A number of the axioms of tagmemics are explored in order to develop exercises based on these axioms about language structure but specifically designed to develop writing competence. Exercises for unit definition through contrast with other units; range of variability; and distribution in class, sequence, and system receive particular attention. Other exercises are concerned with (1) functional classes in slots, (2) interlocking levels of slots, (3) lexical, phonological, and grammatical hierarchies of levels, (4) meaning in relation to forms, (5) language units as particles, waves, or points in a linguistic field, (6) language as communicative, symbolic behavior, and (7) the nature of language change. (AF)

A Linguistic Contribution to Composition

A HYPOTHESIS

KENNETH L. PIKE

MY EXPERIENCE includes little direct connection with the teaching of composition either on the freshman level or with artistic aims. I have, however, been directly or indirectly involved in the training of 5,000 or more students in the initial phases of linguistics—especially in connection with the Summer Institute of Linguistics (with its principal training center at the University of Oklahoma), which is carrying on analytical work in some 260 languages in a dozen countries. In order to train these students to analyze and write descriptions of these languages we found it necessary to develop both a body of theory general enough to apply to any language whatever out of the several thousand in the world, and at the same time to invent exercises which would break down the learning problem into small bits in terms of simulated language—analytical situations. By isolating one component of a problem and building it into an artificial languagette for analysis, an extremely complex total problem can be tackled piecemeal. If all phases of an intricate problem are dealt with at once, on the other hand, training becomes diffuse, and satisfactory testing of results impossible.

It is from this background, when faced with the problem of Freshman Composition, that the query arose: *Would it be possible to explore a number of the axioms of such a language theory,[1] in order to develop exercises based on these axioms about language structure but specifically designed to develop writing competence?*

Underlying this question is the assumption that composition is but a specialized variety of the use of language, and that principles about language in general should therefore be exploitable for training in the more mechanical phases of the composition arts.

A composition style foreign to a beginning student—whether foreign because of its elegance, or its technical nature, or its contrast with oral style—must be learned *as a foreign language* is learned, by "hearing" it (in the analog of reading extensively and by "speaking" it (through its analog of extensive writing). Drills for this "essay dialect" or technical-writing style need to be broken down into drills on types of structure just as a language manual is.

The formal phases of writing comprise a set of structural habits, the productive control of written dialect, not a group of memorized propositions *about*

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1The specific theoretical approach utilized here may be called tagmemics, named after a grammatical unit proposed by the theory. Ex-

tensive discussion of the elements of the theory may be found in my **Language in Relation to a Unified Theory of the Structure of Human Behavior, Part I, 1964; Part II, 1955; Part III, 1960** (Glendale [now Box 1960, Santa Ana, Calif.], Summer Institute of Linguistics); and Dimensions of Grammatical Constructions, Language, 38.221-44 (1962). The clearest application comes in Velma Pickett, **The Grammatical Hierarchy of Isthmus Zapotec**, Language Dissertation No. 56, (Baltimore, 1960); and development of the theory in Robert E. Longacre, String Constituent Analysis, Language, 36.63-88, (1960).

Sample exercises in analysis of sounds are found in Kenneth L. Pike, **Phonemics** (Ann Arbor, 1947); in the internal structure of words in Eugene A. Nida, **Morphology, Second Edition** (Ann Arbor, 1949); in structure of sentences in Benjamin Elson and Velma B. Pickett, **An Introduction to Morphology and Syntax**, (Santa Ana, 1962), and in my Language, Part I, 1954, § 7.

More relevant to the student of literature are the artificial structures for exercise in translation, and the sample verse in such Lecture III of the series entitled Language and Life, Bibliotheca Sacra, 114.347-62 (1957).

spoken and written language. Learning to speak a language must not be confused with passing an exam about language structure. Some knowledge about the language is useful to the adult learner—but drills built to teach habits, along structural lines set forth by a linguist-plus-pedagogue team, make up the bulk of a successful language-learning course.

Accompanying this assumption, however, lies the belief that the individual artistic component of creativity is not directly accessible to the linguist—nor to any other scientist. No training in composition can guarantee that the students will develop into Miltons. Yet any artist uses certain tools competently. Drill on the use of particular language tools should be possible and, in theory at least, accessible to the linguist. Whether or not linguistic science has developed to where it can make a substantial contribution to composition, however, is precisely the point at issue.

A further assumption suggests more hopefully a contribution beyond that of mechanical form. If one assumes that thought itself is not fully structured until it is articulated through language—a view which I would personally hold—then an analysis of language forms would feed back on an analysis of thought structure.

It is from this view that I have been attempting to train people to write technical essays on linguistic structures. Currently, for example, the Institute has volumes appearing on the languages of Ecuador, Peru and New Guinea, where during the last two years I have been consulting with people working on some fifty languages. To the authors of these monographs I have insisted—since language and thought are intimately structured together—that sloppy rhetoric implies sloppy thought; that the careful analysis of the rhetoric of a paragraph implies an analysis of the thought structure underlying it. This view is empiri-

cally supported. Frequently when one queries an inadequate sentence in a technical essay one finds that a deeper conceptual difficulty prevents adequate rewriting until the analysis itself is clarified. Therefore training in detecting lack of clarity in mechanical expression has some useful transfer to creative thought.

With this explanation of our assumption that language theory is relevant to composition, I turn to a list of a few axioms about language accompanied by suggested exercises which might conceivably prove to be useful. This material is designed to be a hypothesis, not a solution—to stimulate professionals in the teaching of English composition to develop kinds of techniques on a more formal and systematic scale which they undoubtedly may have used informally or without reference to a specific theory of language. Nor does this approach claim to be complete. It touches on only a few of the basic problems.

Ideally this material should be accompanied by an anthology of writings which illustrate each of the points involved. Because of requests for access to it, however, it seemed wiser not to wait for the ideal, but to make the general suggestion available now. In order to be most useful, the material would eventually need to be cast in a form that teaching fellows without linguistic training can utilize. The testing of the fruitfulness of the suggestions must be carried out by literary scholars since the linguist has not necessarily learned either the pedagogy of essay writing nor the nature of its artistry and values.

(1) *A unit to be well defined must be treated in reference to its contrast with other units, its range of variability, and its distribution in class, sequence, and system.* This requirement applies to units whether they are movements, patterns, concepts, or things.

(1a) Only if a unit has been con-

trasted with other units is it well defined. *A unit is known well only if one knows what it is not.* Only if the essayist makes sure that the reader knows what the title does not cover, for example, is the topic well defined. This requirement applies to large units like a total essay or to small ones like this sound [b]—and to a table or a drawer in the table.

As components of a unit are identified which permit one to keep its nature negatively clear, these same components, once established, then serve positively to help one to recognize that unit at moments or places where the contrast cannot be directly established.

EXERCISE: Write an essay describing some item (e. g., a table, king, unicorn) or event (a wedding, jump, blink) in which the total attempt is to say what the unit is not. Set it off contrastively. Then rewrite the same essay varying the style by direct positive description.

Caution: First attempts at listing negative components of a unit may include many random and irrelevant items. Eventually, relevance and priority must come into the weighting of the components. As a corrective it may be advisable to draw, in advance, on (5) where elements of meaning, usefulness, and purpose have priority over form in human affairs.

(1b) Similarly, a unit is well defined only if its range of variation is made explicit. No action—for example—is exactly repeatable by the human being, due to physiological muscular limitations. If any movement is to be identified as the same as any other movement, or as having been repeated, *it is essential that the observer learn what differences he is to ignore.* Otherwise he may not separate irrelevant differences from relevant contrast, and his identification of a unit will falter. (Otherwise, for example, he cannot bathe in the 'same' river twice—or even recognize the girl he invited yesterday.)

Variation may be random (conditioned by no element in the observable context), or it may be caused by some component of the environment.

EXERCISE: Rewrite the essay of (1a) while focussing on the range of variation of the item—whether from age, accident, environment, etc.—rather than its contrast or identification. Add a comment to the essay discussing the differences of style resulting from the change.

(1c) A unit is, in addition, well defined only if its distribution is specified, with the unit seen as occurring as a member of a *class of alternatives,* which come in a particular slot (see 2) in a particular high-level structure. At the same place in the pattern or sequence of events what units might conceivably have occurred rather than the one observed? What choices, for example, might have been possible for John at the time he threw a touchdown pass?

EXERCISE: Choose from some pattern (or story) some thing (or event). List a number of different items which the culture might have allowed to occur at that place and suggest how the pattern or outcome would have been affected by each substitution.

(1d) A unit is well defined only if its distribution is specified in reference to the particular *sequence of specific items with which it can occur, or with which it characteristically occurs.* The more frequently a word occurs with a particular set of other words, for example, the more that set becomes the normal defining context for the meaning of the term. The more rare the particular distribution the more of a semantic impact it has; poetic discourse and slang utilize special linguistic or social distributions for affecting the audience.

EXERCISE: Describe various kinds of patterns or contexts in which the item of (1a) is expected to occur—and write an essay or story in which its unexpected occurrence becomes crucial.

EXERCISE: Write a conversation in which controlled juxtaposition of words radically affects the style of the output, by having one speaker in the dialogue utilize extensive clichés, and the other speaker utilize discordant juxtapositions of words in an unexpected variety.

(1e) A unit is well defined only if its distribution is specified in reference to its occurring in a system. System can often be best understood as an *intersecting network* of contrasts. For example, in a phonetic chart such as

p	t	k
b	d	g
m	n	ŋ

the three columns (vertical dimension) show, respectively, action at the lips (p, b, m), at the tongue (t, d, n), and at the back of the tongue (k, g, ŋ). The three rows (horizontal dimensions show air stopped in the mouth (p, t, k) air stopped in the mouth but with the vocal cords vibrating (b, d, g), air stopped at the mouth exit but not at the nose (m, n, ŋ). The unit [b] is defined, in this system, as coming at the intersection of the lip action and the closed mouth with vocal cord vibration.

EXERCISE: Taking for one dimension the contrast between formal and casual style, and for the other dimension standard and substandard dialects, rewrite a paragraph of one of the earlier essays using successively each of the four styles implied by the intersecting dimensions. Then, as a further dimension, add universe of discourse differences—science fiction on Mars versus young child in a nursery—and discuss the further changes that would be needed to meet the requirements of the implied patterns.

(1f) When an essay as a whole is considered as a unit, it too may be well defined. Tests of an essay in this framework can in part answer the question: *How do you know when you have thought well?*

EXERCISE: For some essay or story given you, test for its well-defined character. Does the essay derive some of its distinctive features from negative limits placed on the topic? How are these related to elements positively identifying the topic? Does the essay clearly set up the limits of variability of its topics? Was the topic integrated with choices in a higher-level cultural situation? Or logically or in sequence close to it? Is the topic treated as a point of intersecting dimensions in a larger universe of discourse?

(2) *A repeatable, relevant pattern of purposive activity is made up of a sequence of functional classes-in-slots.* I have stated (1c) that membership in a class of alternatives in a slot of a structure is relevant to the definition of a unit. Now we go further, stating that a structural pattern is composed of sequences of functional slots meaningful to the culture, and with each slot having a class of alternative units eligible for filling it. (The combination of slot-plus-class is called a tagmene; a sequence of tagmemes makes up a construction. The subject-as-actor, for example, is a tagmeme in a transitive clause construction illustrated by the sentence *John saw Bill.*) The presence of slots, with their alternatives, allows behavior to be segmented into relevant parts.

EXERCISE: Choose a short story. Cut it up into episodes. Discuss, for each, some alternative events which might have occurred, instead, at that point in the story. Show how different choices would have changed the story. Then show how the particular sequence of episode types in this story is a culturally-provided sequence of choice-points-and-alternative-decisions w h i c h sets a framework for the development of a particular set of quite different—even antagonistic—character types.

EXERCISE: Write two brief essays in which some situation is chosen such that the beginning, or ending, or progression of the two essays is identical but at certain points different alternatives are chosen. Try writing a paragraph or a few lines of verse in which at some one point extensive verbal alternatives are suggested.

(3) The slots occur in *larger and larger units of interlocking levels.* Simple words like *boy* occur in slots within phrases like *the big boy.* Phrases like *the big boy* occur in clauses such as *I saw the big boy.* Clauses occur in sentences, which occur in paragraphs, in monologues, in discourse, and in conversation or larger formal literary units.

Between the levels some languages give intricate concord. Affixes of words (subject-object pronouns, tense indicators, and so on) may be in agreement with independent parts of the clause or sentence. Thought structure and its language analogs sometimes involve writing which ties the large to the small level.

EXERCISE: Write an essay in which microcosm and macrocosm are somehow integrated (e. g., where home-situation detail is intimately linked in concord with a job in a larger social environment).

(4) *A three-way hierarchy of levels is found in natural* human language and in other purposive activity. The structure of language is not a simple hierarchy of levels; rather, it is an interlocking set of three hierarchies—lexical, phonological, and grammatical.

(4a) The *lexical hierarchy* includes word parts (such as the plurals of *boys*), words, phrases, clauses, and so on—the specific lexical bits. A specific sonnet would be a high-level unit in the lexical hierarchy.

On low levels, or high levels, words can be used in normal distribution with central meaning, or in special distribution with metaphorical meaning of special impact. An essay may include metaphor at the low level—(*a boy is a fox*) —or at a high level (images, similes, or a poem as a whole involving a symbolic response).

In a poem the lexical structure may have reference to recurrent words of a related set (*spring, summer, fall*). It may refer rather to instance and class such as *dog, animal.*

EXERCISE: Write an essay, using words in their central meanings. Rewrite the essay using metaphor extensively. Rewrite, presenting the same topic through a single extensive analogy, or parable. Rewrite, seeking higher impact for the same topic by creating a poem which indirectly implies the same attitude to the topic.

(4b) The *phonological hierarchy* at the lower level includes small components such as the sound [b] in which the lips close while the vocal cords vibrate. Sounds combine to form larger units — syllables, stress groups, pause groups, and the like. The phonological hierarchy is utilized for structural purposes beyond the routine of syllable structure when patterns of rhyme, patterns of meter, or other recurrent phonological elements—say intonation—are involved.

EXERCISE: Build some verse in which you use choices in phonological slots, leading to rhyme. Then a few lines exploiting phonologically-controlled sequence, leading to alliteration. Then build some verse in which the smaller bits are integrated with a larger pattern of recurrent stresses in such a way that the number of syllables and sounds is ignored, but the recurrent pattern of accent becomes especially meaningful.

EXERCISE: Study contrastive intonation markings of an essay (or poem) through various transcriptions of several differ-

ent readings[2] of the essay as given you by your instructor. Rewrite the essay trying to give in words the effect obtained by the intonation.

EXERCISE: Write an essay or poem. Mark it crudely for pitch and accent. (Do not worry if it is inaccurately done.) Re-mark the essay with an intonation which, by implying sarcasm, reverses the meaning of it.

(4c) The *grammatical hierarchy* includes levels of tagmemic slots and of constructions (cf. 3).

Possibility for development of writing power includes the ability to exploit all the construction resources of the language— complex sentences, and paragraph, discourse, or genre structure—and their cross-linkages. The grammatical hierarchy may be distorted for special effects.

EXERCISE: Write a brief essay in which only complex sentences are used—with each sentence representing several levels of the grammatical hierarchy. Rewrite, utilizing exclusively short, simple sentences.

EXERCISE: Select a poem. Discuss the manner in which the author exploits all three hierarchies at various levels of each.

(5) Language is a composite of form and meaning. If a person tries to study meaning without reference to the formal structure of language, he may end up with no structuring at all. *Meaning does not occur in isolation, but only in relationship to forms.* To a very great extent, at least, thought patterns can develop with clarity only as internal or external speech develops in an organized fashion—or as it gradually gets organized on paper. Purpose, in nonverbal action, is the analog of meaning in language.

EXERCISE: Select a paragraph from an essay. Can you identify some concepts which could not be conveyed by gesture or picture? How does language allow for thought development in this instance?

EXERCISE: Write an essay matching form to action type, for reinforcement of impact. Choose, for example, some kind of action which is sharply, quickly varied. To describe it use a language structure varying sharply in lexical type, accentual patterns, word length, and grammatical complexity. Then choose a smoothly-developing situation and a smoothly-flowing language situation to discuss it.

EXERCISE: Write a story in which three episodes[3] would appear identical to a camera, but the meaning, purpose, and relevance differ sharply because of the larger situations of which they are a part (murder, insanity, loyalty). How does this exercise differ from (1c) or (2)?

(6) *Language units can be viewed as particles, or as waves, or as points in a linguistic field.* Tagmemic theory emphasizes that the human observer must successively vary his viewpoint to each of these three if he wishes to experience fully any unit. Each of the three is in some sense, at some times, common to human behavior and human experience.

(6a) For some analytical purposes the observer must view behavior as a *sequence of particles* (*or segments*). Perhaps this is the way in which a person most usually sees units. The possibility of segmentation is correlated with alternatives available (substitutable) at a choice point (see slot and class in 1c and 2).

EXERCISE: Write an essay. Make sharp the segment borders so that the parts of the essay following one another in sequence are specific, separate chunks. Show their sharp-cut relationships to slots in a higher structure implied by the essay.

(6b) For some other purposes, how-

2For a poem of Emily Dickinson marked by line drawings for three distinct intonation patterns, see my **Language,** Part III (1960), § 13.5.

3See my Operational Phonemics in Relation to Linguistic Relativity, **Journal of the Acoustical Society of America,** 24.618-25, (November, 1952.)

ever, the observer must study the same units as *waves in which the borders may fuse* into one another in a physical continuum. This fusion results in an indeterminacy of segment borders.

EXERCISE: Rewrite the essay of (6a). Fuse every part of the essay into its neighbor with smooth overlapping transitions. Let paragraphs slur together. Exposition of the second part must be anticipated before the first ends. Physical components of the activity described should be highlighted to make easier the description of anticipatory action.

(6c) For still further purposes the observer must treat language as some kind of field. In this view the units become intersecting points of contrasting features (1e) of form and of meaning (5) *in the network of a background system.*

EXERCISE: Rewrite the essay, above. The units as chunks or segments should now be out of focus and the physical characteristics should be softened. Focus, rather, on the total situation as an intricate web of intersecting elements no one of which can be clearly separated from the others. Differing personal intentions should show up through identical actions (see fn. 3 in 5); some intentions may be manifested in a variety of actions (see 2); and fusion occurs in sequences of actions (see 6b).

EXERCISE: Rewrite the essay, moving from one of these points of view to the next, successively, to give effects of sharp structural perception, then of concrete physical impact, and finally of total understanding of a life system.

(7) Language must be analyzed as social behavior. Speech is an act. Although code or symbol is involved, *language is communicative, symbolic behavior*, not a total abstraction from action. Speaker, hearer, and the connecting social and physical setting are relevant to the understanding of the language act.

Communication, in this view, may be called a "molecule" with two "atoms."

The first is the formal component—words, sounds, grammar. The second is a social one. Only when language occurs against an adequate background of shared social system and social behavior does communication take place—or foreign languages get learned easily.[4]

EXERCISE: Write an essay illustrating lack of communication when social backgrounds differ. Rewrite it, illustrating difficulties of other classes of listeners.

(8) *Change passes over a bridge of shared components.* Tagmemic theory suggests that change never occurs in terms of action at a distance, but only over a bridge[5] made up of some shared component. Syllables change by merging at their borders. Words change by fusion, as the phrase *as you* may smear in fast speech. Systems of language smear also, in that words from one may be borrowed by the other through bilinguals who share the two.

EXERCISE: Write an essay stating two different but related points of view. Then rewrite the essay showing how someone found his view changing, pivoting on some shared component of culture or language or experience.

Rules and patterns cannot of themselves create a man. Something within him, beyond language forms or training, determines whether he will be highly creative of beauty or of truth. The depth of beauty of his production—or even the fact that he produces at all—may nevertheless depend on his understanding of the language mechanisms of beauty and pattern.

After the mechanism, or along with it, must come models. The artist in embryo must study the artist in fact. At this point—if not long before—I cease to be one of his teachers.

4Nucleation, **The Modern Language Journal**, 44.291-95 (1960).

5Toward a Theory of Change and Bilingualism, **Studies in Linguistics**, 15.1-7 (1960); and Stimulating and Resisting Change, **Practical Anthropology**, 8.267-74 (1961).