Shannon:

'The significant aspect is that the actual message is one selected from a set of possible messages. The system must be designed to operate for each possible selection, not just the one which will actually be chosen since this is unknown at the time of design' (in Shannon and Weaver, 1949, p. 3).

7.85 On Morphemic Spot-Class Correlatives versus Constructions or Relationships

We have already discussed (§6.7), to some extent, the advantages of giving priority in the theory to physically-manifested units, rather than to abstracted relationships as such. This view must not be distorted, however, to make it appear to imply that such units exist apart from their occurrence in any relationship; rather the units are treated as occurring only as points in a system of relationships (§6.7), with unity and relationship both relevant, but with attention focused on the first. Thus the present theory is neither that of relationships apart from substance nor of substance apart from relationships, but a theory in which the "relationships" into which units enter are interpreted as conceptualized hypostasic constructs viewed by the analyst as components of those units. Thus the view here is neither the one accepted nor the one rejected by Hjelmslev:

'The recognition of this fact, that a totality does not consist of things but of relationships, and that not substance but only its internal and external relationships have scientific existence, is not, of course, new in science, but may be new in linguistic science. The postulation of objects as something different from the terms of relationships is a superfluous axiom and consequently a metaphysical hypothesis from which linguistic science will have to be freed' (1953, p. 14);

and

'Linguistics... must establish the science of the expression without having recourse to phonetic or phenomenological premisses' (p. 50);

and

'"substance" cannot in itself be a definiens of language' (p. 66; cf. pp. 61, 68, 81).

In the grameme we have insisted that the filling of the spot (i.e., the manifestation mode of the grameme; cf. §§3.56, 7.4) is relevant to its nature, and that the relational functions of the emic spot (§7.321(2-4)) are also relevant.

We also insist that focus of analytical attention in theory and practice must be placed on units as total elements--though with a relevant placement in a hierarchy of larger forms--and not on bipartite "constructions" as the principal elements. We REJECT A VIEW IN WHICH THE MOST BASIC RELATIONSHIP IS, PRIMARILY, BETWEEN UNITS OF EQUAL RANK, OR OF THE SAME 'LEVEL,' AS TERMS OF A RELATION IN A BINARY CONSTRUCTION; and we PROPOSE A

VIEW IN WHICH THE MOST BASIC RELATIONSHIP IS BETWEEN A UNIT AND ITS SLOT-OCCURRENCE (OR SPOT-FUNCTION). This view has lead to the treating of the grameme, with its spot-class correlation, as more basic than that of 'immediate constituents' as such. The underlying reason for this decision we argued in 1944, under the phrase "Positions: as theoretically primary, establishing form classes and parts of speech" (p. 114; compare a re-working of this point of view, above, in relation to grammemes, §§7.31, 7.321), and affecting lexical meanings (1944, pp. 114, 124-25, 129-32, 134-36; compare above, §§7.323-24). The crucial part of the argument as regards unit vs. construction, however, is contained in an extensive footnote:

> 'In a large phrase, each of the immediate constituents, i.e., each member of the relationship, has a unit function within that relationship, whether the member is simple or complex. For example Tom and Big Tom both function as subject in Tom likes apples and Big Tom likes apples. Now since Big Tom likewise has members of an internal relationship --big in modifying position and Tom in modified position--it is evident that a relationship as a whole can function as a unit in one position of a larger relationship as in Big Tom likes apples';

and

> 'one may deduce that the basic characteristic of a large complicated relationship is not its internal structure as such, but rather its total function as a unit in relation to the physical and linguistic environment in which it is uttered.'

The note then continues to discuss the labelling problems of hierarchical structures, in which

> 'the labelling of a top layer and function in terms of a lower layer and function steals the source material for labelling, in due course, the lower layer,'

so that the analyst may then be tempted to affirm

> 'that only relationships exist since everything would seem to have been described about the simple forms [the ultimate constituents] already' (pp. 127-28 fn. 7).

Six years after the publication of this note I was startled to find that much earlier Bloomfield had met one phase of this problem:

> 'E. A. Esper calls my attention to an error in my English wording of Meillet's definition, LANGUAGE 2.158: "A maximum construction in any utterance is a sentence." For "construction" one must, of course, read "form," since otherwise, the definition, if it meant anything at all, would exclude largest-forms that happened to contain only a single morpheme; e.g. Come! Ouch! Yes.' (1931, p. 209 fn. 6);

yet in 1933 Bloomfield had not assimilated this lesson, and was still setting up multipartite constructions as basically distinct from simpler items:

> 'The grammatical forms of a language can be grouped into three great classes: (1) When a form is spoken alone (that is, not as a constituent of a larger form), it appears in some sentence-type ... (2) Whenever two (or, rarely, more) forms are spoken together, as constituents of a complex form, the grammatical features by which they are combined, make up a construction' (p. 169).

In 1952 Pittman gave a paper, at the August meeting of the Linguistic Society of America, entitled 'The Priority of Valence over Phonological Attachment and Relative Order in Descriptive Statements.' Developing this point of view in his grammar of Nahuatl, he argues that

> 'It is possible to conceive of the relation between two immediate constituents as a sort of link, or bond, between the constituents. ... called a "syntagmatic relation" by Hjelmslev ... a sort of "bond" or "valence" connecting the terminals' (1954, pp. 5-6).

Here Pittman attempts to make such an abstracted 'valence'* his principal theoretical construct.

It seems improbable that Pittman's abstracted covert valences--i.e., abstracted relationships--could attain nonhypostasic emic status within our theory since they lack, in such a treatment, a manifestation mode (cf. §7.321, for our treatment of abstracted grammemic spots as denied emic status, other than as a conceptualized hypostasis). If one tries to treat the utterances as a manifestation of the valence, on the other hand, the valence as "covert" loses coherence with the stated theory of abstraction.

Compare, in this connection, a statement of Bloomfield's which implies that relationship is part of an emic unit, not a nonhypostasic emic

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*For an early use of this term, see de Groot, who attributes it to Reichling (de Groot, 1948, pp. 437, 439, 441, 443-44); there it is used in reference to 'suitableness for combinations with certain other words in a certain way.'

unit to be abstracted in itself:

> 'To earlier students, language appeared to have a third aspect, intermediate between form and meaning; this aspect was usually called function. Thus, a word like apple not only meant a certain kind of fruit, but also functioned as a noun, serving as the subject of verbs, as the object of prepositions and transitive verbs, and so on. Careful study, however, showed that features like these are a part of the form; they are the formal features which come into being when two or more forms are combined in a larger form. ... In sum, the function of a speech form consists merely of formal features which appear when it serves as part of a more inclusive form' (1943, p. 103).

Pittman's "overt" valences we have already discussed in §6.91, in reference to Fries' "function words" or, in this theory, to morphemes which have empty meaning (§6.45) or meaning indeterminate with grammemic meaning (§§7.323-24). The kind of data leading to such a problem of "function words" or of "overt valences" has been neatly stated by Bloomfield, for Tagalog:

> 'Some of the particles seem, however, to stand in none of these relations [attribution, predication, serialness], but rather to express these relations themselves. Thus the particle t and in the preceding example is expressive of the serial relation. So further: malakì ŋ baháy large house; the particle ŋ expresses the attributive relation' (1917, p. 146);

and some of the same relationships may be expressed by word order without the particle--but in this instance the word order differs from that which occurs when the particle is present. Note, for example that 'The subject may have two positions' in sumùsúlat aŋ báta? [writing-the-he] versus: Aŋ báta? ay sumùsúlat [He (is) writing] in which ay is the particle indicating that the element following it is the predicate.

Within our theory, these alternate sentence forms of Tagalog would perhaps constitute etic variants of the same uttereme (i.e., assuming that there are no differences of style or of emphasis between the alternates; if such differences were to be found, the utteremic analysis would treat them as contrastive sentence types). The one without the particle would be a minimum type; the other would have free variation of its grametic-spot positions for subject and predicate, with a conditioned grammemic obligatory expansion of the predicate grameme in the variant in which its spot component followed the subject. The conditioned morphemically-complex grammemic variant of the predicate would in turn be comprised of two manifested included grammemes, of which the first would be comprised of the grammemic spot for the morpheme ay, as filled by the manifesting class which in turn is comprised of the unique member ay; morpheme meaning, morpheme-class meaning, and included-grammemic-class meaning would be fused and indeterminate, if detectable at all (say as 'predicate indicator'). The second of the included grammemes is manifested by one of a large number of items, since,

> 'In contrast with the particles, full words act not only as attributes, but also as subject or predicate, and any full word may, in principle, be used in any of these three functions' (Bloomfield, 1917, p. 146).

7.86 On the Etics of Relationships

The most consistent and rigorous attempt to provide a theory behind the etics of grammatical relationships is that of Hjelmslev (1953). This, to me, seems to be potentially his greatest contribution--the building of a general, logical "grid" of relations, of a quasi-mathematical type, through which languages can be etically seen and etically compared. His work needs further development before it provides some of the characteristics needed for an etic tool, and may need the deletion of some emic considerations. Such an etic classification, however, should not be confused with the kind of operational prescriptions which must constitute part of any generalized emic approach to a particular language. Note, also, Uldall (1949), with some symbolism for such relations. Much work has also been done by Bazell, in attempting to classify the etics of relationships (1953, pp. 13-39, and references to numerous other articles in the 1949 and 1950 volumes of the Linguistic Bibliography published by the International Committee of Linguists).

Problems concerning the relation of logical function to actual grammatical distribution have been under attention for many years. Note, for example, Paul (1889, pp. 311-38), with a heading 'The divergence of psychological and grammatical distribution' (p. 311), and with a formulaic representation of certain of these elements. Contrast Sheffield: 'It is easier, however, to "muckrake" the parts of speech than to replace them with word-categories valid for every language' (1912, p. 90)--where logical etics and descriptive emics are confused. For an argument that the environment in which man finds himself imposes its (etic) pattern on man's language (especially as regards nouns and verbs), note Bull (1949, pp. 474-75); it fails, however, to account for languages in which the noun-verb dichotomy is not basic to word classes (e.g., cf. the quote from Bloomfield, regarding Tagalog, in §7.85).

Perhaps the best known discussion of language types, including a discussion of relational elements, is that of Sapir (1921, pp. 59-156, with summarizing chart on pp. 150-51. Here, too, is the best discussion of the difficulties inherent in such a task (e.g., pp. 129-33).

7.87 On Grammemes versus Tagmemes

In a paper, 'Syntax of the Mixteco Noun,' presented in 1941 to the Mexican Society of Anthropology (published by title only, in the Revista Mexicana de Estudios Antropologicos Volume V, nos. 2-3, 1941), I first analyzed the manner in which a subclass of Mixtec nouns were changed in meaning in certain syntactic positions (cf. above, §7.323, and 1944, pp. 131-32). It was this bit of descriptive work which laid the groundwork and provided the stimulus for the later development of that part of the present grammemic theory which has reference to the interrelations of lexical meaning, class meaning, and grammemic meaning.

Meanwhile I was attempting to apply to Mixtec the taxeme-tagmeme outlook of Bloomfield's Language (1933). In trying to do so, three difficulties which are now relevant to grammemic analysis became clear: (1) structural layerings needed explicit formulation, in a hierarchical structuring not developed by Bloomfield; (2) the study of immediate constituents needed explicit criteria for its application; and (3) taxeme and tagmeme had overlapping definitions.

To meet the first of these difficulties and to make layered structure explicit, I proposed an analysis in a kind of "pyramided" structure, with a chart to show the layerings (1943, p. 70, a procedure which in some form or other is now frequently used in the discussion of immediate constituents--e.g., Nida, 1949, p. 87; Fries, 1952, p. 266). For the second, I proposed a list of criteria for immediate constituents (1943, pp. 74-81). This list proved incomplete, and not sufficient for a full procedure. Since that time, additional criteria have been suggested by other writers--especially by Wells (1947) and Pittman (1948), but further criteria and theory are still needed.

In order to try to solve some of these problems, my colleague Dr. William Wonderly and I attempted in the summer of 1948 to devise a set of formulas which would lead, without reference to meaning, to the immediate constituents of any utterance. After trying many formulas such as 'If ab and abc but not ac occur, c is subordinate to ab,' etc., we repeatedly ran into situations which made the conclusions untenable in the light of grammatical junctures which were obvious from other criteria. In the meantime, however, we noticed that we could with a fair degree of ease and agreement recognize the consistent proportion of one item to its environment and of a substituted item to that same environment--and that this recognition occurred long before we could be reasonably sure of the immediate constituents of that utterance. Therefore, in the present theory, I have given the recognition of proportion in substitution an important place in grammemic treatment (§§7.321-22), and have eliminated from the theory any attempt to determine immediate constituents without reference to structural meaning or proportion.

For the third of the difficulties in Bloomfield's analysis--the confusion in the relation of taxeme and tagmeme--a discussion of their overlapping analyses in Bloomfield's work was given, with an attempt to revise the usage of the terms so as to eliminate such overlap (Pike, 1943, pp. 65-74). In the next few years the basic criticisms raised at that time continued to appear valid, but the revised solution did not prove particularly useful: it seemed that some basic difficulty must still remain with the fundamentals of the approach. The taxemes of selection, order, modulation, and phonetic modification did not seem to be parallel or analogous one to another; the postulation of a new over-all tagmeme for every expansion of a basic construction became highly unwieldy; and several components of the grameme which we can now distinguish clearly--though with some residual indeterminacy--were not differentiated by the terms of the definition of the tagmeme, so that morphemic class, class meaning, grammemic spot, structural meaning, correlation of various types, intonational versus segmental grammemes, productive versus nonproductive morphs, etc., were not consistently handled. In the present theory, therefore, the attempt to salvage the tagmeme has been abandoned, and grammemic theory, morphemic-class theory, the theory of hierarchical structuring of the various modes of utteremes, and the theory of componential but interpenetrating systems, etc., take over the miscellaneous areas covered in part by the older term, tagmeme.

Our particular approach to the grameme, however, began in 1948. In the spring of that year, I asked myself: 'If the discovery of the phoneme was long delayed, and came after investigators began to see that the naïve reaction of native speakers was quite different from what phonetic theory would have predicted (e.g., see Sapir, 1933, Selected Writings, pp. 47-58), is it possible that some currently unknown unit of grammar, equally important and equally clearly implied by naïve native reaction to grammar, is waiting to be discovered by someone who would search for such ignored clues?' I set myself to this search, without much success, for a year: I looked for clues in both meaning and form, with no useful result.

Then I decided to try to duplicate for grammar the technique Sapir had utilized in demonstrating the necessity for a structural approach to phonology. As he had built, in 1925, two artificial systems of sounds which had the same

list of phones, within entirely different phonemic structures, so I would try to build various artificial languagettes with some constant list of starting elements, but with different grammatical structures. This approach proved more fruitful: a list of morphs provided the constant for the various languages, and differences in morphophonemics, morphemic order, bound versus free classes, word class groupings, agreement, structural meanings, sentence patterns, and so on, provided the variables.

Early in 1949 I was trying out a number of these characteristics with constructions as theoretically basic, and met again the problems inherent in such a starting point (§7.85). Turning once more to the treatment of structural, positional unity as having priority over construction, and labelling the structural position plus its manifesting class as a 'grameme,' I tried to list its defining characteristics. A comparison with the phoneme and morpheme led to the conclusion that all three could be given comparable definitions, with an over-all term for any structural unit of language behavior.

Two important adjustments in definition had to be made, however, before this approach was possible. The first was the addition, to each definition, of the distribution of such a unit in a larger structure as a component in the definition of the included unit. This caused no problem for phoneme, morpheme, or grameme, since the grameme, for example, could be defined as included in, or distributed within, the sentence. But what was the largest linguistic act to be distributed within? Here we were inevitably committed to the relevance of culture, or nonverbal behavior, as a distributional matrix for large linguistic units. It was only a matter of time, therefore, until the total theory, in order to survive at all, had to embrace nonverbal as well as verbal human behavior.

The second necessity was the probing for possible--but not essential--parallels, in all unit types. Since all must have distributional components, and all must have identificational-contrastive features (with their 'identificational' aspects indicating that two units might be the 'same,' and their 'contrastive' aspects indicating that they might be 'different'), so all might prove to have variants, free or conditioned, simple or complex. It was at this point that our initial search for an incentive toward or confirmation of analytical theory in naïve native reaction to linguistic structure received its first strong integration with our newer structural definitions: if phonemes might be manifested by two phones in sequence, in a phonetically-complex variant of a phoneme, would analogy suggest the possibility of morphetically-complex morphemes, in which the two morphs were not productive or active in that combination? The answer was definitely 'Yes.' If, with Bloomfield (1933, pp. 209, 240-42), receive was treated as two units, here the two could be combined into a single morphetically-complex morpheme, for which the activeness was restricted to an etically-complex unit which as a whole manifests a grameme. In this way, not only would the possible structural parallels of phonemics, morphemics and gramemics be realized, but--more important--we would have found a theoretical framework (cf. §§6.54, 6.61-62, 6.92, 7.44) within which would be accommodated our long-standing native aversion to the treatment of receive as a sequence of two morphemes. The new approach was embracing a large variety of phenomena in a coherent theory, and at the same time "making sense" of many structural phenomena to which speakers had been intuitively reacting. The new theory, then, was leading to an emic analysis--the analysis of human behavior in reference to the manner in which participants react to their own behavior and respond to the behavior of their colleagues.

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REFERENCES

Bar-Hillel, Yehoshua. 1953a. "A Quasi-Arithmetical Notation for Syntactic Description," Language, 29.47-58.

----. 1953b. "On Recursive Definitions in Empirical Sciences," Proceedings of the XIth International Congress of Philosophy, 5.160-65.

Bazell, C. E. 1948a. "On Morpheme and Paradigm," Edebiyat Fakültesi Ingilizce Şubesi Dergisi, pp. 1-21.

----. 1948b. "On Some Definitions in Structural Linguistics," Garp Filolojileri Dergisi, Istanbul Üniversitesi Edebiyat Fakültesi Yayinlari, pp. 279-87.

----. 1949a. "On the Problem of the Morpheme," Archivum Linguisticum, 1.1-15.

----. 1949b? 1951? "Glossematic Definitions," Reprint, pp. 107-17.

----. 1953. Linguistic Form. Istanbul Üniversitesi, Edebiyat Fakültesi, Yayinlarindan: No. 574. Istanbul: Istanbul Press.

Benedict, Ruth. 1946. Patterns of Culture. Penguin edition. New York.

Birdwhistell, Ray L. 1952. Introduction to Kinesics, an Annotation System for Analysis of Body Motion and Gesture. Washington, D.C.: Foreign Service Institute.

Bloch, Bernard. 1947. "English Verb Inflection," Language, 23.399-418.

----. 1948. "A Set of Postulates for Phonemic Analysis," Language, 24.3-46.

----. 1950. "Studies in Colloquial Japanese IV. Phonemics," Language, 26.86-125.

----, and Trager, George L. 1942. Outline of Linguistic Analysis. Baltimore: Special Publications of the Linguistic Society of America.

Bloomfield, Leonard. 1917. Tagalog Texts with Grammatical Analysis. University of Illinois Studies in Language and Literature, 3, Nos. 2-4.

----. 1924. Review of Ferdinand de Saussure, Cours de linguistique générale, 2nd edition, Paris, 1922, in Modern Language Journal, 8.317-19.

----. 1926. "A Set of Postulates for the Science of Language," Language, 2.153-64; reprinted in International Journal of American Linguistics, 15.195-202 (1949).

----. 1930. "Linguistics as a Science," Studies in Philology, 27.553-57.

----. 1931. Review of John Ries, Was ist ein Satz?, Prague, 1931, in Language, 7.204-09.

----. 1933. Language. New York, Henry Holt and Co.

----. 1942. Outline Guide for the Practical Study of Foreign Languages. Baltimore: Special Publications of the Linguistic Society of America.

----. 1943. "Meaning," Monatshefte für Deutschen Unterricht, 35.101-06.

Bolinger, Dwight L. 1948. "On Defining the Morpheme," Word, 4.18-23.

----. 1950. "Rime, Assonance, and Morpheme Analysis," Word, 6.117-36.

Bull, William E. 1949. "Natural Frequency and Word Counts," The Classical Journal, 44.8.469-84.

----, and Forley, Rodger. 1949. "An Exploratory Study of the Nature of Actions and the Functions of Verbs in Spanish," Hispania, 32.64-73.

Capell, A. 1933. "The Structure of the Oceanic Languages," Oceania, 3.418-34.

----. 1940. "Language Study for New Guinea Students," Oceania, 11.40-74.

Carnochan, J. 1952. "Glottalization in Hausa," Transactions of the Philological Society, pp. 78-109; reprint 1953.

Castiglione, Salvatore J. 1952. Report of the Third Annual Round Table Meeting on Linguistics and Language Teaching. Washington, D.C.: Georgetown University Press.

Chao, Yuen Ren. 1933. "The Non-Uniqueness of Phonemic Solutions of Phonetic Systems," Academia Sinica: Bulletin of the Institute of History and Philology, 4.363-97.

Child, C. M., Koffka, Kurt, and others. 1927. in The Unconscious: a Symposium. E. S. Dummer, Editor. New York: Knopf.

Cowan, George M. 1948. "Mazateco Whistle Speech," Language, 24.280-86.

Dalgarno, George. 1834. [1661, 1680]. The Works of George Dalgarno of Aberdeen, Reprinted at Edinburgh.

de Groot, A. W. 1948. "Structural Linguistics and Word Classes," Lingua, 1.427-500.

de Saussure, F. 1931. Cours de linguistique générale, Third edition, Paris: Payot.

Ege, Niels. 1949. "Le signe linguistique est arbitraire," Travaux du cercle linguistique de Copenhague, 5.11-29.

Firth, J. R. 1935. "The Technique of Semantics," in Transactions of the Philological Society, pp. 36-72.

----. 1948. "Sounds and Prosodies," Reprint from Transactions of the Philological Society, pp. 127-52; reprint, 1949.

----. 1950. "Personality and Language in Society," The Sociological Review, 42.37-52.
Fischer-Jørgensen, Eli. 1949. Review of Kenneth L. Pike, Phonemics, Ann Arbor, 1947, in Acta Linguistica, 5.104-09.
Fowler, Murray. 1952. Review of Zellig Harris, Methods in Structural Linguistics, Chicago, 1951, in Language, 28.504-09.
Freeland, L. S. 1951. Language of the Sierra Miwok. Indiana University Publications in Anthropology and Linguistics, Memoir 6 of the International Journal of American Linguistics.
Fries, Charles C. 1940. American English Grammar. New York and London: Appleton-Century Co.
----. 1945. Teaching and Learning English as a Foreign Language. Ann Arbor: University of Michigan Press.
----. 1952. The Structure of English, an Introduction to the Construction of English Sentences, New York: Harcourt, Brace & Co.
----. 1954. "Meaning and Linguistic Analysis," Language, 30.57-68.
----, and Pike, Kenneth L. 1949. "Coexistent Phonemic Systems," Language, 25.29-50.
Garvin, Paul L. 1948, 1951. "Kutenai I-IV," International Journal of American Linguistics, 14.37-42, 87-90, 171-87, (1948); 17.84-97 (1951).
Gifford, E. W. and Kroeber, A. L. 1937. "Culture Element Distributions: IV, Pomo," in University of California Publications in American Archeology and Ethnology, 37.117-254.
Greenberg, Joseph H. 1948. "Linguistics and Ethnology," South West Journal of Anthropology, 4.140-47.
Hall Jr., Robert A. 1945. "Colloquial French Substantive Inflection," French Review, 19.24-36.
Hall, Edward T., and Trager, George L. 1953. The Analysis of Culture. Pre-publication edition, Washington, D.C.: Foreign Service Institute, Dept. of State.
Harris, Zellig. 1942. "Morpheme Alternants in Linguistic Analysis," Language, 18.169-80.
----. 1945. "Discontinuous Morphemes," Language, 21.121-27.
----. 1946. "From Morpheme to Utterance," Language, 22.161-83.
----. 1951. Methods in Structural Linguistics. Chicago: University of Chicago Press.
----. 1952. "Discourse Analysis," Language, 28.1-30, 474-94.
Haugen, Einar. 1949a. "Phoneme or Prosodeme?" Language, 25.278-82.
----. 1949b. "Phonemics: A Technique for Making Alphabets," American Speech, 24.54-57.
----. 1951. "Directions in Modern Linguistics," Language, 27.211-22.
Hickerson, Harold, Turner, Glen D., and Hickerson, Nancy P. 1952. "Testing Procedures for Estimating Transfer of Information Among Iroquois Dialects and Languages," International Journal of American Linguistics, 18.1-8.
Hjelmslev, Louis. 1936. "On the Principles of Phonematics," Procedures of the Second International Congress of Phonetic Sciences, pp. 49-54.
----. 1953. Prolegomena to a Theory of Language, Indiana University Publications in Anthropology and Linguistics, Memoir 7 of the International Journal of American Linguistics (Translation, by F. J. Whitfield, of Omkring sprogteoriens grundlaeggelse, 1943).
Hockett, Charles F. 1942. "A System of Descriptive Phonology," Language, 18.3-21.
----. 1947a. "Problems of Morphemic Analysis," Language, 23.321-43.
----. 1947b. Review of Eugene A. Nida, Morphology, 1st edition, Ann Arbor, 1946, in Language, 23.273-85.
----. 1948. "A Note on Structure," International Journal of American Linguistics, 14.269-71.
----. 1949. "Two Fundamental Problems in Phonemics," Studies in Linguistics, 7.29-51.
----. 1950a. "Peiping Morphophonemics," Language, 26.63-85.
----. 1950b. "Which Approach in Linguistics is 'Scientific'?" Studies in Linguistics, 8.53-57.
----. 1952. Review of Travaux du cercle linguistique de Copenhague, Vol. V, Recherches structurales, 1949, in International Journal of American Linguistics, 18.86-99.
----. 1953. "Short and Long Syllable Nuclei," International Journal of American Linguistics, 19.165-71.
Hoenigswald, Henry M. 1950. "Morpheme Order Diagrams," Studies in Linguistics, 8.79-81.
Householder, Fred W. 1952. Review of Harris, Methods in Structural Linguistics, Chicago, 1951, in International Journal of American Linguistics, 18.260-68.
Jakobson, R., and Lotz, J. 1952. "Axioms of a Versification System Exemplified by the Mordvinian Folksong," in Linguistica 1.5-13, Acta Instituti Hungaria Universitatis Holmiensis.
Jespersen, Otto. 1924. The Philosophy of Grammar. New York: Henry Holt and Co.
----. 1937. Analytic Syntax. Copenhagen: Munksgaard.
----. 1940-1949. A Modern English Grammar on Historical Principles, Pts. 5-7. Copenhagen: Ejnar Munksgaard.
Jones, Daniel. 1950. The Phoneme: Its Nature and Use. Cambridge: W. Heffer and Sons, Ltd.

Joos, Martin. 1950. "Description of Language Design," The Journal of the Acoustical Society of America, 22.6.701-8.
Kantor, J. R. 1936. An Objective Psychology of Grammar, in Indiana University Science Series. Bloomington.
Karcevski, Serge. 1937. "Phrase et proposition," in Mélanges de linguistique et de philologie offerts a Jacq. Van Ginneken... Paris. pp. 59-66.
Kelly, Walt. 1952. I Go Pogo. New York: Simon & Schuster.
Kluckhohn, Clyde. 1949. Mirror for Man. New York, Toronto: Whittlesey House, McGraw-Hill Book Co., Inc.
Koffka, K. 1935. Principles of Gestalt Psychology. New York: Harcourt, Brace.
Kroeber, A. L. 1936. "Culture Element Distributions: III, Area and Climax," University of California Publications in American Archeology and Ethnology, 37.3.101-36.
----. 1953. Anthropology Today. Chicago: University of Chicago Press.
----, and Kluckhohn, Clyde. 1952. Culture, a Critical Review of Concepts and Definitions, in Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University. Vol. 47, No. 1, Cambridge, Mass.
Lasswell, Harold D., Lerner, D., and de Sola Pool, Ithiel. 1952. The Comparative Study of Symbols. Stanford: Stanford University Press, in Hoover Institute Studies Series C: Symbols, No. 1.
Levi-Strauss, Claude; Jakobson, Roman; Voegelin, Carl F.; and Sebeok, Thomas A. 1953. Results of the Conference of Anthropologists and Linguists. Indiana University Publications in Anthropology and Linguistics, Memoir 8 of the International Journal of American Linguistics.
Lewin, Kurt. 1951. Field Theory in Social Science, Selected Theoretical Papers. New York: Harper & Bros.
Linguistic Bibliography for the Years 1939-50, Utrecht-Brussels: Spectrum, (by the International Committee of Linguists).
Linton, Ralph. 1945. The Science of Man in the World Crisis. New York: Columbia University Press.
Lounsbury, Floyd G. 1953. Oneida Verb Morphology, in Yale University Publications in Anthropology, No. 48. New Haven: Yale University Press.
McKinsey, J. C. C. 1952. Introduction to the Theory of Games. New York, Toronto, London: McGraw-Hill Book Co., Inc.
McQuown, Norman A. 1952. Review of Harris, Methods in Structural Linguistics, Chicago, 1951, in Language, 28.495-504.
Malinowski, Bronislaw. 1923. "The Problem of Meaning in Primitive Languages," in Magic, Science and Religion, Boston, Beacon Press, pp. 228-76. Reprinted from Supplement I to Ogden and Richards The Meaning of Meaning.
Marckwardt, Albert H. 1944. "An Experiment in Aural Perception," The English Journal, 33.212-14.
----. 1946. "Phonemic Structure and Aural Perception," American Speech, 21.106-11.
Martin, Samuel E. 1952. "Morphophonemics of Standard Colloquial Japanese," Language Dissertation, No. 47.
Mead, Margaret. 1952. "The Training of the Cultural Anthropologist," American Anthropologist, 54.343-46.
Mencken, H. L. 1945-48. The American Language: An Inquiry into the Development of English in the United States: Supplement I-II. New York: Alfred A. Knopf.
Morris, Charles. 1946. Signs, Language and Behavior. New York: Prentice-Hall, Inc.
Moulton, William G. 1947. "Juncture in Modern Standard German," Language, 23.212-26.
Müller, F. Max. 1876. Chips from a German Workshop. Vol. 4, Essays on the Science of Language. New York: Scribner, Armstrong, and Co.
Murdock, George P., Ford, Clellan S., and others. 1950. Outline of Cultural Materials, 3rd edition. Behavior Science Outlines, Vol. I. New Haven: Human Relations Area Files, Inc.
Nadel, F. S. 1951. The Foundations of Social Anthropology. London: Cohen & West, Ltd.
Nida, Eugene. 1947. "Field Techniques in Descriptive Linguistics," International Journal of American Linguistics, 13.138-46.
----. 1948a. "The Analysis of Grammatical Constituents," Language, 24.168-77.
----. 1948b. "The Identification of Morphemes," Language, 24.414-41.
----. 1949. Morphology, the Descriptive Analysis of Words. Second Edition, in University of Michigan Publication, Linguistics, 2. (First Edition, 1946).
----. 1950. Learning a Foreign Language. New York: Committee on Missionary Personnel of the Foreign Missions Conference of North America.
----. 1951. "A System for the Description of Semantic Elements," Word, 7.1-14.
O'Conner, J. D. 1951. Review of G. L. Trager, and H. L. Smith Outline of English Structure, Norman, 1951, in Le maître phonétique, 3rd series, No. 96.

Oftedal, Magne. 1949. "The Vowel System of a Norwegian Dialect in Wisconsin," Language, 25.261-67.
Opler, Morris Edward. 1948. "Some Recently Developed Concepts Relating to Culture," Southwestern Journal of Anthropology, 4.107-22.
Parsons, Talcott. 1951. The Social System. Glencoe, Illinois: The Free Press.
Paul, Hermann. 1889. Principles of the History of Language. Translated from 2nd edition by H. A. Strong. New York: MacMillan and Co.
Pickett, Velma. 1953. "Isthmus Zapotec Verb Analysis I," International Journal of American Linguistics, 19.292-96.
Pike, Kenneth L. 1943a. Phonetics: A Critical Analysis of Phonetic Theory and a Technic for the Practical Description of Sounds, in University of Michigan Publications in Language and Literature, 21. Ann Arbor: University of Michigan Press.
----. 1943b. "Taxemes and Immediate Constituents," Language, 19.65-82.
----. 1944. "Analysis of a Mixteco Text," International Journal of American Linguistics, 10.113-38.
----. 1945. The Intonation of American English, in University of Michigan Publications, Linguistics, 1.
----. 1947a. "Grammatical Prerequisites to Phonemic Analysis," Word, 3.155-72.
----. 1947b. "On the Phonemic Status of English Diphthongs," Language, 23.151-59.
----. 1947c. Phonemics, A Technique for Reducing Languages to Writing, in University of Michigan Publications, Linguistics, 3.
----. 1948. Tone Languages, A Technique for Determining the Number and Type of Pitch Contrasts in a Language, with Studies in Tonemic Substitution and Fusion, in University of Michigan Publications, Linguistics, 4. (Mimeographed edition; Glendale: Summer Institute of Linguistics, 1943.)
----. 1952a. "More on Grammatical Prerequisites," Word, 8.106-21.
----. 1952b. "Operational Phonemics in Reference to Linguistic Relativity," Journal of the Acoustical Society of America, 24.618-25.
----. 1953. "A Note on Allomorph Classes and Tonal Technique," International Journal of American Linguistics, 19.101-05.
Pittman, Richard S. 1948. "Nuclear Structures in Linguistics," Language, 24.287-92.
----. 1954. A Grammar of Tetelcingo (Morelos) Nahuatl. Language Dissertation No. 50.
Polivanov, Evgenij. 1931. "La perception des sons d'une langue étrangère," Travaux du cercle linguistique de Prague, 4.79-96.
Preston, W. D. and Voegelin, C. F. 1949. "Seneca I," International Journal of American Linguistics, 15.23-44.
"Projet de therminologie phonologique standardisée," Travaux du cercle linguistique de Prague, 4.309-23.
Read, Allan Walker. 1949. "English Words with Constituent Elements Having Independent Semantic Value," in Philologica: The Malone Anniversary Studies, editors T. A. Kirby and H. B. Woolf. Baltimore: Johns Hopkins Press.
Reifler, Erwin. 1953. "Linguistic Analysis, Meaning, and Comparative Semantics," Lingua, 3.371-90.
Robins, R. H. 1950. Ancient and Mediaeval Grammatical Theory in Europe with particular reference to modern linguistic doctrine. London: G. Bell & Sons, Ltd.
Roget, Peter Mark. 1933. Thesaurus of English Words and Phrases. Revised. New York: Grosset & Dunlop.
Rowe, John Howland. 1950. "Sound Patterns in Three Inca Dialects," International Journal of American Linguistics, 16.137-48.
Sapir, Edward. 1921. Language, an Introduction to the Study of Speech. New York: Harcourt, Brace and Co.
----. 1930. Totality, Language Monograph No. 6.
----, and Swadesh, Morris. 1932. The Expression of the Ending-Point Relation in English, French, and German. Editor, Alice V. Morris. Language Monograph No. 10.
----. 1949. Selected Writings of Edward Sapir in Language, Culture, and Personality. Edited by David G. Mandelbaum. Berkeley and Los Angeles: University of California Press.
Shannon, Claude E., and Weaver, Warren. 1949. The Mathematical Theory of Communication. Urbana: The University of Illinois Press.
Sheffield, Alfred Dwight. 1912. Grammar and Thinking, a Study of the Working Conceptions in Syntax. New York and London: The Knickerbocker Press.
Sinclair, Angus. 1951. The Conditions of Knowing. London: Routledge & Kegan Paul, Ltd.
Skalička, Vladimir. 1936. "La fonction de l'ordre des éléments linguistiques," Travaux du cercle linguistique de Prague, 6.129-33.

Slocum, Mariana C. 1948. "Tzeltal (Mayan) Noun and Verb Morphology," International Journal of American Linguistics, 14.77-86.
Smalley, William A. 1953. "Phonemic Rhythm in Comanche," International Journal of American Linguistics, 19.297-301.
Smith, William B. S. 1950. Review of: Robert A. Hall, Jr. Descriptive Italian Grammar, Ithaca, 1948, in Studies in Linguistics, 8.5-11.
Swadesh, Morris. 1934. "The Phonemic Principle," Language, 10.117-29.
----. 1937a. "The Phonemic Interpretation of Long Consonants," in Language, 13.1-10, 1937.
----. 1937b. "A Method for Phonetic Accuracy and Speed," American Anthropologist, 39.728-32.
Sweet, Henry. 1900a. A New English Grammar. Oxford: Clarendon Press.
----. 1900b. The Practical Study of Languages, a Guide for Teachers and Learners. New York: Henry Holt & Co.
----. 1913. Collected Papers of Henry Sweet. Oxford: Clarendon Press. Words, Logic, and Grammar, pp. 1-33, reprinted from Transactions of the Philological Society, 1875-86, pp. 470-503.
Symposium on American Indian Linguistics Held at Berkeley July 7, 1951. 1954. University of California Publications in Linguistics, 10.
Trager, George L. 1942. "The Phoneme 'T': A Study in Theory and Method," American Speech, 17.144-48.
----. 1944. "The Verb Morphology of Spoken French," Language, 20.131-41.
----. 1949. "The Field of Linguistics," Studies in Linguistics: Occasional Papers, 1. Norman: Battenburg Press.
----. 1952. "Recent Publications," Studies in Linguistics, 10.18-26.
----, and Bloch, Bernard. 1941. "The Syllabic Phonemes of English," Language, 17.223-46.
----, and Smith, Jr., Henry Lee. 1951. An Outline of English Structure, Studies in Linguistics, Occasional Papers, 3. Norman: Battenburg Press.
Trnka, B. 1935. A Phonological Analysis of Present-Day Standard English. V. Praze: Nákladem Filosofické Fakulty University Karlovy.
----. 1939. "On the Combinatory Variants," Proceedings of the Third International Congress of Phonetic Sciences, pp. 23-24.
Trubetzkoy, N. S. 1935. Auleitung zu phonologischen Beschreibungen. Édition du cercle linguistique de Prague.
Twaddell, W. Freeman. 1935. On Defining the Phoneme. Language Monograph No. 16.
----. 1936a. "Answers to Andrade's Questions," Language, 12.294-97.
----. 1936b. "On Various Phonemes," Language, 12.53-59.
----. 1946. "Reviews of Bases of Phonology by R. H. Stetson," International Journal of American Linguistics, 12.102-08.
----. 1949. "Meanings, Habits and Rules," Language Learning, 2.4-11.
Uldall, H. J. 1949. "On Equivalent Relations," Travaux du cercle linguistique de Copenhague, Recherches structurales, 5.71-76.
Voegelin, C. F. 1947. "A Problem in Morpheme Alternants and Their Distribution," Language, 23.245-54.
----. 1952. "Linguistically Marked Distinctions in Meaning," in Selected Papers of the 29th International Congress of Americanists, Editor Sol Tax. Chicago: University of Chicago Press.
----, and Harris, Z. S. 1952. "Training in Anthropological Linguistics," American Anthropologist, 54.322-27.
Weber, Max. 1947. The Theory of Social and Economic Organization. Translated by A. M. Henderson and Talcott Parsons. New York: Oxford University Press.
Wellek, René and Warren, Austin. 1949. Theory of Literature. New York: Harcourt, Brace and Co.
Wells, Rulon S. 1947. "Immediate Constituents," Language, 23.81-117.
----. 1949. "Automatic Alternation," Language, 25.99-116.
Welmers, William E. 1950. "Notes on Two Languages in the Senufo Group," Language, 26.494-531.
----, and Harris, Zellig S. 1942. "The Phonemes of Fanti," Journal of the American Oriental Society, 62.318-33.
White, Leslie A. 1949. The Science of Culture, New York: Farrar, Straus and Company.
Whitehead, Alfred North. 1925. Science and the Modern World. (References in the text are to the Mentor Book Edition, New York, 1952.)
Wilkins, John. 1668. An Essay Towards a Real Character and a Philosophical Language. London: Printed for Sa. Gellibrand, and for John Martin, printer to the Royal Societies.
Wonderly, William. 1951-52. "Zoque: Phonemics and Morphology," International Journal of American Linguistics, 17.1-9, 105-23, 137-62, 235-51; 18.35-48, 189-202.
----. 1952. "Semantic Components in Kechua Person Morphemes," Language, 28.266-76.
Zipf, George Kingsley. 1935. The Psycho-Biology of Language. An Introduction to Dynamic Philology. Boston: Houghton Mifflin Co.

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