

WHY LANGUAGE IS STRATIFIED?

Adam Makkai
University of Illinois at Chicago Circle

1. A Note on the Social-Historical Setting of Stratificational Grammar

During the development of a young science such as ours, it happens frequently that technical terms become overassociated with feuding factions and their militant views on various aspects of the discipline. This has the unfortunate side-effect that, for practitioners of the more militantly new or more aggressively conservative brands of linguistics, terms of the 'youngest' school of thought may become subject to psychological taboo repressions. What exactly motivates such taboo repressions is difficult to say and is beyond the scope of this paper, but I am sure that it has a great deal to do with what psychiatrists commonly call 'the narcissistic shock-effect of the novelty-reaction' which, moreover, is probably enhanced by common envy and not infrequently by narrow local patriotism and devotion to the received, the familiar. Thus, while the terms deep structure, surface structure, transformation, and semantic projection rule, if not exactly over-celebrated, can at least be discussed with a reasonable amount of objectivity at Yale, stratum, sememe, lexeme, relational network, and realization rule are, if not downright anathema, at least the subject of abuse and ridicule at MIT, and most institutions whose linguists are under the ideological persuasion of MIT. This, I think, is primarily a social phenomenon stemming from the fundamental insecurity linguistics as a science in statu transformandi if not nascendi suffers from, vis-a-vis such older and better established sciences as chemistry, physics, or even clinical psychiatry.

Worse yet, the polemics between MIT and Yale obscures the fact that the true nature of any language is essentially independent of the methods and assumptions any school of linguistics has hitherto been able to develop.

The science of physics reached by 1969 the modesty of Heisenberg's famous indeterminacy principle first formulated in the 'twenties and 'thirties' according to which natural phenomena cannot be observed in total objectivity because the act of observation interferes with the natural state of the objects of phenomena observed. All science really is, is a method of projecting our internal mental structures on the observed objects and phenomena. Heisenberg's philosophy is, nevertheless, not a return to the dark ages of Bishop Berkeley's idealistic solipsism, but rather to the notion of Immanuel Kant's "Ding an sich" and the categorical imperative as presented in The Critique of Pure Reason. Thus

it is entirely different to say that we cannot observe physical phenomena objectively in 1969 when two human beings have landed on the Moon than it was to say something similar before the discovery of the steam engine; for Kant the inobservability of an object's true inner nature was a prescientific rationalistic postulate, for Heisenberg today it is a post-scientific attitude of utmost humility and modesty.

In linguistics today we have essentially two legs to stand on. These are the observables of the analyst's source and target languages, and second, the methods and mental postulates (behaviorism being just one of these mental postulates) that guide us in making statements about the observed phenomena of a given language. General attitudes toward science as well as toward problems involving a Weltanschauung have a remarkable tendency to influence each other. One is, in this specific sense, truly a product of the age one lives in. Consciously or unconsciously, the fact that our scientific age is gradually beginning to turn into its second, more mature phase, conveniently describable as post-scientific, (in the sense of Lukacs 1968) had its inevitable imprint on linguistics as well. The scientific, objective art of observation and classification has come to be regarded as secondary in significance, inferior, a mere act of taxonomical data-gathering, while theoretical linguistics, the new trend in our discipline, has become subject to opposing schools of philosophy. Quite understandably, this turn toward philosophical-mathematical or logical linguistics became fashionable in the middle of the 20th century, after a generation of dedicated, essentially anthropologically oriented scholars carefully and successfully cleared the way to the art of describing unknown languages. We can say, in other words, that adding the results of structural linguistics and the erudition of some of the best traditional grammars, at least the basic facts of English, for one, could be taken for granted by 1957, when Chomsky's revolution began.

In Chomsky's early work, essentially Syntactic Structures (1957), it was assumed that a grammar of the highest possible descriptive, and eventually, explanatory power, that is a transformational grammar, should consist of three portions: a set of phrase structure rules, a set of transformational rules, and a morphophonemic component. Language was viewed as a machine that generates an endless number of well-formed sentences by applying these transformations to a limited number of kernel sentences, the result of such operations being processed by the morphophonemic component for actual pronunciation. Soon thereafter numerous exceptions and loopholes appeared in the Chomskyan framework, and the attention of transformational-generative grammarians gradually began to shift toward semantics. It was intuitively noted, if never quite overtly expressed, that the

independence of the grammatically well-formed sentence, such as the syntactic well-formedness of Chomsky's aborted line of non-poetry colorless green ideas sleep furiously, tacitly implies the fact that syntactically illformed sentences may yet be semantically quite well-formed. To my knowledge, TG grammarians have not been able to size up this problem realistically to the present day.

To illustrate my point: if colorless green ideas sleep furiously is syntactically well-formed, and only 'semantically nonsensical', one can find cases illustrating the opposite, as in the speech of recent immigrants, natives of Puerto Rico, Hawaii, or speakers of other nonstandard dislects. The Hawaiian pidgin English sentence if ol man no come I no pay deal finish is quite impoverished in its syntax (at least from the point of view of Standard American English), but it is, nevertheless, quite sensible, so sensible indeed, that fortunes change hands day after day based on transactions so encoded.

Since, in TG theory, syntax was still considered the primarily creative level with semantics and phonology being merely interpretive, MIT now saw fit to move toward a double-standard in syntax, known as the deep structure and the surface structure (Chomsky 1965). The philosophy behind this division of syntax into two portions may be summed up as follows: If syntax is creative and semantics interpretive, the syntax of speaking cannot be the same syntax that originally generates a sentence, but there has to be another syntax, a deeper layer of it, which has the potential of conceptual decision making and the selecting of dictionary entries. Thus, the sentence the dog may have seen the man who was sleeping, according to one wide-spread variety of TG grammar (Thomas 1965), more and more repudiated by leading transformationalists themselves (McCawley 1966, unpublished), is understood to be generated on the deep structure level as: $\# S \# \Rightarrow \text{Nom} + \text{VP} \Rightarrow \text{Det} + \text{Art} + \text{N} + \text{No.} + \emptyset_2 + \text{Aux} + \text{Tn} + \text{Pres} + \text{Modal} + \text{may} + \text{have} + \text{-en} + \text{MV} + \text{V} + \text{V}_t + \text{Nom} + \text{Det} + \text{Art} + \text{N} + \text{No} + \emptyset_2 + (+S) + \text{Nom} + \text{Det} + \text{Wh-} + \text{N} + \text{No} + \emptyset_2 + \text{VP} + \text{Aux} + \text{Tn} + \text{Past} + \text{be} + \text{ing} + \text{MV} + \text{V} + \text{V}_i$, which, then, is carried to the surface structure by applying the appropriate transformations, so that, lastly, the surface structure may serve as input to the 'morpho-graphemic' or morphophonemic rules, depending on whether we write or talk. Having thus divided syntax into a deep structure and a surface structure, it seemed desirable to MIT grammarians that semantic specifications of what may co-occur with something else should be planted in the deep structure derivation in terms of semantic valences. Thus it was decided that *sincerity admires John is ungrammatical, because in the deep structure sincerity received the valence 'inanimate' while John has the valence 'animate' and 'human', with 'admire' having the valence 'human' also; thus John may admire

sincerity, but sincerity may not admire John. This, however, continued to be regarded as a matter of syntax. Lexical items were loaded with semantic valences, sometimes explicitly, sometimes less explicitly. It was maintained that whether or not a lexical item had a privilege of occurrence in construction with another was a syntactical property of the item in question. Yet a lexical entry was subject to syntactic arrangements as regulated by its semantic valences. It was asserted, for instance, that she was intelligent in New York last year and he was tall in Japan last year were ungrammatical precisely because intelligent and tall are permanent qualities, thus necessitating a semantic valence 'permanent quality' whereas in New York last year or in Japan last year are spatio-temporal adverbial phrases thus necessitating a semantic valence of 'temporality', and, temporality and permanency do not mix.

It is strikingly obvious, however, that whenever the TG grammarian disallows a sentence, somebody else has relatively little difficulty in coming up with a counterexample, or the same example embedded in a context where the forbidden sentence suddenly loses its putative ungrammaticality. Thus she was intelligent in New York last year may be salvaged if we say she was intelligent in New York last year to have refused bribing the policeman, though obviously stylistically inferior to saying she acted intelligently when she refused bribing the policeman. He was tall in Japan last year may very well occur in an enthusiastic sports announcer's speech as he says he looks sad now but how tall he was last year in Japan standing on the gold medal winner's stand while they played the National Anthem.

The most sophisticated practitioners of TG grammar noticed this inherent capacity of natural languages which I propose to call the contextual adjustability principle, and a new trend in generative grammar began, the main purpose behind which seemed to be the elimination of the distinction between deep and surface structure with a more detailed, systematic inclusion of semantics in the generative process of speech. (McCawley 1967, Lakoff 1968).

It is my intention to show in the present paper that TG grammar has been operating all this time with an inexplicitly stratified system, the quasi-stratal distinctions of which have been additionally blurred by the MIT grammarians' preoccupation with sentence syntax at the expense of other possible and highly significant syntaxes: what are called in stratificational grammar phonotactics (the syntax of the phonemic stratum), morphotactics, (the syntax of the morphemic stratum) and, lastly, semotactics (the syntax

of the level of meaning). As has been convincingly shown by Lamb (1968), the TG grammarian's deep structure could roughly correspond to the stratificationalist's sememic stratum, the surface structure to lexotactics, in addition to which the MIT grammar recognises a semantic component and a morphophonemics. Inexplicitly, and with a great deal of intermixing of one level with another, then, most TG grammars recognize at least four strata, though they religiously refuse to admit it, preferring the vague and unfathomable paraphrase of 'compartment' or 'portion' or 'component' of the grammar. No wonder, since the very term stratum underwent, for MIT-influenced linguists, socio-psychological taboo repression.

In contradistinction, stratificational grammar clearly recognizes six strata for natural languages. The two farthest apart are the hypersememic (by convention on the 'top'), and the hypophonemic (by convention on the 'bottom'), dealing with substance, and articulations respectively. The four intermediate strata are what properly constitute grammar.

The Evolution of Lamb's Diagram of Linguistic units and their relations.

Figure 1/a

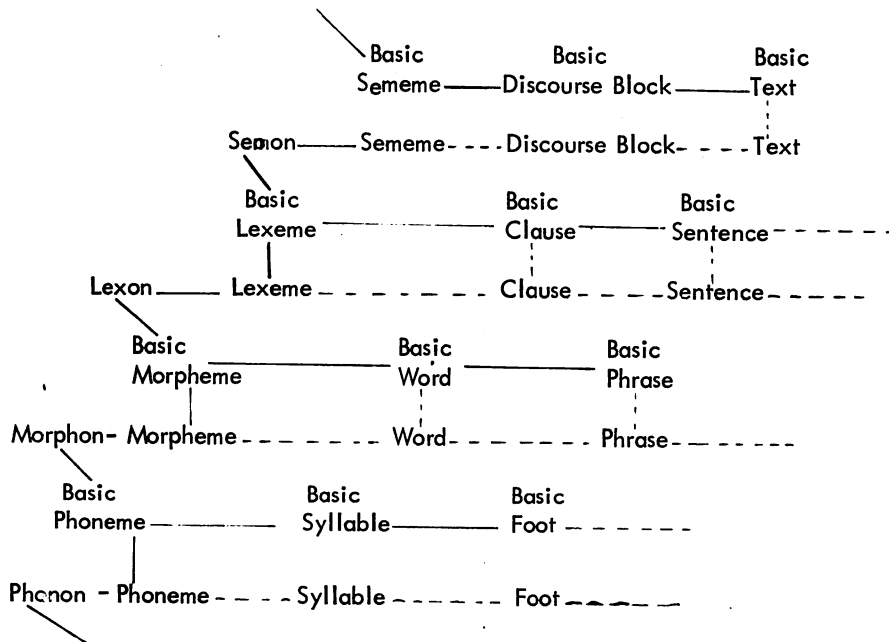
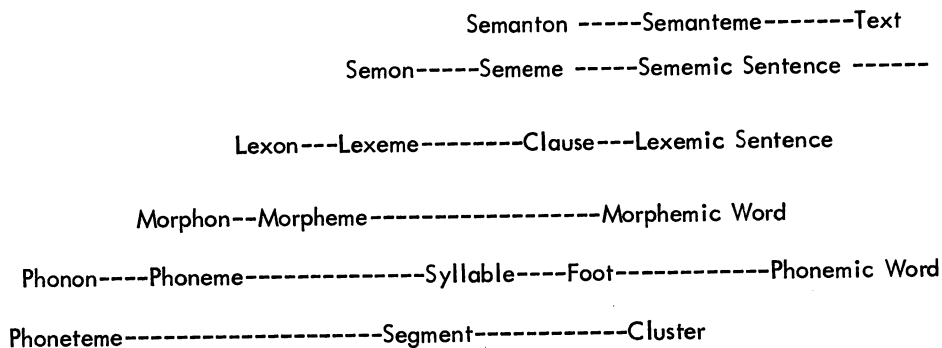


Figure 1/b



Early 1966 version, unpublished. Redrawn from personal letter by Lamb.

Figure 1/c

STRATA

HYPERSEMEMIC

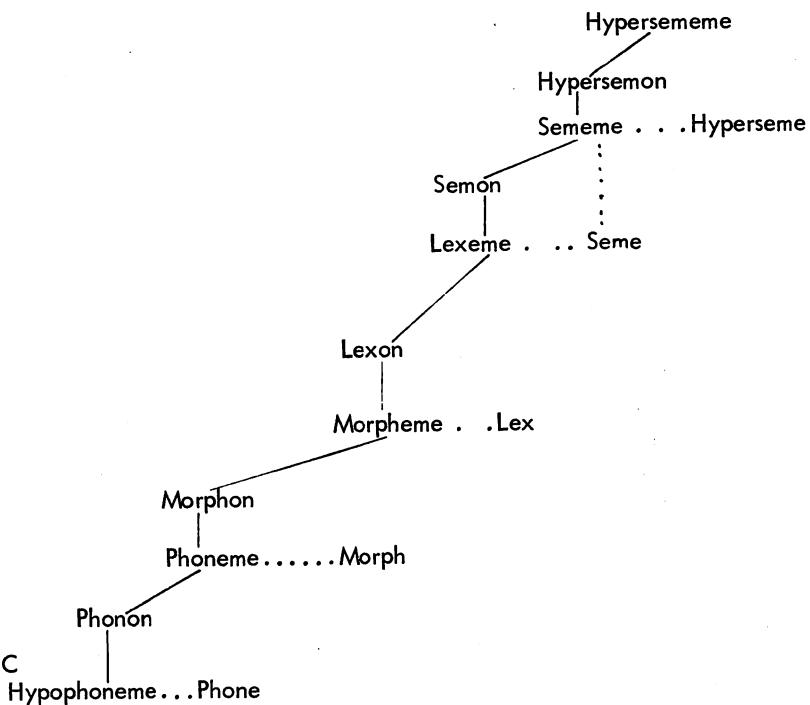
SEMEMIC

LEXEMIC

MORPHEMIC

PHONEMIC

HYPOPHONEMIC



Latest published version of 1966b.

Figures 1a, 1b and 1c illustrate how each basic unit of each stratum, called the -eme of that stratum, is realized by its corresponding -ons. The suffix -eme in stratificational grammar does not suggest the familiar notion of Neo-Bloomfieldian distribution classes, but rather a basic unit of a formal structure, which is realized, rather than constituted, by the unit or units to its immediate left ending in the suffix -on (borrowed from physics, as in neutron, electron, indicating an elementary particle). The -ons of each stratum dominate the -emes of each stratum below.

The reason for reproducing these three versions of Linguistic Units and their Relations is to show that even though Lamb has been constantly modifying and refining the theory, the number of essential strata has remained steadily the same since the publication of his first major statement on the stratification of language, in 1964. This essential fact cannot be overemphasized, since reviewers of Lamb's work apparently consistently fail to understand the basic nature and use of these strata. Consequently, in the second part of this paper, I will attempt to answer three published reviews of Lamb's Outline of Stratificational Grammar, by Wallace L. Chafe (1968), Charles F. Hockett (Hockett: 1968), and Don R. Vesper (Vesper: 1969).³

2. The Anatomy of Four Nonreviews of Lamb's Outline.

2.1 The first of the four criticisms of Lamb's Outline (and stratificational grammar in general) was written by Charles F. Hockett (1968). One of the original stratificationalists himself (cf. Hockett: 1961) and credited by Lamb in several passages with having established the separateness of the phonemic and the morphemic strata, Hockett in his present review reneges on his own original contribution when in concluding he writes:

So, in the end, how many strata do we need? Not Lamb's current eleven, or six. Not my two of 1961. Not even just one. None at all. The stratificational view was an error from the outset.

The scientist's basic right is the right to be wrong. Negative results are valuable. . . . We must ask what advances we have made in our understanding of language since Bloomfield's masterly synthesis of 1933. In phonology, there have been some important clarifications. . . . In descriptive grammar, I believe we must admit to having made no positive progress at all. (p.153).

As far as Hockett's own rejection of his earlier work is concerned, one can only add that one of the scientist's additional rights is the right to be wrong about once having

been allegedly wrong; moreover, every scientist should be officially allowed to exercise self-criticism in public if this enables him better to tear down and defeat a member of a competing school of thought. If Toynbee and Bertrand Russell have done it, why shouldn't Hockett do the same?

More seriously, however, Hockett makes the following criticisms:

Nowhere is there any close empirical argument in support of this formulation of language design as over against others. I don't think Lamb realizes that this is missing. I fear he has become so enslaved by his own frame of reference that, quite like the transformationalists, he can no longer distinguish between the object of linguistic investigation and the terminological and symbolic machinery we use in that investigation. (Fn. This key source of error in the work of Chomsky is examined in detail in my *The State of the Art* (Mouton: *Janua Linguarum, Series Minor* 1968). It is much as though a pathologist were to develop the notion that slides and lenses are vectors of disease. (p.147).

The objective reader of Hockett's article cannot escape the impression that more important than proving that Lamb has provided no proof of his strata is the point that the two most prominent modern theoreticians, Chomsky and Lamb, much as they disagree between themselves, must be cut down together in favour of rehabilitating Bloomfield. Hockett then lines up the final argument against stratificational grammar thus: he says that Lambian diagrams could be justified in either of two ways, namely, first, by saying that even though prose statements might often do better than diagrams in reporting certain linguistic situations, there are cases when a diagram does better. This Hockett rejects by arguing that even the most correct diagram must be read, which, he says, is painfully slow, and all that really happens during the reading of such a diagram is that one translates it back into prose. The second argument 'in favour' of strata is worded as follows:

Diagrams of the right sort subsume and highlight certain elements and relations that the most nearly equivalent prose statements cover awkwardly or not at all. (p.148).

Then, on p.150, the rejection of this argument:

Now, if we accept all these kinds of linguistic elements as things 'in a language', then we find that the second possible justification of Lamb's diagrams is valid. His diagrams indeed show the status of elements of these types relative to one another, and the functional connections among them, with a

clarity it would be difficult to attain in the type of expository prose traditional in linguistics. The examples on pages 13 and 16 are wholly convincing.
(my italics, AM)

In part 3 of this paper I intend to present what I consider empirical arguments of the sort Hockett seems to demand. Before presenting this 'evidence', however, I intend to highlight the main objections of the reviewers. Hockett's final and worst misunderstanding occurs on p.152:

Is the customary replacement of 'good' by 'bet-' before comparative '-er' to be provided for between hyper-sememes or sememes, between sememes and lexemes, between lexemes and morphemes, between morphemes and phonemes, or between phonemes and hypophonemes? I submit that this is a pseudo-question, an artifact of the frame of reference. The diversity of the facts of language is much greater than the diversity of treatment allowed for by stratificational grammar; that is perhaps the reason why more and more strata have been recognized, with no obvious limit in sight.
(My italics, A.M.)

The question about where the alternation between 'good' and 'bet-' occurs is appalling from a linguist of Hockett's sophistication. Anybody who has read Outline with any degree of objectivity, would immediately see that 'good' - 'bet-' is a lexo-morphemic alternation, and that alone. *Gooder and *bader are frequently observed in children's speech, in the speech of uneducated immigrants, etc., and the native speaker hasn't the slightest difficulty in understanding what is meant. What the native speaker concludes upon hearing *gooder and *bader is something like this: 'You are uneducated and you have made a mistake: you ought to have said better and worse, since these forms are irregular, but never mind, I actually understood you.' Since common sentence constructing occurs on the lexemic level with the sememes being the result of the decoding of sentences, and morphemes and phonemes being the result of further encoding (i.e. expressing) them, translated into linguistics, the native speaker's judgment really means: 'You have made the right lexotactic arrangement, hence I understand you, but you have selected the wrong morphotactic arrangement; given another adjective such as loud or clear you could have said louder or clearer without having to select another form to stand in for the original form.'

Nor is it true that there is no obvious limit in sight as far as the number of

strata is concerned. Ever since 1964, Lamb has been operating with four central and two peripheral strata. Further refinements of the actual nature and inner structuring of these stratal systems are due to a systematic inclusion of the tactics of each respective stratum resulting, as it were, in a multi-dimensional view of the units in them. These refinements of the theory, however, do not amount to the establishing ad libidum of new strata, just as the invention of the microscope or of the sonar telescope did not change the nature of the bacterium or the planet investigated, only a powerful magnification of the image visible to the investigator was achieved. The strata have remained the same and will, in all likelihood, remain the same. What goes in them and how, is the subject of the ever expanding investigation Lamb and his associates are engaged in.

2.2 Far less challenging than Hockett's is the review by Wallace L. Chafe of the University of California, Berkeley (1968). Whereas Hockett at least clearly demands a set of reasoned and empirical arguments for the stratificational view of language (see part 3 of this article), Chafe, himself a stratificationalist of sorts, a fact he insists on in several passages, after having overtly confessed to his anti-Chomskyan leanings in linguistics, pronounces that the problem with Lamb's approach to language is that he thinks it is stratified. I have read this amazing nonreview several times, and have not been able to come up with a better summary of it than this:

(1) Outline of Stratificational Grammar originated at Berkeley where other faculty members helped Lamb write some of the exercises, but the present version is a new piece of work.

(2) Lamb misquotes the Paribhasa quotation whereby the grammarian rejoices more over saving half a mora than over the birth of a son; in the original the grammarian rejoices just as much, but this is excusable because Lamb has three daughters (sic!).

(3) Lamb is right and Chomsky is wrong in deciding the status of semantics in linguistic theory, but he, Chafe, expressed the same opinion several times and independently of Lamb.

(4) Language is an elephant that linguists have pawed over for many centuries and nobody knows what it is like. Lamb's trouble is that he has concluded that the elephant is stratified.

(5) Lamb's misconceptions about language's being stratified can be explained in historical terms. Here Chafe devotes four and a half pages to a minor phonological problem and succeeds in explaining that what Lamb allocates to the lower and upper strata of the phonology are in fact the results of two successive historical changes. Then he writes on p.598:

The point I have tried at some length to make is that the facts about language which Lamb sees as evidence that language is stratified are to a large extent the consequences of historical change. (I would hold that this is true not only in phonology, but in the rest of language too. Synchronically we can describe these facts adequately only by means of rules of a type which mirrors the historical process. History is not stratified. There was not a sudden jump from some homogeneous past stage of Monachi or Caddo or English to the present stage. Rather, a series of changes were spread unevenly over each language's past. An adequate synchronic description, it seems to me cannot help but reflect this background. (My italics, A.M.)

First of all, Lamb has never claimed that languages have no history and arise suddenly, but rather that they arise in uneven formations, so that the only way to describe them, especially the irregularities, is the stratificational way. Lamb has pointed out in numerous lectures that if process description in linguistics has a place, it properly belongs in historical linguistics. Descriptive linguistics, however, is understood in stratificational linguistics as a strictly synchronic operation, much in the spirit of Saussure's separation of the study of linguistics into diachronic and synchronic subdisciplines. As it happens, the evolution of languages is uneven, unpredictable, and thus results in a structure which has many archaic features intermixed with newer, more regular developments.

Consider the case of the English strong verbs sing-sang-sung, sink-sank-sunk, swim-swam-swum etc., versus the overwhelming majority of the regular or weak verbs which form their past tenses and past participles according to mechanically predictable 'morphophonemic rules', which, as we all know, derive from the Germanic dental preterite. For all one's knowledge of Indo-European, the fact remains that there are a handful of irregular verbs and a large number of regular ones. Historical awareness of where they come from is part and parcel of every linguist's graduate curriculum. This, to my mind, however, in no way effects the complicated synchronic relationships we must account for in describing the encoding of past tense and past participle lexons as they behave vis-a-vis sing-sink-swim, and walk, hug, love. To put it another way, the naive linguist can only make two mistakes: to ignore the history, or to take it into account in a synchronic description; that is, what once was a traceable and well documented historical development (and nobody claims that historical processes are staggered and easily segmentable) shows up today under synchronic investigation as a set of irregularities, discrepancies either in the expression system

(morphology and phonology) or in the content system (lexology and semology). Given this fact, the most economical and most general way to describe these phenomena is to allocate these irregularities to the proper niches where they occur in the respective strata. Consider the following analogy: A geographer who must produce an exact map of the layout of Grand Canyon in Arizona, needs equipment and special training; he must measure the relative heights and depths of the various rock formations in relation to the Colorado River. But he does not have to be a geologist as well, presenting credible hypotheses about how the Canyon came into being! He may theorize that (1) the river worked its way into the rock, or (2) that the rocks rose and thus the river sank, or (3) that both movements occurred in a complementary fashion. If he is both a geologist and a geographer, he will be a richer scientist, but the accuracy of his map will in no way depend on his being right or wrong concerning hypotheses (1), (2) and (3). Likewise, I can find a chambered nautilus on the seashore on some tropical island and theorize about the mollusoid creature that once inhabited it; but if my job is to describe the convolutions of the shell for a jewellery manufacturer who wants to reproduce it in plastic, the slow and no doubt gradual biochemical reactions of secretion of the mussel that created the shell will be interesting side-information but essentially irrelevant to my job.

All the more shocking is Chafe's refusal to understand why Lamb sees strata where he sees 'historical process', since Chafe himself in an earlier article entitled Language as Symbolization (1967) clearly implies that the re-using of former linguistic elements in combinations denoting new content probably arose because of the impossibility of assigning a unique phonetic sequence to every new concept man came to be aware of during the course of his evolution. Clearly, then, Chafe must see that complex lexemes (in the sense of Conklin 1962), such as hot dog, black-eyed Susan, man-of-war, Jack-in-the-pulpit, and red herring, may have assumed their lexemic idiom status as a slow historical process, but that this slow historical process is of secondary importance when one wants to write a dictionary of English.

Pages 509-601 contain Chafe's own view of language. Leaving aside for the moment that it is at least questionable whether or not one's own manifesto has a proper place in a review article, let us try to summarize Chafe's picture of linguistic structure. It shapes up as follows:

semantic structure

transformations or mutation processes

surface structure (populated by semantoids)

morphophonemics

phonetic structure (populated by phonetoids)

I think it is not altogether unfair to characterize Chafe's view of language as Panchronic Strato-Transformationalism. He is a stratificationalist, because he subscribes to the idea that semantic and phonetic structure must be structurally related to one another by a set of intervening, complicated relationships, yet he shares with MIT the liking for transformations which, preferably, operate by ordered rules; lastly, he demands of a linguistic theory that it provide synchronic descriptions based on historical insight.

An optimistic reader could say that Chafe is to be praised over all linguists because he has attempted to solve the impossible, namely, wed transformational-generative linguistics to stratificational linguistics, and accomplish the greatest post-Saussurian coup ever attempted: to practice panchronic linguistics, whereby synchrony and diachrony complement each other systematically. There is little doubt in my mind that the panchronic movement in linguistics, though not spelled out or overtly subscribed to by many of our colleagues, is here to stay, and that we will yet see many interesting results from such studies. But it is one thing to present a claim, or declare the need for this kind of study, and an entirely different thing actually to do it. It is altogether likely that those who will do panchronic linguistics will indeed merely be doing better synchronic and better diachronic linguistics and will then learn how to indicate where the two separate studies have, or fail to have connecting points. Before Copernicus mankind thought that the Earth was the centre of the Universe. Today we know this is not true. But if the science of the future proves that for spatio-temporal and biological reasons we will never be able to communicate with other civilizations, then for overwhelming existential reasons, the Earth will have become, once again, the centre of the Universe. The difference is the same as between Kant's Ding an sich and Heisenberg's Undeterminacy Principle. Before De Saussure there was Indo-European

grammar and historical explanation; De Saussure separated linguistics into diachrony and synchrony. Then came Structuralism, Glossematics, Tagmemics, Transformationalism, and Stratificationalism. If linguists of the 21st century decide that scientific linguistics must, by definition, be simultaneously historical and descriptive, they will have returned to pre-De Saussurian thinking but with essentially post-De Saussurian sophistication. The only possible sense in which panchrony in linguistics can be meaningful is if it is a synthesis, not an alloy, and in syntheses one must see both the thesis and the antithesis. Thus, whatever happens to panchronic language studies, the study of synchronic linguistics is also here to stay, and therefore, every linguist who chooses to view language for a particular purpose synchronically only, has just as much right to his pursuit as his colleague who is a historical linguist or as Chafe who, admirably, would attempt to do both at the same time.

2.3 Vesper's article (1969) repeats the same argument raised by Hockett:

I am unable to prove this necessity of an infinite number of levels (read strata) but at the moment am convinced of its validity. This, I think, is the telling argument against Mr. Lamb's model as well as an explanation of the proliferation of strata as his work has expanded. In short we should entreat Mr. Lamb to give us not merely a finite grammar but a finite model for grammar.

This argument was refuted in section 2.1. As a further illustration of the relative stability of the number of strata we can go back to one of the finer points made by Chafe (p.600):

Even if, therefore, everything in semantic structure is semantic, it is likely that not everything semantic is in semantic structure.

This may seem to be a contradiction at first, but it is, in fact, a valid question also raised by Hockett (p.153):

We can describe 'Peter Piper picked a peck of pickled peppers' in terms of such a grammatical hierarchy; this leaves out the recurrent / p / s, and the predominance of voiceless stops, which are important in giving the sentence the exact semantic shading it has. With apologies to Sledd for a loose use of the term, we must insist that poetry is a fact.

This, of course, is absolutely true. Nor has anybody ever questioned it. Lamb is just as aware of the factuality of poetry as is this writer. But this does not invalidate the formal grammatical analysis of 'Peter Piper', it merely necessitates that we make additional statements about it. For instance, after having analyzed the familiar tongue-twister as to its morphotactics and lexotactics, the stratificationalist would also say that as a familiar tongue-twister it is, first of all, hypersememically a cultural institution, just as is how much wood could a woodchuck chuck if a woodchuck could chuck wood? Examples abound in most known languages. The characteristic feature of tongue-twisters is that they heavily exploit the recurrence of a certain type of phoneme (compare the two above), and that in close similarity to nursery rhymes, their 'semantic content' is deliberately subordinated to their sound-patterns and/or their imagery. Obviously, we are dealing with special semantic content. Where does this special semantic content belong in stratificational grammar? Certainly not in the sememic stratum, for that would be the conventional linguistic decoding of the meaning of the lexemes of these tongue-twisters and the result would be apallingly trivial. Hence the special semantic content belongs one stratum higher up in the hypersememic stratum where cultural institutions such as proverbial idioms, familiar quotations, etc., are recorded, and, surprisingly, simultaneously in the phonology. No stratificationalist ever denied that rhymes, assonances, alliterations and the like have 'special meaning'. Utterances of the 'Peter Piper' kind have, quite simply, two structures that must be described: first, there is the ordinary, or 'literal' structure, which tells us in the conventional way that the boy, Peter Piper, performed thus and such an act. Thereby the poetry is lost, of course. The second structure which, incidentally, is simultaneous with the first, links the semantic stratum to the phonology directly avoiding all other strata, i.e., the sememic, lexemic and morphemic, in between. Details of how to present such simultaneous double structures are being worked out currently, but there is little doubt that stratificational theory, precisely because of its highly adaptable graphic notation system, will be able to represent the nature of poetry far more successfully than any other theory of language developed so far.

Thus Vesper's objection disappears, together with those of Chafe and Hockett. The number of strata will not multiply unnecessarily but will remain fixed around six, inside details pending further elaborations of the theory, as more and more language phenomena, such as poetry, for example, are examined stratificationally.

3.1. The Independence of the Phonemic Stratum

In his recent book (1968: p. 56, fn.3) Paul Postal writes:

It is thus proper to look upon a theory of systematic phonemics (i.e. Transformational-Generative phonology) as intermediate between autonomous phonemics, which assumes in effect that phonological structure is mechanically determinable from phonetic information plus contrast, and a theory, as that in part approximated by stratificational grammar, in which phonological structure would be an arbitrary code. Systematic phonemics is intermediate in the sense that it recognizes phonetic structure as providing a substantial, but far from complete portion of the information relevant for the determination of phonological structure, the rest being provided by the grammatical information, i.e. information about word boundaries, morpheme boundaries, syntactic and morphological categorizations, morphophonemic alternations, etc.

I have deliberately selected this footnote rather than any other passage in the entire book, because in it Postal briefly and concisely states what he expects a theory of phonology to accomplish. The order is a staggeringly tall one. It is surprising, in fact, that it is not expected of systematic phonemics directly to represent in some way the exact shading of semantic differences. After all, just as McCawley is in the process of eliminating deep structure from transformational grammar, one could argue that it is actually surface structure that is unnecessary. Let us, therefore, require from a theory of phonology that it represent in a systematic way thought processes. I imagine Postal, or any linguist for that matter, would find such a proposal absurd. Yet the three critics of Lamb discussed above seem to suggest that there is some direct link between 'semantics' (the stratificationalist's hypersememics) and phonology. In the concluding remarks under 2.3 I discussed the possibility of examining stratal system bypasses whether they co-occur with an intermediate linguistic stratal system or not. Thus, given a sufficiently stratified system that recognizes the separateness of sememics and hypersememics, at least certain institutionalized units of cultural awareness may be relatable to phonology directly. Notice, however, that this proposal does not entail the phonological representation of sememic networks which is what the above pseudo-proposal would amount to. Absurd as it is to try to represent meaning directly in terms of phonological matrices, it is really no more absurd than the current MIT theory itself. In MIT ideology, syntax is the axis of language around which everything else revolves. It follows, therefore, that phonology cannot be autonomous but must be dominated by the syntax. Yet there is no empirical evidence

presented to support the MIT contention that this must be so. If we remove the central fixation that sentence syntax ought to generate the phonological representation of utterances, MIT systematic phonemics evaporates into thin air, and it becomes apparent that Lamb's observation a propos of his review of Chomsky's Aspects of the Theory of Syntax (Lamb: 1967) that Aspects will go down in the history of linguistics as 'the reductio ad absurdum of process description on synchronic linguistics' (p.415) was much too optimistic: the 470 pages of The Sound Pattern of English (Chomsky and Halle: 1968), with Postal's polemic commentary following in its steps, are now the leading candidates for that privileged position in our science.

It is the thesis of this portion of the present paper that phonology is, MIT notwithstanding, an arbitrary code; that this has been known and successfully practiced in its more sophisticated form for more than twenty years (cf. Bloch: 1948); that Bloch's postulates have not lost their significance (cf. Hill: 1967); and that whatever inconsistencies still remained in classical phonemics, have been successfully cleared up by stratificational phonologists (Lamb: 1966b, Becker-Makkai: 1969, and Lockwood: 1969).

It is my conviction, however, that above a certain level of technical skill and sophistication, a sufficiently ingenious linguist can present a variety of analyses of the same data. Many stratificationalists have carefully studied MIT's systematic phonemics and would be able to present descriptions of English or other languages -- if they believed in it. Similarly, there is little doubt, that a sophisticated transformationalist could present an adequate stratificational description of a portion of English -- again, if he believed in it.

Trivial as this observation may seem, it has to be made because it brings us to a crucial point in the present argument: the current phonology debate is in truth an ideological debate disguised by random displays of data. Anybody with a Ph.D. in linguistics must be able to handle phonological facts of both familiar and unfamiliar languages, and as a matter of fact, most of us can do this with more or less success. The real issue, as I see it, is this: how do we envisage the place and role of phonology vis-a-vis the rest of linguistic structure?

The MIT position has been adequately represented in Postal's own words on p.34. My counterproposal (which I intend to illustrate below) may be summed up as follows:-

(1) Phonology is only one of the possible media a language can utilize as its expression substance in which to encode units of content. Helen Keller, who was born

blind and deaf, had no 'phonology' to speak of, other than the keys of her typewriter and the whole punching mechanism of her braille grill. Yet to say that she had no language is less than accurate; her books have been widely read and highly valued by multitudes of readers. This person never heard, pronounced, or saw a word quite literally during her entire lifetime. As an author, however, she had a complex hypersememic system (her culture), excellent sense to co-ordinate pre-sentence units of communication (semotactics), and elegant literary prose, which, of course, entails having mastered English syntax better than many nonwriter native speakers. This fact alone is, I think, evidence that phonology is only one of the possible codes (hence by implication an arbitrary one) for the encoding of content.

Phonology, one could argue, is nevertheless not arbitrary, because Helen Keller was an exception, and the overwhelming majority of people communicate with specific systems of vocal noises. Vocal noises, furthermore, are all the more natural, since our planet has the type of atmosphere suited for the propagation of sound-waves. Phonologies, therefore, were predetermined by evolution, and the phonology of each natural language is systematically co-ordinated with the syntax and morphology of that language.

(2). Phonological systems and morphological-syntactic systems both change in time, but the changes are not necessarily coefficient or interdependent. The greatest change in phonology in the history of English, known as the Great Vowel Shift, occurred according to most authorities between the years 1400 and 1500. The results of the Great Vowel Shift, with a number of further and constant changes, are still with us, as they have been for the past 400 years. Yet there was no such major jump in English morphology and syntax localizable more or less accurately for any one 100-year period, and certainly no specific set of changes directly correlatable with the Great Vowel Shift. English syntactic, morphological and lexical habits change with astonishing rapidity as industry creates new dictionary entry after dictionary entry each month. Old fashioned strong verb past tenses, I for me, who for whom, have you? for do you have? are disappearing before our eyes, and although phonetic change occurs also, it is impossible to correlate the changes in lexicon and grammar with the changes in phonology. (This does not mean that obsolescent versus new lexical items do not have phonological representations, but in most cases both the old and the new form, within the lifetime of one generation, are represented by the 'same' phonology. Thus a person to whom the distinction between will and shall and I and me matters a great deal and is sixty years old, may sound 'exactly' like her thirty year old daughter who never uses shall and it is I). If phonology were the systematic result of

'information about word boundaries, morpheme boundaries, syntactic and morphological categorizations' as Postal claims, a co-ordination of morpho-syntactic and phonological change would be possible in historical linguistics. But this is not the case. If phonology, lexicon and the rest of the grammar do not change together, neither can they be organically interlinked in any other way except by an arbitrary code.

(3) If phonological systems are syntax-dominated, foreign-accented speech would be a logical impossibility for a multilingual person who has native-like fluency in several languages on the semantic, lexemic, and morphological levels. The diametrical opposite is the truth. Consider the multilingual Russian immigrant, Nobokov's Professor Pnin. This internationally famous character whose mastery of dozens of languages is legendary appears to have but one single phonological system for all the languages he speaks: Russian.

The significance of this observation is that if phonology were syntax-dominated, a person such as Professor Pnin who masters English, German, French, Polish, Czech, Serbian, Bulgarian etc. to mention just a few, would either be unable to have a foreign accent if otherwise his vocabulary and grammar in each language were in order, or the foreign accent in each language he speaks would somehow have to be a 'different foreign accent', one for French, one for English, one for German, and so on, simply because the lexical, syntactic, and morphological structures in each of these languages differ. Additionally, if mistakes in pronunciation still occurred for a fluent speaker of foreign languages, they would have to be systematically correlated with whatever morphosyntactic idiosyncrasies there are in the speaker's speech. The unique phenomenon of the professor's speech contradicts the MIT view of the putative dependence of phonology on morpho-syntactic criteria on all of these accounts.

First of all, Professor Pnin very seldom makes a mistake in morphology or syntax in whatever language he speaks at a given time. It is merely the phonology that doesn't seem to conform to the otherwise skillfully and elegantly mastered portions of his various polyglottal sets of competences. Nor is there any likely explanation based on Russian syntax why Pnin should continue to use palatalized /pʲ/, /tʲ/, /bʲ/, /dʲ/ in such English forms as many times, speaking, funny, which in his Russian-phonology dominated speech come out as /menʲi tayms/, /spʲikʲɪnk/, /fanʲu/, etc.

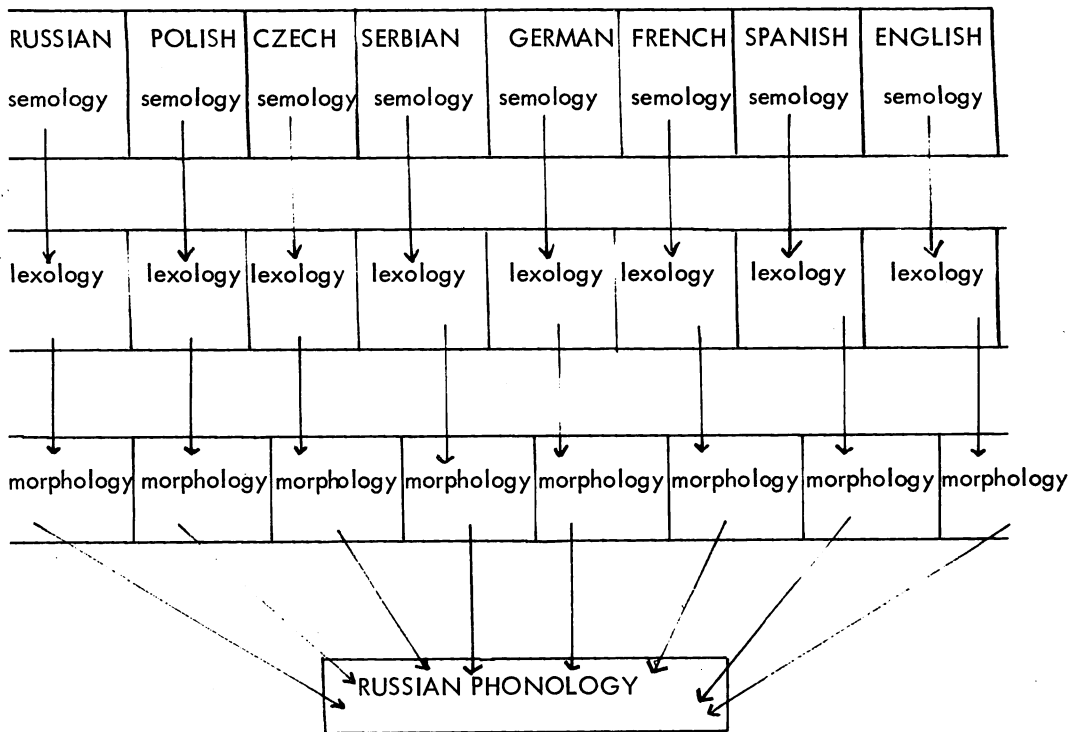


Figure 2

A simplified diagram of Professor Pnin's Speech

Figure 2 presents a simplified diagram of Professor Pnin's polyglottal speech-competences. The eight squares on the top represent eight of the major languages he masters with native-like fluency, in addition to the many others omitted here for simplicity. His competences here, we must add, include the ability to do (at least in some of them) high level literary work and the writing of complicated scientific prose. All writings by Pnin are characterized by excellent sense (semology) and sophisticated sentence patterns (lexology). Morphological and orthographic mistakes never occur in his writings. The same observation can be made about his speech performance all the way from the respective semologies downward to the morphologies, at which point one single phonological system takes over and replaces the others in their expected places. This occurs on the phonological stratum where Russian phonological units and contrasts are employed to function as the encoding media of English, French, German, Polish etc. content units and their various tactic arrangements. Due to sufficient redundancy features

in the lexotactics, morphotactics, and phonotactics of each language concerned, however, Pnin's speech is generally well understood whether at close range or over the loudspeaker at conferences.

It must simply be the case that phonology is arbitrary and can be violated without material repercussions as far as the bare needs of a communication system are concerned. Untold generations of immigrants from Europe, Asia, and Africa in the United States prove this simple point by their very existence. Naturally there are minor penalties one pays for superimposing an alien phonological structure on English, such as being labelled a foreigner, for instance. But to claim that a person with a noticeable foreign accent owes his inability to imitate the noises of his environment accurately to a systematic relationship existing between the morpho-syntax (which he may be good at) and the phonology of the language (at which he is poor) is like claiming that just because a street has been officially designated a one-way street by City Hall, it has therefore become physically impossible to drive down this one-way street the wrong way. Having learned English at the age of 21, I can bear personal witness to the fact that syntax is mastered much sooner than phonology, to say nothing of the fact that one can be an accomplished translator without ever learning how to pronounce the language one translates from.

But there is another argument as well pointing to an independent and arbitrary phonemic stratum. It has to do with the familiar but seldom properly emphasized prodigality and wastefulness of natural languages whereby the results of tactic combinations on various levels are left unemployed as the potential carriers of structural units in the hierarchy of language. This argument for the justification of a stratified view of language is so crucial that it is worthwhile here briefly to explore the origins of the notion.

In an important article entitled 'On Linguistic Primes' (1959), Fred W. Householder Jr. described the phenomenon of pattern-overgenerating on the levels of phonology, morphology, and syntax. Let us assume for the purposes of the present argument that articulatory features such as bilabiality, voicelessness, stopness, labiodentality, voicedness, fricativity, nasality, etc. are 'primes' of the phonology. We now examine their possible combinations with each other versus the actually occurring combinations of these features. We find bilabiality, voicelessness, and stopness co-occurring simultaneously to form a /p/- type sound which we find to be in a minimally contrasting distribution with the combined features bilabiality, voicedness, and stopness amounting to a /b/-type sound as in pit versus bit. Labiodentality, voicelessness, and fricativity

jointly (and again simultaneously) amounting to an /f/-type sound are found to contrast minimally with the combination of labiodentality, voicedness, and fricativity yielding a /v/-type sound as in /fyuw/ versus /vyuw/. But nowhere in English do we find a combination of the features bilabiality, voicedness and fricativity to form a /b/-type sound, the first consonant in Spanish Havana. Bilabial + voiced + fricative would be, in other words, 'illformed' in English, while in Spanish it would be wellformed. Similarly, liprounding is a significant feature for the formation of English /u/ and /o/- type sounds, but front vowels are not rounded in English as they are in French, German, Turkish, Finnish, and Hungarian to form /u/ and /o/-type sounds.

Consider the phonetically possible sound implosive bilabial voiceless nasal fricative. It is actually pronounceable with some practice. It has certainly no phonemic function in English or in any known Western language. Does this not automatically prove that some phonetic bundles in some combinations in some languages are distinctive while others are not? If a set of noises in a given dialect or language is functionally different from all other possible combinations of the same elementary unary articulatory features in a given dialect, one is forced to conclude that the set whose members function as morphemic minimal pair distinguishers belongs in a separate and self-contained compartment in the hierarchy of that communication system. The term phonemic stratum is more than convenient for the designation of that compartment of the hierarchy unless, of course, the term stratum has undergone some sort of socio-psychological taboo repression for the speaker.

Once the phonemes of the language are separated from the nonphonemes, they reveal their capacity to participate as elementary units in a syntax of their own, known in stratificational grammar as phonotactics. The phonotactics generates the syllables of the language. The tactics of each stratum operates horizontally and creates configurations of shorter or longer sizes some of which will have -emic sponsorship from the next higher stratum, and some of which will be only potential carriers of -emic sponsorship from the higher stratum, but presently unemployed as such. Furthermore, the sponsorship from the next higher stratum may be of different sorts. Consider the following set of syllables in English:

1	sing	sang	sung
	sink	sank	sunk
	swim	swam	swum
	ring	rang	rung
	drink	drank	drunk

II	pit	pat	putt
	fin	fan	fun
	bin	ban	bun
	him	ham	hum
	sip	sap	sup
	slit	slat	slut
	pin	pan	pun
III	lip	lap	<u>lup</u> (as in <u>voluptuous</u>)
	tip	tap	<u>tup</u> (as in <u>quintuplets</u>)
	rip	rap	<u>rup</u> (as in <u>rupture</u>)
IV	*mift	*maft	*muft
	*snilt	*snalt	*snult
	*nimzlt	*namzlt	*numzlt

The set may be enlarged at will. What the members of sets I, II, III and IV have in common is that they are built on an /i/, /ae/, /a/ scheme. Yet the status of these syllables is quite different; whereas those in I are members of an ablauting strong verb series, the syllables in II are not, though they are all morphotactically independent words. The syllables in III contain members (the underscored ones) which are not morphotactically independent words in the language although they do occur as syllables of longer words. The asterisked syllables in IV do not occur. Clearly the status of the /i/, /ae/, and /a/ pattern needs to be discussed on as many levels as one encounters that pattern. Consider the phony strong verbs think, thank, thunk, spink, spank, spunk, sit, sat, sut, used by speakers of nonstandard dialects or by playful families indulging themselves in artificial baby-talk. Who'd'a thunk it? Look what I brung ya! You're gonna get spunk! are all wellformed in a certain sense due to the simultaneous availability of /i/, /ae/, /a/ ablaut verbs, and the /i/, /ae/, /a/ syllable pattern in English aside from any ablaut series. The members of set IV, although none occur, show a hierarchy of preference, with *mift, *maft, *muft unobserved but possible, *snilt, *snalt, *snult less so, and *nimzlt, *namzlt, *numzlt being quite unlikely. Leaving the last triplet of IV apart, we must observe that the syllable patterning of sets I, II, III, and IV is identical.

What this illustrates is the fact that horizontal tactic combinations of phonemes built on identical phonological patterns are variously and noncommensurably dominated by the various selection principles of the neighboring higher strata. Clearly then, the phonological pattern /i/, /ae/, /a/ must be an independent tactic principle which provides raw material for the morphology. The fact that the morphology uses some of the available /i/, /ae/, /a/ syllables for certain purposes (ablaut series), others for independent but unrelated words (fin, fan, fun), some only as bound morphemes in larger constructions (tup, rup, lup) while some don't occur at all (*mift, *maft, *muft) implies that the /i/, /ae/, /a/ pattern is, metaphorically speaking, a 'blind force', one, whose existence is, speaking again metaphorically, 'self-centered'.

Given /v/, /l/, /k/, /s/, /m/, /r/, /t/, and /s/ as English phonemes, is it not somehow characteristic of English that they are not found in the following combinations?

* /vlk/, * /smrt/, * /str/ * /smk /

In Carroll's Jabberwocky

T'was brillig and the slithy toves
 Did gyre and gimble in the wabe,
 All mimsy were the borogroves
 And the mome raths outgrabe

each underscored word is a nonsense word, yet it is an English word. Had Carroll substituted /vlk/, /smrt/ (both perfectly acceptable in Czech) or some word such as legeslegkellemetlenebbek or törölközött (both wellformed in Hungarian), Jabberwocky would have been written in a hybrid dialect. The way it is, unsuspecting foreign students go rushing to the dictionary to find brillig, mimsy, and borogrove, which they may pronounce accurately, may describe properly as adjectives, a noun in the plural, and outgrabe as the strong past of *outgrib, yet will be unable to identify as to content, barring guessing and Carroll's own mock-explanations offered by Humpty Dumpty to Alice.

Not only is the phoneme (classical or redefined) on a separate stratum from other observable phonetic material because of the simultaneous co-occurrence of some hypophonemic features while some other possible combinations are missing, but also because the phoneme itself will enter into horizontal tactic combinations with some phonemes, and not with others. In other words, both its inner constitution and its outward tactic behaviour are inner-directed and are not subject to logical limitations other than what is

specified in terms of taxonomical validation (i.e. 'tactics'). The inner constitution of phonemes as simultaneous bundles of phonetic (articulatory and unary) features is called hypophonotactics in stratificational grammar, and the tactic combinatory principles of phoneme-size units is called phonotactics. Just as the hypophonotactics has the capacity to outgenerate the number of taxonomically validatable phonemes in English, the phonotactics, too, can outgenerate (a) the phonotactically possible English syllables, (b) those phonotactically possible English syllables which are parts of words, (c) those phonotactically possible English syllables which are words themselves, (d) and those phonotactically possible English syllables which in addition to being independent words themselves participate in (d1) artificial-nonstandard or (d2) standard verb ablaut series.

In addition the phonotactics can generate metric schemes such as the following:

/ta-tam ta-tam ta-tam ta-tam
 ta-tam ta-tam ta-tow
 ta-tam ta-tam ta-tam ta-tam
 ta-tam ta-tam ta-tow /

Though devoid of meaning, the pattern can, nevertheless be described as iambic tetrameters interchanged with iambic trimeters with an ABAB rhyme format. This is the familiar metric skeleton of many a stanza of English and other Western European verse. If the translator wishes to translate a poem of this metric format from language A to language B, he must subordinate all of his morphological, syntactic, and semantic selection procedures to this overriding pattern of iambic tetrameters and trimeters in search of an adequate rendition, if he wants to keep the original form of the poem and not just give a prose paraphrase. The success of his translation will depend on the availability of adequate synonyms in the target language whose morphological shape and syllabic patterning can approximate the arrangement in the source language. Wherever such correspondences are missing, the translator's poetic licence must take over.

To my knowledge stratificational grammar is the only approach to linguistics today that has a systematic place for the syllable in a theory of language, barring older, traditional, and recent ad hoc treatments. It is shocking that this basic building block of natural languages should have been so casually treated by some theoreticians.

3.2 The independence of the Morphemic Stratum.

Just as supercalafragilisticexpialadocious is somehow well formed in Mary Poppins' dialect, on the Jabbarwocky-level, so are antidisestablishmentarianism, incomprehensible, irreversibility, incomprehensibility, transact, transfuse, translate,

transpire, transistorize, relate, reduce, remote, refuse, demote, and delete in Standard English. Similarly everybody agrees that *sheeps (as a plural) and *mans (as plural) would be ill-formed, as would be *shipcitizen, *hoodmother, *domking, *gooder, *goodest, *bader, *badest, and *nessformedill. The surprise occurs when we hear a nonce -form for the first time and are nevertheless able to understand it: as for example when columnist Art Buchwald noted, "If both inflation and deflation are bad for the country, obviously what we need, is flation." Does flation occur in Webster's or in the OED? Certainly not. Yet we definitely understand what Buchwald meant. Why do we understand it? Because by the simple morphological operation of removing the prefixes de - and in-, Buchwald created a new morpheme whose lexemic denotation was defined by the context in which it occurred. Should the morpheme flation become widely accepted in this sense, it would be lexicalized, and Webster's new edition would list it under the letter f. Likewise, we have in English demote and promote as verbs, and remote as adjective. We also have translate, transpire, transgress, and transmigrate. Removing the prefixes from their respective stems and interchanging them will yield some existing forms and some nonexisting ones. Consider, for instance, the nonexisting form *transmote. Presently, of course, it has no meaning, and it doesn't exist in any dictionary. Yet if I say, MacNamara was transmoted from Secretary of Defense to President of the World Bank, everybody immediately understands that a new way of firing a dignitary was described; he was neither 'kicked upstairs' (i.e. promoted), nor demoted; he was moved neither 'up' nor 'down' but somehow, nevertheless, out of the way. Also consider the non-occurrences *transject, tentatively 'to place from one container into another by mechanical hurling' *subfer, 'to come to a logical conclusion neither by inference or deduction but by counting notches down a vertical abacus', *comport, 'to amass in one place', *prosisit, 'to insist on behalf of somebody else' etc. Examples can be made up at will. Obviously the amalgamation of prefixes and stems into these non-existent forms is some kind of a tactic activity -- after all, order is significant here. The elements dealt with were not meaningful as dictionary entries but they are nevertheless potential meaning carriers. MIT grammarians call them 'formatives' - a diplomatically noncommittal nondescription at best; traditionally, however, they were known as morphs, in other systems as morphemes. The motivation for rearranging them tactically, could come either from the semantic components we find in these forms, or from the phonology. But it is also self-motivated. Just as phonetic features can be overcombined, well beyond the number of minimal-pair distinguishing phonemes in the language, so can morphemic elements; the non-occurrences

above are empty morphemic containers ready to receive whatever content we can think of putting into them, which is not to deny, of course, that some *nonoccurrences* are easier to find a plausible meaning for, than some others.

If a set of elements has an independently motivated tactics creating thereby combinations which are eligible for arbitrary content-designation from the semantic side, the elements must move on a plain which is apart from any other plain in the language, It is a stratum.

The other argument for the existence of the morphemic stratum will be seen best from the lexemic point of view.

3.3 The independence of the lexemic stratum.

The tri-morphemic dictionary entry man-of-war means at least four different things: (1) 'navy vessel flying the insignia of its state', (2) 'stinging jellyfish in the Gulf of Mexico', (3) 'a large bird native to southern Florida', (4) 'the name of a famous race horse, in whose honor other race horses, generally, may be called men-of-war'.

In none of these three meanings of man-of-war do we find the meaning 'homo sapiens', 'genitive', and 'bellum'. Nevertheless, when we talk about several stinging jellyfish, battleships, albatros birds or race horses, we talk about men-of-war rather than *man-of-wars. Clearly, then, we have two choices open: We can either say that by remarkable coincidence these four completely independent formations have an identical way to be rendered in the plural, or, more economically, we can say that man-of-war (meaning any of the four above) has a morpheme man in it, and that this morpheme man is identical with the morpheme man, as in General Eisenhower was a famous man of war, but not the lexeme man. I imagine that Chafe might point out that 'belligerence' can be found in all found items designated by the morpheme string man-of-war the jellyfish sting, ships do battle, horses compete in speed, and the man-of-war bird is as majestic as a lone warrior. Nobody wants to debate such a historical speculation as to why and how the association between the string man-of-war and its denotata arose. After all, all of this history is beautifully preserved in the connotata of the four lexemes. This will not change the fact that the synchronic analyst is confronted with two drastically different (and yet similar) occurrences of man. What they have in common is that both will pluralize as men which, after all, is a formal (i.e. morphemic) matter. Yet the one means 'human being, male' and the other means nothing. Thus, there is a lexeme man and a morpheme man, or put another way: in man-of-war, pl. men-of-war = 'jellyfish' the morpheme man is present, but the lexeme man is not. Rather the whole unit man-of-war

is a single lexeme. And the same is true of man-of-war meaning 'battleship' and the others. Examples are abundant among complex verbs as well. Go: went = undergo: underwent, stand : stood = understand : understood; French venir : je viens 'come' = prévenir : je previens 'warn', tenir : je tiens 'hold = maintenir : je maintien 'maintain. In all of these examples the complex form retains the morphological behaviour of the simple one, but has nothing to do with it semantically. Thus it becomes apparent that morphemes and lexemes are on separate strata, and any linguist who refuses to admit this condemns himself to having to state a single rule many times. He has missed an important generalization.

The independence of the lexemic stratum from the sememic in its formation of sentence or clause-size units was convincingly demonstrated already in Chomsky's Syntactic Structures in 1957 with his colorless green ideas. Consider the following, however: The nuclear thrust of a man-paddled canoe equals the square-root of an albino polar bear's tail feathers if and only if said albino polar bear is simultaneously the first cousin twice removed of that alcoholic duck-billed platypus whom I saw yesterday presiding over the House of Representatives wearing an exact replica of Liberace's golden tuxedo. I think everyone will agree that though stylistically awkward and unintelligible, the sentence is grammatical. In other words it is lexemically wellformed but illformed sememically. Unless, of course, the entire sentence is some kind of coded message. When the Anglo-American Allied Forces began the invasion of Europe and wanted to broadcast this fact to the French resistance, they broadcast the following sentence: Les sanglots longs des violons de l'automne blessent mon coeur d'une longueur monotone, which means more something like 'the long sobs of autumn's violins wound my heart with monotonous boredom' rather than 'we will commence attack at 3 A M tomorrow'. Thus, the above sentence-monstrosity with the polar bear and Liberace's tuxedo, could also be a war message or some such code. Additionally, the code could be exactly the fact that somewhere in the sentence there has to be a grammatical slip-up etc.

But let us take some more plausible cases. If I say the milkshake devoured Johnny instead of Johnny devoured the milkshake I am supposed to have made up an ungrammatical sentence. Yet the sentence is contextually salvageable. Johnny is a boy who flunks all his courses in fourth grade and is abnormally obese; he delivers newspapers to make extra money but then spends it all on milkshakes. Milkshakes literally possess Johnny psychologically, he is a compulsive eater of sweets. At the PTA meeting the teacher asks the grieving mother what happened to the boy, and the mother replies:

The milkshake devoured Johnny. The teacher registers surprise and the mother has to explain. Or for instance I say to a puzzled friend at Chicago's O'Hare International Airport: New York is two pounds and three ounces away from Chicago. He thinks I went mad, so I explain: 'The Federal Aviation Committee made a rule that men under fifty must weigh no more than 170 pounds to be allowed on domestic flights, and I weigh 172 pounds and three ounces; that's what stands between me and my getting to New York.'

Similarly Chomsky's celebrated *sincerity admires John is quite acceptable if Sincerity is his girlfriend's name or the female incarnation of a Platonic ideal in anthropomorphic shape, like the Virtues in the Roman de la Rose. The independence of the sentence qua lexotactic string is there indeed, and all these cases of ungrammaticality are not matters of lexotactics but of semotactics, the tactics of the stratum above clauses and sentences.

Let us now examine a few genuine cases of lexemic ill-formedness. The Hawaiian Pidgin English sentence If ol man no come I no pay deal finish may be correctly encoded for the use of speakers of the same dialect, but a Mainland speaker must make the proper syntactic readjustments before he can properly decode it. In a sentence such as how long are you now in United States?, one can hear clearly the German wie lange bist du schon in America?, the French Vous-etes ici depuis quand?, and the Hungarian mióta vagy itt?, when Americans would say how long have you been in the United States? Notice that whereas these are genuine cases of lexotactic ill-formedness, they nevertheless do not interfere with the appropriate decoding of such messages. Nobody ever misunderstands such a question. There is probably no such thing as an absolutely ungrammatical sentence, as long as it occurs in natural discourse. If I artificially make up a sequence such as pencil the whose never seventeen really nevertheless, this, to be sure, will be wrong on all accounts, as it is not subject to any contextual adjustments whatever. These lexemes are in no construction with one another at all; no lexo-tactics, semo-tactics, or hyper-semo-tactics can salvage it, unless, of course, the agreement was made with a confederate that precisely this ill-ordered sequence of utterances will mean specifically whatever we agree it to mean, or if a particular beat poem features it in the appropriate setting. But the probability for this being so is very low. Between artificially made up MIT nonsense, naturally incurred immigrant nonsense, repetitiously inflected complex nouns and verbs which are semantically divorced from the content of the forms they follow in their morphological behaviour, there is a statistically observable standard, average lexo-tactics for English, which, as all of the other tactics so far examined, is capable of over-

generating its own customary, hence sememically sponsored, patterns in which case we either talk of one kind of ungrammaticality, or attempt to salvage the sentence by contextual adjustments. That the lexemic stratum is independent, replenished with its own units and its own tactics, should need no further elaboration.

3.4 Arguments for the existence and independence of the sememic stratum.

If I say (1) grandma came down with the suitcase and (2) grandma came down with the flu, I have two grammatical English sentences whose morpho-tactics is identical. In both cases I have a declarative sentence in the simple past tense with a one-noun noun-phrase, a verb phrase built of an intransitive verb, an adverb and a dependent noun phrase introduced by the preposition with. One could actually argue that come down with is a single transitive verb, since it can be replaced by contracted as in grandma contracted the flu. But if this is so, it logically follows that it is the last noun, flu, or suitcase which somehow decides whether or not come down with is a single transitive verb. The situation is further complicated by possible punning on come down with 'contracted' as in grandma came down with the Bible. This could be truly ambiguous; either there was a concrete Bible in the attic and she came down the stairs with it, or she became religious to the point of being sick. Be this as it may, it remains true that (1) and (2) are identically constructed in terms of some kind of 'surface structure'. Or take another example: I say John flew off the handle. I may be talking about my pet falcon with whom I go hunting, or I could be talking about my friend who lost his temper. Or I can say John missed the boat meaning any one of the following : (1) He is a bombardier and he failed to hit the target which was a boat: (2) he was late for departure for sea and the boat left without him: (3) he failed to propose in time to a rich girl who is now marrying somebody else. Likewise I can say John put his foot in his mouth and either mean that he is a contortionist, or that he had to renege on a previous statement which embarrassed him. I can say John dropped a brick and either mean that he is a clumsy mason, or that he mentioned the wrong subject in the wrong place embarrassing his hosts. (For a detailed discussion of idioms of this type, called sememic idioms, see Makkai: 1965) What constitutes sememic well-formedness versus sememic ill-formedness? I think it is reasonable to guess that approximately 90% of every day English discourse and printed literature is sememically well-formed. May I have a glass of water? What time is it? Let's get out of here! You look beautiful today, I've been kind'a missing you lately, What's in it for me? and the rest of familiar, colloquial sentences frequently heard as we go about our daily business of living are all sememically well-formed. Business people, farmers, truck drivers, shop owners, physicians, lawyers and other professional people in 20th century

English speaking countries are much too busy making a living to contrive sememically ill-formed sentences which, for all practical purposes, is the prerogative of the linguist who is trying to illustrate the point. The sentence quoted before, then, the square root of the nuclear thrust of a man-paddled canoe etc. derives its sememic ill-formedness precisely from the fact that I made it up deliberately in order to illustrate a sememically ill-formed sentence.

Consider the following sentence: /arrount dze ert refolf dze munn/, meaning 'the Moon revolves around the Earth'. This could conceivably be heard from one of the space-scientists who helped Americans land on the Moon last summer. On what levels is this sentence well-formed and on what levels is it ill-formed? Surely the observation is true, and he makes understandable common sense. We can agree that the sentence is hypersememically and sememically correct. Lexotactically it is bad, because it follows the German word order: morphologically it is also ill-encoded because the verb/refolf/ has no singular present marker, and the phonology is totally alien to the structure of English. Nevertheless, the sentence communicates. If you contrast this with the square root of the nuclear thrust etc., supposing it is read out loud by a native speaker, you will see a sentence which is phonologically, morphologically and syntactically quite correct, but nevertheless 'fails to communicate' along the conventional lines. Suppose now that the same German scientist at Cape Kennedy says this: Arrount dze ort refolf sefentin littel munn ent van bigger munn. What will he have done then? This sentence, just like the first, will be ill-formed phonologically, morphologically, and lexotactically, in addition to which, unlike the first, it is also stating a falsehood. The question remains: Do we still understand what he said? The answer must be yes. Do we know that he stated a falsehood? Most people probably would readily agree that they knew it. The reason why the sentence, nevertheless, is nevertheless, is able to communicate is that even after violating hypersememic or epistemological well-formedness (which could be paraphrased for the sake of convenience simply as 'truth'), the sentence is sememically well-formed, and given this sememic well-formedness it gets reinterpreted by the English speaking listener as seventeen little moons and a bigger one orbit the earth which, for all its practical falsehood, is a completely intelligible sentence.

Other examples of an independently motivated sememic stratum abound in the available stratificational literature. Let me mention here, in passing, one of the most successful ones. In his article 'The Sememic Approach to Structural Semantics' (1964) Lamb shows the different interpretations of the lexeme big in the following occurrences:

big rock

big man in town

big fool

big sister

It is immediately obvious to any native speaker that big sister meaning 'older sister' doesn't mean a sister who is big; big fool doesn't mean an oversized idiot, but perhaps a tiny man who did something very stupid, and so on. One could add to the list big deal, whose meaning is more 'I couldn't care less' than a 'deal which is big in size'.

3.5 A Note on the Independence of the Hypersememic Stratum.

As structural and transcultural studies in cognition continue to develop with astonishing rapidity, nobody can, at present, predict what our understanding of semantic structure as a whole will be just ten years from now. It is altogether likely, that this stratum may have to be diversified into several substrata, such as for psychological reactions, for instance. Psycholinguistics is a young discipline, and a systematic integration of the Freudian theory of the unconscious into linguistic structure (with the exception of the two pioneer volumes by Thass-Tienemann 1967 and 1968) is at present still nowhere in sight. This, naturally, does not mean that such studies are taboo; they may have seemed too ambitious for Bloomfield, but in 1990 or 2010 they may be as natural as space travel. If there is any legitimate remark, therefore, to the effect that strata may have to be multiplied, it is with regard to what is above sememics. This, however, is best regarded as an exciting challenge. At present, out of modesty, a lack of tangible results, and convenience, I, for one, regard the hypersememic stratum as the depository of awareness of such facts as whether a statement, for instance, is true or false; whether a quotation I heard was familiar and therefore the carrier of some special, culturally based message that outsiders to the given culture would not understand; whether something was said to me in earnest or teasingly; whether a person made a direct request or merely alluded to something out of politeness; whether he made an understatement or hyperbole; whether a question was genuine or rhetorically motivated, and so forth.

But to give a few concrete examples: If somebody says don't count your chickens before they're hatched I can take this literally, but for that I would have to be poultry farmer hatching his chickens by artificial heat, and be ignorant of the fact that this is a generally well recognized English proverb based on the moral of a famous fable by Aesop. (For a detailed survey of these cultural idioms see Makkai: 1965.) He'll never get to first base, he's got two strikes against him, don't give up the ship, any port in a

storm, don't wash your dirty linen in public, don't carry coals to Newcastle, etc., are all instances of what I prefer to call cultural idioms, but the familiar cultural institutions of hyperbole, understatement, prompting, quotation, etc., probably also belong in the hypersememic system, as would the representation of one's awareness that Peter Piper picked a peck of pickled peppers is a familiar tongue-twister with a particular sound structure.

The tactics of the hypersememic stratum must not be ignored or underestimated, though nobody, at present, has any systematic way in which to present thought processes. One example, however, might clarify what happens in ordinary business life on the hypersememic level. A square cup of coffee appears on your television screen and an attractive blonde announces that the circularizing of the square has just been invented. You, the listener, know that this is impossible. Lo and behold, the square cup visually dissolves on the screen and becomes round, and the blonde announces: 'Round out your pleasure with Maxwell House Coffee! Round out, to be sure, is a familiar phrase, and the visual dissolution of the square cup then becoming circular is easily achieved by television technology. Hence the television industry ingeniously provides a contextual adjustment for an otherwise unacceptable utterance, such as we can circularize the square. What the example is meant to indicate is that matters of cultural awareness are resorted to here in order to make an otherwise unacceptable utterance accepted. Consider the sentence MIT is in Cambridge, England. Everybody knows that this is simply false. Otherwise the sentence is well-formed on all levels. Now, should it so happen that Chomsky, Katz, Fodor, and Postal go to Cambridge for a year, the sentence will suddenly make good sense. Likewise, if I say 2×2 does not always equal 4, people might accuse me of being wrong. If I qualify my statement by adding 'in certain subatomic investigations and in non-Euclidian noncausalistic systems such as those advocated by Heisenberg 2×2 does not necessarily always equal four' I have made the sentence plausible.

4. Conclusion

The fact that language is stratified was really said by De Saussure for the first time when he presented his classic definition of the linguistic sign as consisting of a signified and an arbitrary signifier. From here on it was a matter of magnification as to how many subsystems we are able to recognize within the signifier and the signified. The Swede Noreen pointed out as early as 1906 that language was stratified, and Hjelmslev's Prolegomena to a Theory of Language, first written in Danish in 1943, is easily accessible in English translation (1961) to anyone interested. To a certain extent it is true that Hjelmslev carried De Saussure's division of the linguistic sign into a signified and a

signifier to its logical extreme. See Lamb's 'Epilegomena to a Theory of Language' (1966a) with regard to Hjelmslev's system of linguistic stratification. The extraordinary feat accomplished by Lamb, as I see it, was that he for the first time succeeded in uniting Hjelmslev's colossal conceptual apparatus with the tradition of American descriptive linguistics which gave him the impetus for his further research.

Language is not an elephant. It is a system of systems relating experience to arbitrary, or traditionally inherited codes, vocal, visual, or tactile, and such codes to experience. The relations that constitute this system of systems has been convincingly proven, to my mind, to be stratified. It is there to see for everyone who is willing to see it.

FOOTNOTES

1. An earlier condensed version of this paper was read at the November 1968 meeting of the Chicago Linguistic Society. The present article is my personal interpretation of the phenomenon of linguistic stratification. As such it bears no official sanction from the Yale University Linguistic Automation project or anybody associated with it. I have taken it upon myself to attempt fighting some of the major misunderstandings surrounding stratificational linguistics, perhaps at the cost of gross oversimplification. All shortcomings and errors of this presentation, therefore, are strictly my own.
2. I have read a detailed review of Thomas' Transformational Grammar and the Teacher of English by James D. McCawley (mimeographed) that read at the top: 'For posthumous publication'. I am, therefore, not at liberty to quote from it, though its contents really ought to be made available to the rest of the profession.
3. Since the writing of this paper two additional reviews of Lamb's Outline have appeared; coincidentally both by British linguists. The first one is by Palmer (1968) and the second by Huddleston (196). Both of these articles are bona-fide reviews and not counter-manifestos. Palmer, who is more negative about Outline than Huddleston, makes the point that the reader must also know Lamb's earlier articles if he wants to formulate a picture of the entire theory and its evolution. This is absolutely true. To fill the need for such a collection of essays from the early sixties to the present, Professor David G. Lockwood of Michigan State University and myself are in the process of editing a book entitled Headings in

Stratificational Linguistics. Hopefully the book will appear in 1970. Palmer also concludes that Lamb's views are 'not proven'. Huddleston, writing under the influence of M.A.K. Halliday whose theoretical approach to linguistics, though markedly different, is not irreconcilable with Lamb's stratificational theory, describes the contents of Outline in the most objective fashion and raises a number of technical questions about the terminology and certain aspects of the presentation. Where American temperament rises high, the British mood remains relatively cool. Perhaps it is true, as is claimed in a recent issue of Psychology Today, that 'The Americans run an idea up a flagpole to see if anybody will salute... The British prefer to let an idea get broody to see if anything will hatch...'

4. The statement is based on the Trager & Smith analysis of American English as it is also presented in H.A. Gleason Jr.'s internationally known Introduction to Descriptive Linguistics.

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