9. MORPHEMIC STRUCTURE OF WORDS

1. Word-Structure and Morphemes.
2. Classification of Morphemes.
   2.1. Semantic Classification of Morphemes.
   2.2. Structural Classification of Morphemes.
3. Types of Meaning in Morphemes.
   3.1. Lexical Meaning.
   3.2. Differential Meaning.
   3.3. Distributional Meaning.
   3.4. Part-of-Speech Meaning.
4. Morphemic Types of Words.
5. Types of Word-Segmentability.
   5.1. Complete Segmentability.
   5.2. Conditional Segmentability.
   5.3. Defective Segmentability.
6. Procedure of Morphemic Analysis.
7. Principles of Word-Segmentation.

KEY TERMS

Word-structure, morpheme, allomorph (morpheme variant), root-morphemes (radicals), non-root morphemes, free morpheme, bound morpheme, semi-free / semi-bound morpheme, combining form, lexical meaning of morphemes, differential meaning of morphemes, distributional meaning of morphemes, part-of-speech meaning of morphemes, monomorphic word, polymorphic word, monoradical word, polyradical word, word-segmentability, complete segmentability of words, conditional segmentability of words, defective segmentability of words, morpheme proper / full morphemes, pseudo-morphemes / quasi-morphemes, affix principle of word-segmentation, root principle of word-segmentation.

1. WORD-STRUCTURE AND MORPHEMES

Word-structure is internal organization of words. The **morpheme** is the smallest indivisible two-facet language unit. Morphemes occur in speech only as constituent parts of words but not independently.

Morphemes may have different phonetic shapes. In the word-cluster *please, pleasing, pleasure, pleasant* the root-morpheme is represented by phonemic shapes: [pli:z] in *please* and *pleasing*, [pleʒ] in *pleasure* and [plez] in *pleasant*.

In such cases the phonemic shapes of the word stand in complementary distribution or in alteration with each other. All the representations of the given morpheme that manifest alteration are called **allomorphs** of that morpheme or **morpheme variants**. Thus, [pli:z], [plez] and [pleʒ] are allomorphs of one and the same morpheme.

2. CLASSIFICATION OF MORPHEMES

Morphemes may be classified from the semantic and structural points of view.

2.1. SEMANTIC CLASSIFICATION OF MORPHEMES

Semantically morphemes fall into 2 types:

1) **Root-morphemes (radicals)** are the lexical nucleus of words, it has an individual lexical meaning shared by no other morpheme of the language, for example, in the words *rewrite, hopeful, disorder* the root-morphemes – *write, hope-,* and *-order* are understood as the lexical centres of the words. The root-morpheme is isolated as the morpheme common to a set of words making up a word-cluster, for instance, the morpheme *work-* in *to work, worker, working* or *theor-* in *theory, theorist, theoretical,* etc.

2) **Non-root morphemes** include inflectional morphemes (inflections) and affixational morphemes (affixes). Inflections carry only grammatical meaning and thus are relevant only for the formation of word-forms, whereas affixes are relevant for building various types of stem. Lexicology is concerned only with affixational morphemes.

2.2. STRUCTURAL CLASSIFICATION OF MORPHEMES

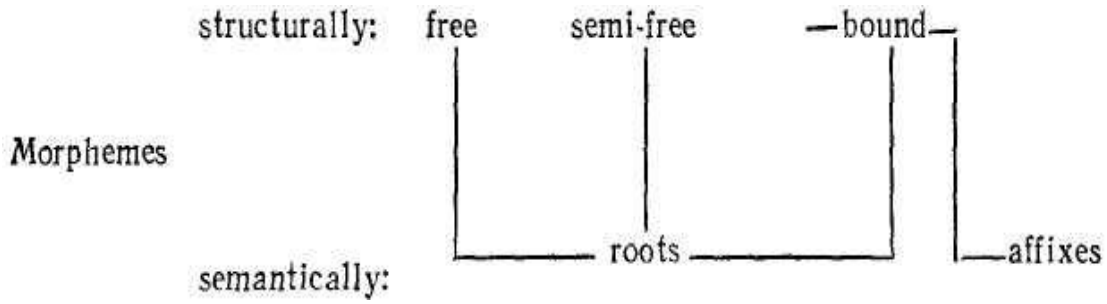
Structurally morphemes fall into three types:

1) A **free morpheme** is defined as one that coincides with the stem or a word-form. A great many root-morphemes are free morphemes, for example, the root-morpheme *friend* − of the noun *friendship* is naturally qualified as a free morpheme because it coincides with one of the forms of the noun *friend.*
2) A **bound morpheme** is a morpheme that must be attached to another element. It occurs only as a constituent part of a word. Affixes are bound morphemes for they always make part of a word, for example, the suffixes *-ness, -ship, -ise (-ize)* in the words *kind-ness*, *friend-ship, real-ize;* the prefixes *un-, dis-*, *de-* in the words *un-tidy*, *dis-like*, *de-mobilize*.

   Combining forms are morphemes borrowed namely from Greek or Latin in which they exist as free forms. They are considered to be bound roots, for instance, the word *tele-phone* consists of two bound roots, whereas the word *cycl-ic* – of a bound root and an affix.
3) **Semi-bound (semi-free) morphemes** are morphemes that can function in a morphemic sequence both as an affix and as a free morpheme. For example, the morpheme *well* and *half* on the one hand occur as free morphemes that coincide with the stem and the word-form in utterances like *sing well, half a month*, on the other hand they occur as bound morphemes in words like *well-known, half-eaten, half-done.*

The relationship between the two classifications of morphemes can be graphically presented in diagram 14:

Diagram 14. The relationship between the two classifications of morphemes



Thus, semantically morphemes fall into root-morphemes and affixational morphemes (prefixes and suffixes); structurally into free, bound and semi-free (semi-bound) morphemes.

3. TYPES OF MEANING IN MORPHEMES

In morphemes can be singled out different types of meaning depending on the semantic class they belong to. Root-morphemes possess lexical, differential and distributional types of meaning. Affixational morphemes have lexical, part of-speech, differential and distributional types of meaning. Both root-morphemes and affixational morphemes are devoid of grammatical meaning.

3.1. LEXICAL MEANING

The lexical meaning of root-morphemes differs from that of affixational morphemes. Root-morphemes have an individual lexical meaning shared by no other morphemes in the language, for instance, *light, deaf, deep*, etc. The lexical meaning of affixational morphemes is, as a rule, of a more generalizing character. For example, the suffix *–en* carries the meaning ‘the change of a quality’, for example, *to lighten* – ‘to become lighter’, *to deafen* – ‘to make somebody deaf’, *to deepen* – ‘to become deeper than it was before’.

As in words lexical meaning in morphemes may be also analyzed into denotational and connotational components. The connotational component of meaning may be found not only in root-morphemes but in affixational morphemes as well, for instance, the suffixes *-ette (kitchenette)*; *-ie (dearie, girlie)*; *-ling (duckling)* bear a heavy emotive charge.

The affixational morphemes with the same denotational meaning sometimes differ only in connotation. For example, the morphemes *–ly*, *–like*, *-ish* in the words *womanly*, *womanlike*, *womanish* have the same denotational meaning of similarity but differ in the connotational component (cf. the Russian equivalents: женственный – женский – бабий).

Stylistic reference may also be found in morphemes of different types. For instance, the affixational morphemes – *ine* (*chlorine*), *-oid* (*rhomboid)* are bookish.

3.2. DIFFERENTIAL MEANING

Differential meaning is the semantic component that serves to distinguish one word from all others containing identical morphemes. In words consisting of two or more morphemes, one of the constituent morphemes always has differential meaning. For example, in the word *forehead* the morpheme – *head* serves to distinguish the word from other words containing the morpheme *fore-*: *forefoot*, *forepart, foreground*.

3.3. DISTRIBUTIONAL MEANING

Distributional meaning is the meaning of the order and arrangement of morphemes making up the word. It is found in all words containing more than one morpheme. For example, the word *teacher* is composed of two morphemes *teach-* and *–er* both of which possess the denotational meaning ‘to help students to learn something’ and ‘the doer of the action’. A different arrangement of the same morphemes **erteach* would make the word meaningless.

3.4. PART-OF-SPEECH MEANING

Part-of-speech meaning is the indicative of the part of speech to which a derivational word belongs. For instance, the affixational morpheme – *ness (darkness*) is used to form nouns, while the affixational morpheme –*less (careless*) forms adjectives. Sometimes the part-of-speech meaning of morphemes predominates. For example, the morpheme –*ice* in the word *justice* serves principally to transfer the part-of-speech meaning of the morpheme *just*- into another class and namely that of the noun.

4. MORPHEMIC TYPES OF WORDS

According to the number of morphemes words are classified into:

I. **Monomorphic** or **root-words** which consist of only one root-morpheme, for example, *small, dog*, *make*, etc.

II. **Polymorphic words** according to the number of root-morphemes are classified into:

1. **Monoradical words** (having one-root morpheme) fall into three subtypes:
   a) ***radical-suffixal words***, i.e. words consisting of one root-morpheme and two or more suffixal morphemes, for example, *respectable*, *respectability*;
   b) ***radical-prefixal words***, i.e. words consisting of one root-morpheme and a prefixal morpheme, for example, *overcome*, *unbutton*;
   c) ***prefixo-radical-suffixal words***, i.e. words which consist of one root, prefixal and suffixal morphemes, for instance, *unforgettable*, *misinterpretation*.
2. **Polyradical words** (having words consisting of two or more roots) fall into two subtypes:
   a) polyradical words which consist of two or more roots with no affixational morpheme, for example, *pen-friend, copybook*;

b) polyradical words which contain at least two roots and one or more affixational morpheme, for instance, *safety-pin, light-mindedness, pen-holder*.

5. TYPES OF WORD-SEGMENTABILITY

Word-segmentability is the division of words into morphemes. Three types of morphemic segmentability of words are distinguished: complete, conditional, defective.

5.1. COMPLETE SEGMENTABILITY

Complete segmentability is characteristic of words, the morphemic structure of which is transparent enough, as their individual morphemes clearly stand out within the word and can be easily isolated. The morphemes making up words of complete segmentability are called **morpheme proper** or **full morphemes**. The transparent morphemic structure of the segmentable words *useless, hopeful* is conditioned by the fact that their constituent morphemes recur with the same meaning in other words: *use, to use, a hope, to hope* and *homeless, powerful*.

5.2. CONDITIONAL SEGMENTSBILITY

Conditional segmentability characterizes words whose segmentation into the constituent morphemes is doubtful for semantic reasons. In the words *retain, detain* or *deceive, receive* the sound-cluster – [ri-] and [di-] seem to be singled out easily due to their recurrence in a number of words. But, they have nothing in common with the phonetically identical morphemes *re-, de-*, for instance, in *rewrite, reorganize* or *decode, reorganize*. Neither the sound-cluster [ri-], [di-] nor [-tain], [si:v] possess any lexical or part-of-speech meaning of their own. The types of meaning that can be ascribed to them are differential and distributional: the [ri-] distinguishes *retain* from *detain* and the [-tein] distinguishes *retain* from *receive*,

whereas their order and arrangement point to the status of the *re-, de-* as different from that of the *–tain* and *–ceive* within the structure of the words. The morphemes making up words of conditional segmentability do not rise to the status of full morphemes for semantic reason and that is why are called **pseudo-morphemes** or **quasi-morphemes.**

5.3. DEFECTIVE SEGMENTABILITY

Defective segmentability is the property of words whose component morphemes seldom or never recur in other words. One of the component morphemes of these words is a unique morpheme in the sense that it does not recur in a different linguistic environment. A unique morpheme is isolated and understood as meaningful because the constituent morphemes display a more or less clear denotational meaning. In the word *hamlet* the morpheme *-let* has the meaning of diminutiveness. This morpheme occurs in the words *ringlet, leaflet, streamlet*. The sound-cluster [hæm-] that is left after the isolation of the morpheme *-let* does not recur in any other English word. The morpheme *ham-* carries a differential and distributional meaning as it distinguishes *hamlet* from *streamlet, ringlet*. This morpheme is qualified as unique.

6. PROCEDURE OF MORPHEMIC ANALYSIS

The procedure of segmenting words into the constituent morphemes is known as **the method of Immediate and Ultimate Constituents** (any of two meaningful parts forming a larger linguistic unit (L. Bloomfield)). It is based on a binary principle, i.e. each stage of the procedure involves two components the word immediately breaks into. At each stage these two components are referred to as **the Immediate Constituents** (ICs). Each IC at the next stage of analysis is in its turn broken into smaller meaningful elements. The analysis is completed when we arrive at constituents incapable of further division, i.e. morphemes. These morphemes are

referred to as the **Ultimate Constituents** (UCs). For example, the noun *friendliness* is first segmented into the ICs 1) *friendly-* (recurring in the adjectives *friendly* and *friendly-looking*) and 2) *–ness* (found in a countless number of nouns), for instance, *happiness, darkness*. The IC *–ness* is at the same time an UC of the noun, as it cannot be broken into any smaller elements possessing both sound-form and meaning. The IC *friendly-* is next broken into the ICs 1) *friend-* (recurring in *friendship, unfriendly*) and 2) *–ly* (recurring in *wifely, brotherly*). The ICs *friend-* and *–ly* are both UCs of the word under analysis.

7. PRINCIPLES OF WORD-SEGMENTATION

The division into ICs and UCs can be carried out on the basis of two principles: the affix principle and the root principle.

According to **the affix principle** the segmentation of the word into its constituent morphemes is based on the identification of an affixational morpheme within a set of words, for example, the identification of the morphemes *–less* leads to the segmentation of words like *thoughtless, careless, merciless* into the suffixational morpheme *–less* and the root-morphemes *thought-, care-, merci-* within a word-cluster.

According to **the root principle** the identification of the root-morpheme, for example, *agree-* in the words *agreeable, agreement, disagree* makes it possible to split these words into the root *agree-* and the affixational morphemes *-able, -ment, dis-*.

As a rule, the application of one of these principles is sufficient for the morphemic segmentation of words.

9. DERIVATION

1. Derivational Structure.
2. Derivational Relations.

3. Derivational Bases.

3.1. Structural Classification of Derivational Bases.

4. Derivational Affixes.

4.1. Semantic Characteristics of Derivational Affixes.

4.2. Semi-affixes.

5. Derivational Patterns.

5.1. Structural-semantic Classification of Derivational Patterns.

KEY TERMS

Word-derivation, derivational structure, derivational relations, simplexes / non-derived words, complexes / derivatives, derivational structure, derivational base, simple stem, derived stem, compound stem, derivational affixes, derivational patterns, structural formulas, structural patterns, structural-semantic patterns.

1. DERIVATIONAL STRUCTURE.

Word-derivation in morphology is a word-formation process by which a new word is built from a stem – usually through the addition of an affix – that changes the word class and / or basic meaning of the word.

The nature, type and arrangement of the ICs of the word are known as its **derivational structure**. Though the derivational structure of the word is closely connected with its morphemic or morphological structure and often coincides with it, it differs from it in principle. For instance, the words *unmistakable* and *discouraging* morphemically refer to one and the same type as they both are segmented into three UCs – one prefixational, one root and one suffixational morpheme. But these words belong to different derivational types. In *unmistakable* the prefixational morpheme is added to the sequence of the root and the prefixational morphemes. Thus, the meaning of the word is derived from the relations between *un-* and *mistakable* – ‘not mistakable’.

In the word *discouraging* the suffixational morpheme is added to the combination of the prefixational and the root morphemes and the meaning of the word is understood from the relations *discourage* and *–ing* – 'something that discourages'.

Hence, the word *unmistakable* refers to a prefixational derivative and the word *discouraging* – to a suffixational one.

2. DERIVATIONAL RELATIONS

Derivational relations are the relations between words with a common root but of different derivational structure. According to the derivational structure all words fall into two big classes: simplexes, non-derived words and complexes or derivatives.

Simplexes are words which derivationally cannot be segmented into ICs. The morphological stem of simple words, i.e. the part of the word which takes on the system of grammatical inflections is semantically non-motivated and independent of other words, for example, *hand, come, blue,* etc. Morphemically it may be monomorphic in which case its stem coincides with the free root-morpheme as in, for instance, *hand, come, blue,* etc. or polymorphic in which case it is a sequence of bound morphemes as in, for instance, *anxious, theory, public*, etc.

Derivatives are words which depend on some other simpler lexical items that motivate them structurally and semantically, i.e. the meaning and the structure of the derivative is understood through the comparison with the meaning and the structure of the source word. Hence derivatives are secondary, motivated units, made up as a rule of two ICs, i.e. binary units, for example, words like *friendliness, unwifely, school-masterish*, etc. are made up of the ICs *friendly + -ness, un- + wifely, schoolmaster+-ish*. The ICs are brought together according to specific rules of order and arrangement preconditioned by the system of the language. It follows that all derivatives are marked by the fixed order of their ICs.

3. DERIVATIONAL BASES

A derivational base is the part of the word, which establishes connection with the lexical unit that motivates the derivative and determines its individual lexical meaning describing the difference between words in the same derivational set. For instance, the individual lexical meaning of the words *dancer, rebuilder, whitewasher* which denotes active doers of the action, is signaled by the lexical meaning of the derivational bases: *dance-, rebuild-, whitewash-*, which establish connection with the motivating source verb.

Derivational bases differ from **morphological stems** both structurally and semantically (see Table 8).

Table 8. Differential characteristics of morphological stem and derivational base.

A morphological stem	A derivational base
1) the starting point for **the forms** of the word (*heart – hearts*)	1) the starting point **for different words** (*heart – hearty – heartless, heartbeat)*
2) **predicts** the part-of-speech meaning of the word (*daydreamer* (n)) (мечтатель)	2) **does not predict** the part-of-speech meaning of the word (*daydreamer* (n) from *daydream* (v))
3) stands for the whole semantic structure of the word, **represents all lexical meanings of the word** (*glass* (n) – 1. a hard clear substance; 2. a small container for drinking out of; 3. attractive objects made of glass; 4. mirror; 5. a barometer)	3) **represents only one meaning of the source word** (*glassful* – a drinking vessel; *glassy* – smooth and shiny like glass)

3.1. STRUCTURAL CLASSIFICATION OF DERIVATIONAL BASES

Structurally derivational bases fall into 3 groups:

1. Bases that coincide with morphological stems, for example, ***duti****ful*, ***duti****fully; to* ***day-dream****,* ***daydream****er;*

Stems that serve as this class of bases may be of different derivational types thus forming derivational bases of different degrees of complexity (сложность):

a) **simple stems**, which consist of only one, semantically non-motivated constituent: *pocket, motion, retain*;

b) **derived stems**, which are semantically and structurally motivated. They are as a rule binary (made up of two ICs): *girlish* (девический), *girlishness* (девичество). The derived stem of the word *girlish* is *girl*, whereas the derived stem of the word *girlishness – girlish-*;

c) **compound stems** are always binary and semantically motivated, but unlike the derived stems both ICs of compound stems are stems themselves: *match-box* (two simple stems), *letter-writer* (one simple and one derived stem); *aircraft-carrier* (a compound and derived stem).

2. Bases that coincide with word-forms: *un****smiling****, paper-****bound****.* This class of bases is represented by verbal word-forms the present and the past participles. The collocability of this class of derivational bases is confined to:

a) a few derivational affixes such as the prefix *un-* and the suffix *–ly*: *unnamed, unknown; smilingly, knowingly*;
b) other bases which coincide only with nominal and adjectival stems: *mocking-bird, dancing-girl, ice-bound, easygoing*.

3. Bases they coincide with word-groups: ***flat-waist****ed*, ***second-rate****ness*. Bases of this class allow a rather limited range of collocability. They are mostly combined with derivational affixes in the class of adjectives and nouns: *blue-eyed, long-fingered, old-worldish*. Free word-groups make up the greater part of this class of bases.

4. DERIVATIONAL AFFIXES

Derivational affixes are Immediate Constituents of derived words in all parts of speech. Semantically derivational affixes are characterized by a unity of part-of-speech meaning, lexical meaning, differential and distributional meanings.

Derivational affixes have two basic functions:

1) stem building which is common to all affixational morphemes: derivational and non-derivational, cf.: *-sh* in the words *girlish*, *greyish* and *–ish* in the words *publish*, *distinguish*;

2) word-building, this is the function of repatterning a derivational base and thus forming new words. The repartterning may result in transferring a derivational base into the stem of another part of speech, for example, the derivational suffix *–ness* in the words *friendliness* and *girlishness* reparttern the adjectival derivational bases *friendly-*, *girlish-* into the noun stems. The repartterning may also result in transferring a derivational base into stem of the same part of speech, for instance, *–dom* applied to the noun *official* turns it into the stem *officialdom* and thus forms a new noun.

4.1. SEMANTIC CHARACTERISTICS OF DERIVATIONAL AFFIXES

Semantically derivational affixes are characterized by a unity of part-of speech meaning, lexical meaning, differential and distributional meanings.

The part-of-speech meaning is proper to derivational suffixes and prefixes in different degrees. It stands out clearly in derivational suffixes but it is less evident in derivational prefixes. Prefixes like *en-*, *de-*, *out-*, *un-*, *be-* possess the part-of-speech meaning and function as verb classifiers, for example, *enlarge, deice, unhook, befriend*. The prefix *over-* evidently lacks the part-of-speech meaning and is freely used both for verbs and adjectives, for example, *oversleep, overeat, over-confident, over-worried*.

The lexical meaning in derivational affixes also has its peculiarities and may be viewed at different levels:

1) the lexical meaning of a generic type proper to a set of affixes, forming a semantic subset. For example, the meaning of resemblance found in the suffixes *–ish, -like, -y, -ly (spiderish, spiderlike, spidery*); the meaning of abstract quality conveyed by the suffixes *–ness, -ty (blindness, equality*); the meaning of absence conveyed by the prefix *un-* and the suffix *–less (unclean, unlucky, speechless, heartless*);

2) an individual lexical meaning shared by no other affix. For instance, the suffixes *–ish, -like, -y* all have the meaning of resemblance but *–like* conveys an overall resemblance, *-ish* conveys likeness to the most typical qualities of the object; *-y* conveys likeness to outer shape, form, size of the object.

Derivational affixes may be monosemantic, for example, the prefix *omni-* meaning 'all' (*omnipresence, omniscience*), and polysemantic, for example, the suffix *–less* meaning 'lacking smth' (*brainless, endless*) and 'exceeding a category' (*timeless, countless*).

4.2. SEMI-AFFIXES

There is a specific group of morphemes whose derivational function does not allow one to refer them either to derivational affixes or to bases, e.g., *half-* in the word *half*-done, *half*-broken; *self-* in the words *self*-made, *self*-interest; *ill-* in the word *ill*-dressed, *ill*-behaved. Such morphemes are called **semi-affixes**, i.e. elements which stand midway between roots and affixes. On the one hand, these morphemes retain certain lexical ties with the root-morphemes of independent words, on the other hand, they function as derivational prefixes.

5. DERIVATIONAL PATTERNS

A **derivational pattern** is a regular meaningful arrangement, a structure that imposes rigid rules on the order and the nature of the derivational bases and affixes that may be brought together. Patterns are usually represented in a generalised way in terms of conventional symbols: small letters **v, n, a, d, num** stand for the bases which coincide with the stems of the respective parts of speech: verbs, nouns, adjectives, adverbs, numerals; $\mathbf{v_{ed}}$, $\mathbf{v_{ing}}$ stand for the bases which are the past and present participles respectively. In words of the *long-fingered* or *sit-inner* type the derivational bases are represented by bracketed symbols of the parts of speech making up the corresponding collocations, for example *(a+n)*+ +-ed), *(v+d)* + ***er***.

5.1. STRUCTURAL-SEMANTIC CLASSIFICATION OF DERIVATIONAL PATTERNS

Derivational patterns may represent derivational structure at different levels of generalisation:

1) at the level of **structural types** patterns are known as **structural formulas**. They specify only the class membership of ICs and the direction of motivation, such as a+sf → N, prf +n → V, prf + n → N, n + sf → N, n + sf → V, etc.

In terms of patterns of this type, all words may be classified into four classes:

a) **suffixal derivatives**: *friendship, glorified, blackness, skyward,* etc.*;*

b) **prefixal derivatives**: *rewrite, exboxer, non-smoker, un-happy,* etc.;

c) **conversions**: *a cut, to parrot, to winter*, etc.;

d) **compound words**: *key-ring, music-lover, wind-driven,* etc.

2) at the level of **structural patterns** which specify the base classes and individual affixes thus indicating the lexical-grammatical and lexical classes of derivatives within certain structural classes of words. The affixes refer derivatives to specific parts of speech and lexical subsets as, for example, DP n + *ish* → A signals a set of adjectives with the lexical meaning of resemblance, for example, *boyish, girlish, womanish,* whereas a + *-ish* → A signals adjectives meaning a small degree of quality, for example, *pinkish, whitish, wildish,* etc.

3) at the level of **structural-semantic patterns** the latter specify semantic peculiarities of bases and individual meanings of affixes. For example, the nominal bases in the pattern n+-*ess* → N are confined to nouns having in their semantic structures a component ‘a male animate being’: *lioness, traitress, stewardess*, etc.; the nominal bases in n+-*ful*$_2$ → N are limited by nouns having a semantic component ‘container’: *lungful, carful, mouthful*, whereas in n+ -*ful*$_1$ → A the nominal bases are confined to nouns of abstract meaning. The same is true of the pattern n + -*y* → A which represents different semantic sets of derivatives specified by semantic constraints imposed on both the bases and the suffix: nominal bases denoting living beings are collocated with the suffix -*y* meaning ‘resemblance’: *birdy, spidery, doggy*, etc., but nominal bases denoting material, parts of the body attract another meaning of the suffix -*y* that of ‘considerable amount, size’ resulting in the adjectives like *powdery, grassy, leggy, starry*, etc.

Thus derivational patterns may be classified into two types — **structural pattern** and **structural-semantic pattern.**