Chapter 7

Bloomfield
The Shape of the Theory

1.   *Introduction*
Similar to Saussure, Bloomfield (1926) sets out a series of statements which identify an initial conception of language.[1] His initial primitives derive from an act of speech, which Bloomfield accepts from the fields of psychology and anthropology.[2] Even so, to begin with, we do not know which acts represent speech and which do not. That is resolved only when some of acts are determined to be **forms** and some are not.

2.   *The Creation of the Theory*
In a series of assumptions and definitions, Bloomfield establishes the existence of **utterance**, **language**, and **form** (Bloomfield 1926:154-55):

> **1.**   **Definition**. An act of speech is an *utterance* ...
> **Assumption 1.** Within certain communities successive utterances are alike or partly alike[3] ...
> **3.**   **Def.** Any such community is a *speech-community* ...

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[1] Bloomfield (1926.154) wirtes, "I am indebted to Sapir's book on *Language*, New York 1921, and to de Saussure's *Cours de linguistique générale*,[3] Paris 1922; both authors take steps toward a delimitation of linguistics."

[2] Cf. Chapter 6.

[3] In Bloomfield (1933), this assumption is stated more specifically as follows (p. 144):

> In certain communities (speech-communities) some speech-utterances are alike as to form and meaning.

And Bloomfield remarks (1933:145) that "our fundamental assumption implies that each linguistic form has a constant and specific meaning". It is the **failure** of this implication (i.e., the **absence** of a constant and specific meaning) which may be the most serious weak point of this and similar theories. Bloomfield recognizes the limitations of this assumption as well: "... our basic assumption is true only within limits, even though its general truth is presupposed not only in linguistic study, but by all our actual use of language".

> 4.   **Def.** The totality of utterances that can be made in a speech-community is the *language* of that speech-community[4] ...
>
> 5.   **Def.**   That which is alike will be called *same*. That which is not same is *different* ...
>
> 6.   **Def.**   The vocal features common to same or partly same utterances are *forms*; the corresponding stimulus-reaction features are meanings ...
>
> **Assumption 2**. Every utterance is made up wholly of forms.

There are two points here. **First**, the relation of 'same' (né 'alike') and 'different' are assumed and not defined. There is no definition of 'alike'; it is a primitive applied to vocal features and to stimulus-reaction features without instruction on how to recognize it. It is either there or it is not. Since there are no techniques presented for introducing it, and it must be assumed that we can recognize 'alike'. The elaboration of the **missing techniques** and their incorporation constitute much of the later activity in developing this theory. **Second**, language is identified here with the **totality of utterances** that can be made. It is **not** equated with the patterns which the utterances exhibit, and which, when expanded, account for (generate) those utterances. It is the forms themselves. Language is **not** thought of as a system, pregnant with all the potential forms of language. This is similar in outline to Saussure's notion of a system of signs in which all information is represented without removal of redundancies.[5]

2.1   *The pattern of morphemes and sememes*

Having identified the substance of language, Bloomfield then proceeds to deal with forms in two ways: 'morpheme, word, phrase' in section III and 'phonemes' in section V. In a series of definitions, Bloomfield (1926:155-56) provides succinct characterizations of our now common terminology:

> 8.   **Def.**   A minimum X is an X which does not consist entirely of lesser X's ...

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[4] Note again that 'community' is constructed from (and depends upon) the constancy of language (i.e., "successive utterances are alike or partly alike") and note that this reverses the progression that Saussure proposed, in which 'community' was prior.

[5] Notice, also, that this conception of language (as equivalent to the totality of its possible utterances) is consistent with the outsider's approach to the phenomenon. This attitude again mirrors the American encounter with languages alien to Indo-European. There is an implicit emphasis on corpus and linearity.

9.   **Def.** A minimum form is a *morpheme*; its meaning is a *sememe* ..
10.   **Def.** A form which may be an utterance is **free**. A form which is not free is *bound* ...
11.   **Def.** A minimum free form is a *word* ...
12.   **Def.** A non-minimum free form is a *phrase* ...
13.   **Def.** A bound form which is part of a word is a *formative* ...
        Assumption 3. The forms of a language are finite in number.

Recalling that a form **is** a selection of vocal features, what this series of definitions does is describe **one** organization of the act of speech, i.e. the vocal features. It does this first by identifying minimum forms, bound and free, and then by organizing the minimum free forms into phrases by an 'is a' relationship.[6] Thus, a linear continuum of vocal features may have an organization/pattern of segmentation projected upon it as we recognize minimum forms (the initial segments of vocal features), and then the relationships of bound and free, and the boundaries of non-minimum forms. Figure 1 is a depiction of this relationship. The sine-wave shape may be taken as the continuum of vocal features; and upon them is projected a segmentation into forms by virtue of certain portions of them being a "recurrent vocal feature which has a meaning" (Bloomfield 1926:155). The hierarchical layering of Figure 1 — at this point — is a convenience of representation. As stated in the above series of definitions, morpheme, word, and phrase may be projected separately and independently upon some portion of the vocal features, but they may overlap in those features. The phrase *the grandsons* and the word *grandson* may then segment the same vocal features as the morphemes *grand* and *son*. Consider the four layers of boxes to be **conflated**, the second row (*grandsons*) on top of the bottom (*grandson*), the third row

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[6] Comparing this to Saussure, Bloomfield's *forms* find an analogue in Saussure's *words.* Each is a variable in terms of its extent. Bloomfield's *forms* may be minimal and be morphemes, middling and be phrases, or maximum and be sentences. Saussure's *words* may be minimum and be signs or they be be more inclusive and be (fixed) phrases or whole sentences.

  The organization of Bloomfield's vocal features and of Saussure's sound-images also have a similar basis. For Bloomfield, vocal features exist by virtue of the act of speech and for Saussure, the sound image exists "only if it supports an idea" (Saussure 1959.103). Sapir (1925.37-38) echoes this. He considers the sound [ɸ] to be non-language when used to blow out a match, but part of language when it assists in the pronunciation of an utterance. In the former performance, "The production of the candle-blowing sound is a directly functional act." (38) The [ɸ] **is** its own meaning. "The candle-blowing *wh* means business," whereas in the performance of *when*, the sound "is merely a link in the construction of a symbol [i.e. *sign* or *form*, PWD]." Where language is present, the relation between sound-symbol, vocal features, and sound and thought, stimulus-reaction features, and meaning is **mediated** by sign, form, or symbol.

(*the grandsons*) on top of that, and so forth to yield a kind of Chinese-box arrangement.
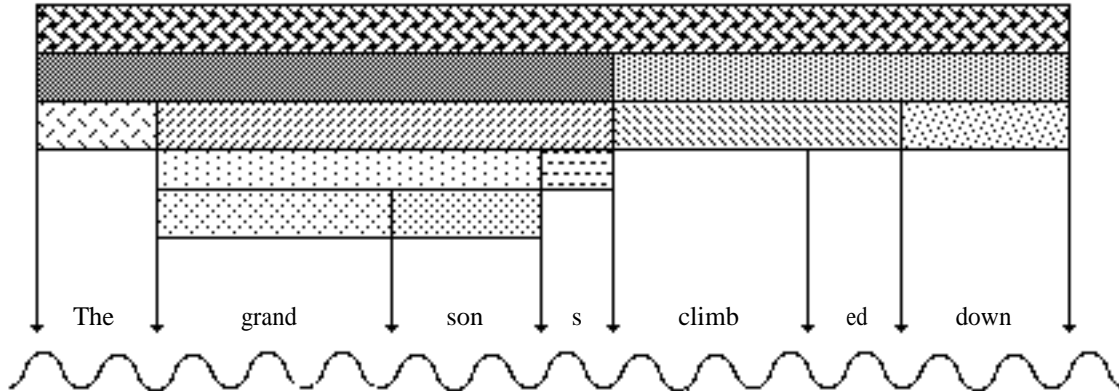

Figure 1: *Depiction of the projection of segmenting organizationupon an utterance.*

2.2   *The pattern of phonemes*

In Figure 1, it is the projection of the morphemic meanings alone — sememes or 'recurrent stimulus-reaction features' — upon the vocal features that results in the pattern. **Another** pattern is identified by the following series of assumptions and definitions in section V (Bloomfield 1926:157):

15.   **Assumption 4**. Different morphemes may be alike or partly alike as to vocal features ...

16.   **Def.**   A minimum same of vocal feature is a *phoneme* or *distinctive sound* ...[7]

Assumption 5. The number of different phonemes in a language is a small sub-multiple of the number of forms ...

Assumption 6. Every form [each of which by **Def. 6** is "vocal features common to same or partly same utterances"]   is made up wholly of phonemes ...

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[7] Emphasis on linearity concentrates American phonology on segments and distribution. Terminologically, 'structure' may label the linear pattern, and 'system', the non-linear pattern. Phonological features are the focus of those more concerned with system. The first real (home grown) intrusion of (simultaneous) phonological features is Hockett's (1947) "Componential analysis of Sierra Popoluca". Concern with distribution results in 'long components' (Harris 1944). Only with Jakobson, Fant & Halle's 1951 *Preliminaries to Speech Analysis* do features start to become the way to do phonology in North America.

> **Assumption 7.** The number of orders of phonemes in the morphemes and words of a language is a sub-multiple of the number of possible orders ...
>
> **20. Def.** The orders which occur are the *sound-patterns* of the language ...
>
> **21. Def.** Different forms which are alike as to phonemes are *homonymous*.

This series takes the morpheme as its domain, and then projects a second — and different — segmentation upon the same vocal features that have been organized into forms.[8] Cf. Figure 2. Phonological organization presupposes the morpheme segmentation, for it works within the segmentations pro-
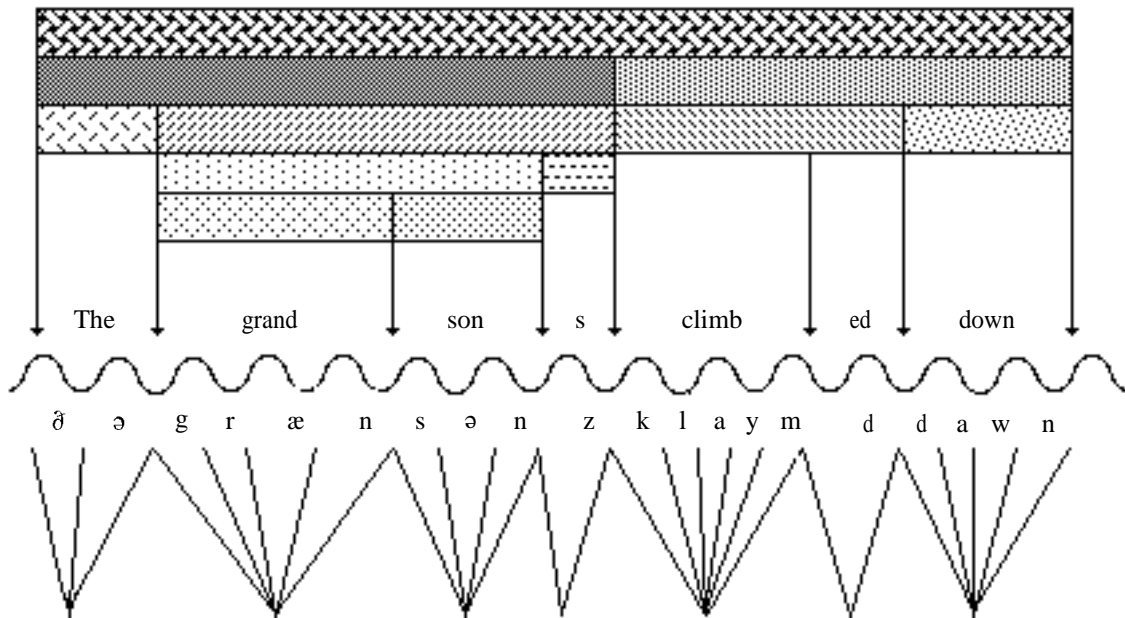

Figure 2: *The second organization of an utterance in terms of phonemes.*

vided by Figure 1. But it operates **independently** on the identified domains of vocal features and does **not** presuppose any fixed relationship between the units of the grammatical pattern, i.e., morphemes, and the units of the phonemic pattern, i.e., phonemes. Any relation between the two organizations of form and phomeme is **indirect** and **mediated** through the vocal features, which are simultaneously, but independently formed by each. One does **not**

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[8] By **Def. 9**, morpheme is equivalent to (a kind of) **form**; and by **Def. 6**, form is reduced to **vocal features**. Therefore, phonemes organize a range of predelimited (morpheme 'size') vocal features, but require nothing in addition to that.

work 'though' grammar to reach phonemics, nor does one work through phonemics to reach grammar. There is, therefore, no necessary hierarchical connection between the two patterns. **Each** is an **autonomous** projection of pattern upon the same vocal features. When Bloomfield (1926:157) writes:

> The morphemes of a language can thus be analyzed into a small number of meaningless phonemes. The sememes on the other hand, which stand in one-to-one correspondence with the morphemes, cannot be further analyzed by linguistic methods.[9]

it is **not** necessary to assume that the relation is

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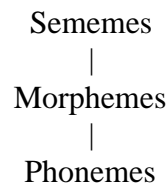Sememes
|
Morphemes
|
Phonemes

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Figure 3: *A hierarchical relation among the organizations of an utterance.*

Morphemes are projections of content, i.e., sememes, upon the vocal features; and phonemes are a second, parallel projection upon the same vocal features. But nothing which Bloomfield writes requires that morphemes 'pass through' phonemes on their way to the data, the utterances.

If there is a one-to-one correlation of meaning (i.e., sememes) to forms (i.e., morphemes), then the top half of Figure 2 (above the continuum of vocal features) is simultaneously a projection of content (Saussure's signifieds) upon vocal features, and the bottom half of Figure 2 is a projection of the shape of expression (Saussure's signifiers) upon that same stream of vocal features. The congruent **intersection of the two projections** now stands as the Bloomfieldian equivalent of the Saussurean sign. The isomorphism between content/sememes and form/morphemes compels us **not** to distinguish a grammar from a semantics, for the one **is** the other. To describe the grammar of minimum and non-minimum forms is to describe simultaneously the

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[9] **If** the sememes could be further analyzed, the units of that analysis would parallel (in the domain of 'stimulus-reaction features') the simultaneous components of Hockett's (1947) 'componential analysis' (in the domain of 'vocal features'). Although Bloomfield's position recognizes the associative relation that Saussure saw between *enseignment*, *clément*, *justement*, etc., there is nothing which recalls the associative relation suggested by *enseignment*, *apprentissage*, *éducation*, etc.

semantics of language. And at this point there seem to be only **two** kinds of pattern within language. Only when the techniques for establishing the units are worked out more explicitly will the patterns be hierarchicalized as in Figure 3.

2.3 *The presence of order in language.*

Bloomfield goes on to recognize a pattern analogous to Saussure's associative pattern, but this pattern is founded on sequence rather than the paradigmatic associative pattern of forms (or signs as in Saussure) (Bloomfield 1926:157-60):

22.   **Assumption 8**. Different non-minimum forms may be alike or partly alike as to the order of the constituent forms and as to stimulus-reaction features corresponding to this order.

23.   **Def**.   Such recurrent sames of order are constructions; the corresponding stimulus-reaction features are *constructional meanings* ...

24.   **Def**.   The construction of formatives in a word is a *morphologic construction* ...

25.   **Def**.   The construction of free forms (and phrase formatives) in a phrase is a *syntactic construction* ...

26.   **Def**.   A *maximum* X is an X which is not part of a larger X ...

27.   **Def**.   A maximum construction in any utterance is a *sentence* ...

28.   **Assumption 9**.   The number of constructions in a language is a small sub-multiple of the number of forms ...

29.   **Def**.   Each of the ordered units in a construction is a *position* ...

31.   **Def**.   The meaning of a position is a *functional meaning* ...

32.   **Def**.   The positions in which a form occurs are its *functions* ...

33.   **Def**.   All forms having the same functions constitute a *form-class* ...

34.   **Def**.   The functional meanings in which the forms of a form class appear constitute the *class-meaning* ...

35.   **Def**.   The functional meanings and class-meanings of a language are the *categories* of the language ...

36.   **Def**.   If a form-class contains relatively few forms, the meanings of these forms may be called *sub-categories* ...

37.   **Def**.   A form-class of words is a *word-class* ...

38.   **Def**.   The maximum word-classes of a language are the *parts of speech* of that language ...

Note first that Bloomfield begins with "the order of the constituent forms". For Saussure, it is the presence of associative patterns (recognized by the repetition of signs) which places the syntagmatic presence into relief. But here it is partial sames of order (not of forms, but of **position**. Cf. Def 29.) corresponding isomorphically to sames of stimulus-reaction which is the basis

for this pattern ... just the reverse of Saussure. This alternative emphasis upon the **syntagmatic** at the expense of the paradigmatic is characteristic of American structuralism. But given the prior emphasis on the r ⋯ s portion of the speech act (as well as the common experience with analyzing spoken — sequentially represented — samples of unfamiliar languages), this bias is not surprising. Throughout, each formal construct maintains its one-to-one relation with meaning:

Form	Meaning
construction	constructional meaning
position	functional meaning
form-class	class-meaning

If we are able to describe the morphemes, constructions, positions, and form-classes, we have automatically described the semantics of language. Grammar and semantics are not distinct. They constitute different aspects of one patterning, that of constructions.

3. *Conclusion and an alternative organization*

The theory of language that is described in Bloomfield's postulates posits three distinct kinds of pattern in language: that of forms, that of phonemes, and that of positions. Each of these three patterns supplies its distinct organization to the stream of vocal features. Although the patterns of phonemes depends upon the prior segmentation of the continuum of vocal features into morpheme-sized chunks, phonemic organization does not work 'through' morphemes. And the organization of positions into constructions, depends upon the assumption that "non-minimum forms may be alike or partly alike as to order of the constituent forms", but constructions are **not** orders of forms. They are not another aspect of the previous patterning of forms. Patterns of forms were recognized by the corresponding sememes. This is a pattern of positions recognized by their own functional meaning. Assumption 8 directs us to perceive this pattern via forms (in the way phonemes were recognized via forms), but it is a separate and independent organization of the stream of vocal features. Figure 4 attempts to depict the relation of forms, phonemes, and positions to each other and to vocal features.
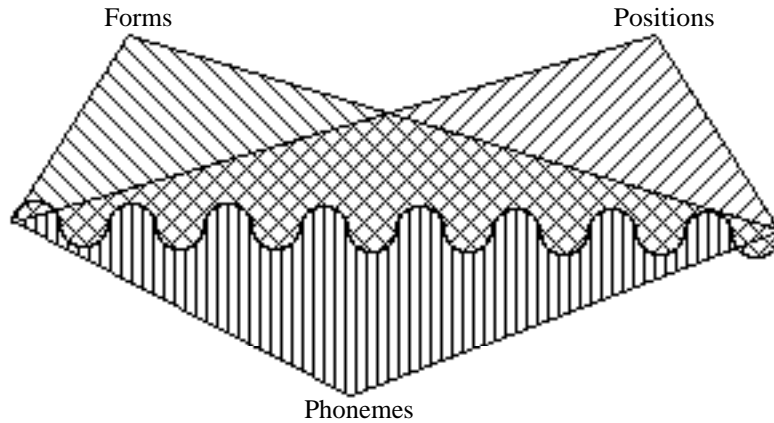
Figure 4: *The Relations of Form, Position, and Phoneme to*
Each Other and to Vocal features.

The series of definitions from 23 - 38 suggest a grammar of the familiar sort with hierarchy: i.e., ordered positions filled by forms which are in turn constructions composed of ordered positions, etc. But that is **not** a necessary interpretation of Bloomfield's construction(s), and it is not one that is confirmed by Bloomfield's *Language* (1933), in which he presents a slightly different view of this aspect of language, one which centers about the notion of **taxeme**, "a simple feature of grammatical arrangement" (Bloomfield 1933:166). Bloomfield (1933:163f.) identifies four taxemes:

(i)   *Order*. This is the same "order" of **Assumption 8**. It consists of "the succession in which the constituents of a complex form are spoken" (Bloomfield 1933:163).

(ii)   *Modulation*. Modulation consists of the use of "secondary phonemes ... of pitch ... of stress" (Bloomfield 1933:163) to alter the sense of an utterance: ²*You've got a* ³*headache*³|| versus ²*You've got a* ³*headache*¹#

(iii)   *Phonetic modulation*. It is recognized as "a change in the primary phonemes of a form" (Bloomfield 1933:163). Compare:
        (a) Who do you want to drive?   /wántə/
        (b) Who do you wanna drive?   /wánə/

(iv)   *Selection*. "The meaning of a complex form depends in part upon the selection of the constituent forms ... the features of selection are usually quite complicated with form-classes divided into sub-classes" (Bloomfield 1933:165)

Each of these taxemes by itself is a **grammatical feature** (cp. vocal feature) which has no meaning. But the taxemes may act together in meaning

combinations (minimal or not) to create a **tactic form**, which when combined with its meaning, is a **grammatical form**.[10] Now the "smallest meaningful units of grammatical form may be spoken of as tagmemes, and their meanings as episememes" (Bloomfield 1933:166). Compare, for example, SV versus SV in English:

(1) (a)   Oh, *am **I*** lonely!
     (b)   ?Oh, ***I*** *am* lonely!

(2) (a)   Why *was **the thief*** cáught?
     (b)   Why ***the thief*** *was cáught* ...

(3) (a)   ***The thief*** *had gotten caught*.
     (b)   *Had **the thief*** *gotten caught* ...

(4) (a)   I shall never do that again.
     (b)   Never *shall **I** do* that again.
     (c)   ?Never ***I*** *shall do* that again.

The taxeme of selection (of the noun form-class and the verb form-class) plus the taxeme of order combines to effect the contrasting tagmemes of SV and VS. SV will have one episememe which contrasts with the episememe of VS. Finally (Bloomfield 1933:184):

> The free forms (words and phrases) of a language appear in larger free forms (phrases), arranged by taxemes of modulation, phonetic modification, selection, and order. Any meaningful recurrent of such taxemes is a *syntactic construction*.

Such a conception of syntax (or more broadly grammar) allows us to understand its patterns without requiring the notion of hierarchy. Such a **flat** view of language is not, however, the one which comes to dominate the syntax of American Structuralism.[11]

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[10] A tactic form will always be a grammatical form, for it is the presence of meaning which delimits the taxemes as a tactic form. Without meaning, taxemes are like vocal features without accompanying stimulus-response reactions. Neither is an utterance.

[11] The issue re-emerges within Transformational Generative Grammar in terms of whether or not there exist languages which have transformational rules which do **not** refer to hierarchical structure (i.e., trees or portions of trees). The fact that some languages do appear to have rules which make reference to hierarchy is a strong justification for TGG as it stands;

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but if languages (some or all) do not work in this way, then TGG is weakened. The issue here is expressed in terms of **configurational** languages and **nonconfigurational** ones. Hale (1976) suggests that Warlpiri (Walbiri) may be a nonconfigurational language