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notes on semantic analysis

—an introductory survey—

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　　1 **introductory** A modest attempt is made here to give an introductory survey of recent trends in semantic analysis of linguistic signs. Linguistic approaches to the problems of meaning are far from uniform, and we are sometimes led to a pessimistic view that a peaceful coexistence of conflicting theories is never to be attainable. A predominant trend, however, may be discernible in apparently hostile and suspicious camps, and it is with a naive hope for such an eclectic synthesis that semantic thories are here to be examined.

　　1.1 'It is true that many crimes have been committed in the name of meaning; but this is not a situation in which sin can be prevented by abolishing the occasion of sin, for without meaning there can be no lanugage and no linguistics' (Reid 18). The problems of meaning, then, must be faced, whether 'mentalistically' or ₊mechanistically'. But by now both mentalists and mechanists have become fairly sophisticated ; even a most flagrant mentalist is now not so naive enough as to identify the linguistic meaning with a psychical phenomenon analysable by a psychological introspection, while a radical mechanist dare not assert a complete banishment of meaning from linguistic descriptions.　We need not perhaps concern ourselves with such a provocactive discrimination any longer.　Our concerted efforts should be directed towards the establishment of a semantic 'metalanguage' in which our 'object language', English, is to be described semantically.

　　With this ultimate end in view, the present introductory paper is first to follow and examine a 'structural' or 'formal' approach to meaning which can no doubt be regarded as one predominant trend today,　and then to clarify some semantically fundamental notions based on

this formal approach, and finally, venturing beyond the territory of a formalistic discipline, to give a very rough sketch of recent semantic analyses which may be outside the sphere of a purely formal approach. Needless to say, the paper of this nature cannot but be very general, though, if a further specification is required, it may be added that we are primarily concerned with a synchronic system of present-day English (henceforth symbolized by E).

2 **a formal approach to meaning** Undoubtedly of no little significance is a 'structural' or 'formal' attitude which present-day linguists successfully adopt towards basic problems of linguistics. In European linguistic circles as well as in American descriptive linguistics, attempts have been persistently made to establish 'the autonomy of linguistic science'. Their common objective, though with varying shades of emphasis, is to describe linguistic phenomena, not by appeal to standards external to a language, but on an 'immanent' basis, relying mainly on interdependent intra-linguistic features which might be roughly named the 'structure' of the language.

2.1 Let us characterize this notable tendency of linguistics today by the word 'formal'; though the word 'formal' (or its often synonymous 'structural') is an emotionally loaded word, we wish to use the word to mean simply 'based on intra-linguistic features or criteria, and with as little appeal to extra-linguistic standards as possible' (for a further elucidation, cf. section 3 below).

2.2 From the most orthodox point of view of structural linguistics, semantics is perhaps still regarded as outside the domain of linguistics proper, i.e. in Trager's sense of 'microlinguistics'; just as phonetics, as distinguished from phonemics, belongs to the prelinguistic world of physical sounds, so semantics is to be studied in the metalinguistic world of 'things'. This view is based on a definition of semantics as a branch studying the relation between language and reality. A semantics in this sense may be studied profitably in extra-linguistic sciences, (e.g. psychology, sociology, epistemology, etc.) A purely linguistic semantics, as an autonomous discipline, (which may be dubbed 'sememics', as a term parallel to 'phonemics'; cf. Nakajima 45–59; we retain and use 'semantics' in the paper), is then to be sharply distinguished from extra-linguistic semantics. And, to be strictly faithful to this requirement, a semantic analysis of the linguistic signs as 'formal' (in the sense clarified above) as possible should first of all be taken into consideration.

2.3 A pioneer formulation of this formal approach may be attributed to de Saussure, though even here is pertinent M. Joos's remark that 'it is in general possible to say, of any single paragraph of a modern linguistic treaties, both "This is de Saussure" and "This is not de Saussure" with reference to the same doctrine '(RL 18). Despite Ogden-Richards' severe attack on de Saussure, Saussurean distinction between signifiant and signifié is, in a sense, more amenable to our formal approach than their basic triangle is; a study of the linguistic sign, independent of the 'referent', should be made if the referent can be equated with the 'thing' in the outside world. Because the signifiant stands in do direct and no immediate relation to the referent (i.e. Ogden-Richards' imputed relation holding between them), a formal approach must concern itself primarily with the dyadic relation holding between the signifiant and the signifié.

2.4 To this semantic relation it is very easy to give a psychological (or mentalistic) interpretation, as de Saussur himself repeatedly does; hence such almost hackneyed quotations from him as 'Le signe unit non une chose et un nom, mais un concept et une image acoustique'; 'Le signe linguistique est donc une entité psychique à deux faces' (Saussure 98–99). So does S. Ullmann, a leading semantician of today, : 'Both the words and their senses are engrams ; they are both psychical phenomena' (Ullmann 28). The psychical nature of the linguistic sign cannot of course be overemphasized, but a pure formalist would perhaps have to pretend ignorance noncommitally on this point.

More congenial to the formal approach is perhaps Ullmann's emphasis upon the correlative nature of name(=signifiant) and sense(=signifié). Ullmann is undoubtedly in accordance with the trend of formalism when he defines meaning as this reciprocal relation itself: 'Meaning is a reciprocal relation between name and sense, which enables them to call up one another' (Ullmann 70) ; here meaning ceases to be identified with one of the semantic components of the basic triangle, and becomes a designation for the relational structure of the linguistic sign.

2.5 What might be deemed a logical conclusion of the formalistic trend can be found in the glossemtic notion of the sign structure. The basic idea underlying the glossematic sign notion can again be traced back to de Saussure, whose pronouncements such as 'cette combinaison (i.e. of the two constituent factors of the sign) produit une forme, et non une chose' or 'la langue est nue forme et non une substance' (Saussure 159, 169) provide an unmistakable starting-point for this purely formal school. Thus glossematicians find, not in Saussure's well–known sociologi cal and psychological view of the language, but in his conception of the lagnuage as a pure form, a precursory formulation of their philosophy; for them 'a totality does not consist of things but relationships, and not substance but only its internal relationships have scientific existence' (Hjelmslev 23).

In a glossematic perspective Ullmann's 'meaning' will be viewed as a 'function' (the everyday word for which is perhaps 'relation'), whose 'functives' (or 'terminals') are 'name' and 'sense'. The constituents of the linguistic signs are here regarded as purely formal entities defined solely by their relation : they are neither psychical engrams nor do they have anything to with behavioristic stimulus and response. The signifiant and the signifié are definitely characterized, not as 'sound' and 'thought' existing in the real world, but as patterns (or forms) imposed by each language upon those amorphous 'substances' of reality.

2.6 A mere identification of Saussurean signifiant with 'expression–form' and of signfié with 'content–form', however, does not fully do justice to the glossematic formalism, which goes much further. Two entities, expression and content, on the last analysis, turn out to be merely two 'solidary' (=interdependent, i. e. 'presupposing' each other) functives of the sign–function; there is 'no justification for calling one, and not the other expression (or content) ; they are each defined only oppositively and relatively, as mutualy opposed functives of one and the same function' (Hjelmslev 60). Here we find a formal approach pushed to its logical conclusion : the contact with reality is completely cut off. The entities of linguistic description seem to formalists to be 'of algebraic nature and to have no natural designation';

they would 'recieve a motivated designation only on being confronted with the subsance' (ibid, 105, 79).

2.7 It is perhaps natural that practising linguists, with their immediate concern with actual analysis, should 'tend to be impatient with such a strictly formal approach, feeling that much of the discussion is too far removed from real language systems and actual field data' (Gleason 213). Of course it will be rather superficial to be shocked simply at a mathematical formulation given to linguistic statements; an application of a purely formal metalanguage is perhaps no more closed to the description of a natural language than most abstract mathematical equations are barred from the explanation of physical phenomena. But we believe, with E. Hauge, that a linguist must be no mere student of formal linguistic relationships, and that 'the actual tying up of linguistic relationships to concrete sense data is still an essential part of our science' (RL 363). What matters is, then, not the validity or invalidity of the abstractness of a theory, but rather its actual applicability to linguistic descriptions, the guiding principle in its formulation being what Hjelmslev calls 'the empirical principle' which dictates that the description shall be self-consistent, exhaustive, and as simple as possible' (Hjelmslev 11 ; Uldall 20).

2.8 In a semantics which does not cut itself off from contact with reality, the most general question may arise as to the relation between the linguistic sign and the referent. The 'selective' relation (= a one-sided dependence) which Hjelmslev asserts to hold between substance and linguistic form, the former presupposing the latter but not conversely (Hjelmslev 106), may be regarded as a glossematic answer to the question ; we are also reminded of the Sapir-Whorf's famous hypothesis that we dissect nature along lines laid down by our native language, and that we cannot operate outside the limits set by the language.

Apart from such a somewhat metaphysical hypothesis, however, we hasten to consider some possible contributions which a formal approach will make to semantic analysis.

2.9 As professed formalists, American structuralists used to (or still does) confine themselves to the 'heuristic' uses of meaning, as criteria for the determination of phonemes and morphemes ; to them meaning proper (i.e. what they call 'microlinguistic meaning') means 'differential meaning', which can be ascertained by observing whether substitution of one item for the other produces identy or difference in a larger structure (cf. Hill 409–16). Recognition of differential meaning is perhaps a first necessary step in the formal approach.

Glossematicians', parallel and symmetrical analysis of expression-form and content-form will make possible a formal study of content which is in principle analogous to that of expression i. e. phonemics; an analysis of sign-contents into content-figuræ, as proposed by Hjelm-slev (46, 70-71), may be expected, just as a corresponding analysis of sign-expressions into expression-figuræ has been made in phonemics ; (Sørensen is doubtful whether there is any such things as content-figuræ, and proposes to replace them by the notion 'semantic primitives' 44-45, cf. section 3 below); at any rate glosssematicians try to reduce sign-contents into constituent entities through their 'commutation test', an equivalent of American 'substitution', which builds on the interplay between expression-form and content-form. Everywhere by many

scholars of different schools attempts have been made to find basic units after the analogy of phonemes ; e.g. Bloomfield's 'sememe' as the meaning of a morpheme ; Nakajima's 'sememe' as the unit of 'inner linguistic form' ; Hattori's 'sememe' ; or glossematic 'plereme'.

A formalistic conception of the synchronous system of the language as a network of differences, oppositions and values, which is again of Saussurean origin that finds its expression in the famous image of the game of chess, may finally lead to a theory of semantic field, as proposed by J.Trier and his followers, 'a closely knit and articulated lexical sphere, where the significance of each unit was determined by its neighbours, with their semantic areas reciprocally limiting one another and dividing up and convering the whole sphere between them' (Ullmann 157), though Trier himself criticizes the formal definition of meaning (as the relation between name and sense) for the reason that it is inaccessible to the Saussurean synchronous systems (cf. Ullmann 160).

3 **terminological interlude** — semantically fundamental notions — Leaving now a purely formal approach to meaning which alone is perhaps within the framework of micrlinguistics, we are to treat the wider problems of meaning which is 'ultimately correspondence between a linguistic item and an item in the nonsymbolic world, or between a linguistic structure of many items and a similar structure in the nonsymbolic world' (Hill 410). Again, Hockett, in his 'design of language', regards semantics as a peripheral subsystem which impinges, in one direction, on the directly observable physical and social world in which people live, and, in the other direction, on the grammatical system of the language' (Hockett 138). Here perhaps the most fundamental is an analysis of the relation between the linguistic sign and its 'referent'. Before entering the world of the referent, however, it is necessary to clarify some semantically fundamental notions hitherto used rather vaguely.

3.1 By the term 'linguistic sign' (=L-sign, or more simply 'sign' as our sole concern is with the 'linguistic' sign) is to be understood a 'functional (or relation) field' i.e. a function (or relation) together with its functives (or terminals) (cf.Uldall 38). Let us call the relation in question 'meaning' (=M) ; the two terminals entering into the relation M are Saussurean 'signifiant' (=Ullmann's 'name' = glossematic 'expression-form' = (e)) and Saussurean 'signifié' (= Ullmann's 'sense' = glossematic 'content-form' = (c)). Then our L-sign S can be shown by a formula; S= (c) M (e), which indicates that a L-sign, S, is a relation field established by two terminals, (e) and (c), centering round the relation called meaning, M.

Our signs are eihter 'simplex' signs that cannot be divided into signs, or 'complex' signs that can be divisible into (smaller) signs : Hjelmslev further analyses sinplex signs into constituent 'figuræ'; but it may be doubted that an analysis of sign-contents into content figurae is logically possible (cf. 2.9 above) ; any way, our signs include various linguistic units from utterances down to morphems or phonemes.

3.2 Beside the intra-linguistic relation field centering round M, the other semantically fundamental relation is the relation between a L-sign and an extra-linguistic entity. Let us call the extra-linguistic entity the 'referent' (=(r)). Here it is better to relate (r) with the sign S which is a relation field, rather than to relate (r) with the content (c) which is one of the

terminals of S. Let us call the relation in question 'denotation' (=D); D together with its terminals, (r) and (S), establishes a relation field; let us tentatively call the relation field 'reference' (=R). Then R can be shown by a formula: R = (r) D (S) ; (or, because S = (c) M (e), R = (r) D (cMe)), which formula shows that the refrence R is a relation field established by the terminal, (r) and (S), which is in its turn a relation field called a L-sign, centering round the relation called denotation D.

Sometimes the relation D holds between a sign and another intralinguistic sign ; for example, the sign 'adjective' denotes a class of signs ('red', 'good', etc.); it is a sign of signs; let such a sign be called a 'metasign'. Thus our referents (r) are extended to include both extra-linguistic entities and L-signs. Again there are cases where a sign (e.g. 'unicorn') denotes neither an extra-liguistic entity nor a L-sign; that is, such a sign establishes no relation field involving D ; which, however, does not mean that the sign has no meaning: the relation field is clearly established by (e)=/júːnikɔːn/ and (c)=(a mythical animal like a horse but having a single long horn in the middle of its forehead).

3.3 The above considerations lead us to introduce the notion of 'level' ; (we are here mainly following Sørensen (17-18)). For our purpose to describe the natural language E, it is enough to distinguish three levels:

1) entities of level zero = extra-linguistic entities
2) signs of level 1   = L-signs ('object-signs')
3) signs of level 2   = 'metasigns' which denotes signs of level 1.

By using the notion of level, we can formulate three modes of reference discussed above:
$R_0 = (r_0)$ D (s_1); $R_1 = (r_1)$ D (s_1); $R_2 = (r_1)$ D (s_2),
where r_0 = a referent of level zero = an extra-linguistic entity; r_1 = a referent of level 1 = a L-sign (object-sign); s_1 = a sign of level 1; s_2 = a sign of level 2 (metasign); for example, $R_0 = (r_0)$ D (s_1) means that there is a reference R_0 where a L-sign s_1 denotes an extra-linguistic entity r_0.

3.4 Having clarified some fundamental notions, we now proceed to define 'semantic descriptions'. Semantic descriptions, as they are commonly practiced, consist of two main divisions;

1) a formal semantic-description; 2) a referential semantic-description; (Sørensen regards only our formal description as the semantic description, excluding the referential description from the field of semantics.) A formal description of a L-sign (of level 1) is a description of the sign on the basis of another L-sign (of level 1); here we remain confined whthin the level of object-signs: '$R_1 = (r_1)$ D (s_1)' is thus seen to be a formulation in a formal semantic-description.

By a referential semantic-description of a L-sign (of level 1), we understand a description of the sign on the basis of an entity of level zero ; here we are concerned with the relation between the linguistic world and the extra-linguistic reality; '$R_0 = (r_0)$ D (s_1)' is a formulation in a referential semantic-description. (By the way, if, following Sørensen, by 'a grammatical description' we understand a description of a sign of level 1 on the basis of a sign of level 2 (i.e. a metasign), '$R_2 = (r_1)$ D (s_2)' is a formulation in a grammatical description).

3.5 The formalistic theories we have examined above can be regarded as belonging to 'formal semantic–descriptions'. A schematic procedure in the formal semantic–description may be summed up in this way (cf. Sørensen 32–55); we reduce the vocabulary V of E to the smallest set of signs from which all the signs of V can be derived. These smallest set of signs (or, figuræ Hjelmslev would call them) may be said to be semantically primitive signs (or, more simply, semantic primitives). Having set up the semantic primitives of E, our task is then to derive infinite numbers of other signs from the finite numbers of the primitives: the former (let them be called 'semantic derivatives') can be registered as the definienda of the primitives; the primitives are the definiens of the derivatives.

3.6 We cannot, however, give a formal semantic–description of the primitives; we come to know the meaning of a primitive only through a 'referential semantic–description', i.e. through contact with reality. But all the primitives cannot be described referentially: for we cannot formulate a referential description without using some of our primitives; logical words of conjunctions, some of Fries's 'function words', or such words as 'I' 'now' or 'entity' seem to belong to these referentially indescribable primitives. Except for such fundamental primitives, referential descriptions can be given of usual primitives, which in turn enter as definiens into formal semantic–descriptions of the non–primitive (i.e. derivative) signs.

4 referential semantics Thus our attention should next be focussed upon 'referential semantic–descriptions' of L–signs belonging to E. And here we can regard Gardiner's, Firth's, and Ziff's, semantic theories as mainly in this direction.

4.1 After a detailed analysis of an act of speech, Gardiner arrives at a working definition of the 'thing–meant': 'The thing–meant by any utterance is whatever the speaker has intended to be understood from it by the listener' (Gardiner 82). Now, 'words are clues, and in every case the thing–meant has to be discovered in the situation by the listener's alert and active intelligence'; 'the thing–meant is always outside the words, not within them. It is in the situation, but not within the utterance' (50). A recognition of words (or, in our terminology, signs) as mere clues to the thing–meant, which he repeatedly emphasizes, is significant in two points: firstly it can be interpreted as a plain statement of a more high–sounding declaration such as made by M. Joos that the world of linguistics is discontinuous or discrete as against that of reality which is continuous (RL 349); in other words, we cannot have any means of precisely describing a continuous referent of level zero (=thing–meant), so we must be contented with a discontinuous sign as a 'clue' to it. Secondly it urges the importance of the study of a sign within its 'context of situation', which constitutes the cardinal principle of the so–called London school.

4.2 In the school, 'meaning is to be regarded as a complex of contextual relations' (Firth 19) and every branch (such as grammar or semantics) handles its own components of the complex in its appropriate context. These contexts ultimately lead to the most general context called 'the context of culture', which may be regarded as a mtealinguistic world (as Trager defines it) comprising both sociology and linguistics (or more broadly both the social sciences and the humanities). Their 'spectrum' analysis 'makes sure of the data at the sociological level, before

breaking down the total meaningful intention into the semantic, grammatical, lexical, phonological and phonetic components each dealt with at the suitable level of abstraction employing specialized techniques' (Firth 171).

As a more concrete illustration, Firth regards a context of situation as bringing into relation the following categories: A. The relevant features of participants: persons, personalities, (i. The verbal action of the participants; ii. The non-verbal action of the participants); B. The relevant objects; C. The effect of the verbal action. (Firth 182)

4.3 Firth's context theory may be regarded as a significant semantic approach to actual speech acts, that is, on the plane of 'parole' rather than that of 'langue'. In this connexion, Ziff's semantic analysis may also be considered to be a remarkable attempt by a structurally oriented analyst to correlate linguistic signs with their referents, i. e. to give a referential semantic-description in the sense defined above. The remaining pages of our introductory survey, then, will be chiefly concerned with this perhaps first comprehensive theory of a referential semantics which is in accordance with main currents in American structual linguistics. As we cannot afford here to give a critical account of Ziff's whole theory, our attention will be exclusively paid to the problems of the relation between L-signs and their referents, i. e. the relation field R centering round the relation D(enotation) (cf. section 3.2 above), so far as they enable us to determine their meaning, although Ziff's interest may ultimately be of philosophical nature.

4.4 Ziff's theory may be taken to be a step forward towards the ultimate goal of structural linguists; for structuralists seem so far to have 'ruled their meaning out of their analysis precisely because it is meaning in which they are ultimately interested; in order to make the study of meaning as effective as possible, they must first have an objective understanding of the structure of E' (Gleason 94); their attempt is 'directed to lay some of the foundation on which a study of English meanings might be built' (Hill 409); or again, Chomsky (108) asserts that one result of the formal study of grammatical structure is that a syntactic framework is brought to light which can support semantic analysis. At any rate, Ziff's semantic analysis begins just where traditional structuristic descriptions are completed; a formal description, overtly without an appeal to semantic criteria, is assumed to have been given in terms of phrase-structure (i. e. using IC analysis) to a kernel of basic sentences, from which all other sentences being derived by transformation (Chomsky 107); morphological segmentation has of course been completed on the basis of distribution.

4.5 Ziff introduces the notion of 'semantic regularity'; he is 'inclined to suppose that meaning is essentially a matter of nonsyntactic semantic regularities, and that an element's having meanieng in the language can be explicated primarily in terms of the nonsyntactic semantic regularities to be found pertaining to the element' (42). Here so-called strucural meanings seem to be excluded; a purely functional word such as 'to' in the utterance 'I want to go through Istanbul' is regarded as lackig meaning (while 'through' in the same utterance have meaning) because 'to' is uniquely determined by the structure of the utterance. Regularities presuppose the freedom of choice; if the options for contrasts are closed, regularities cannot be discovered. A

similar view of meaning can be found in Hill, when he defines meaning as partial predicability (Hill 413); anything which is totally predictable is incapable of distinguishing alternatives and is therefore redundant or meaningless.

Some affinity with the context theory may be discerned when we find Ziff declaring that 'semantic regularities are regularities of some sort to be found in connection with the corpus pertaining to both linguistic elements and other things, e.g.[to utterances and situations, or to phrases ad persons, as well as to utterances and utterances' (27). His (nonsyntactic) semantic regularity, then, can be interpreted as an empirically certifiable association between a L-sign and a condition (i.e. an entity of level zero) which generally obtains in stuation where the signs occurs without oddity (or, to use his terminology, without 'deviation').

4.6 Ziff's procedure of finding semantic regularties pertaining to m_i (= a morphological sign of E), consists of two distinct but inseparable stages: we must first find regularities pertaining to the whole ufterances in which m_i occurs, and then we must attribute something about these regularities to the occurrences of m_i in the utterances (44-5).

The first stage can be formulated in a metalinguistic form: if an utterance u_i is uttered, then such and such (conditions hold). Here Ziff tries to correlate (or 'pair') utterances with their corresponding conditions: a pairing of an utterance (i.e. a sign of level 1, say, 'Hello!') with a condition (of level zero, 'one person is greeting one or more others') (46). And, in order to avoid trivial or irrelevant pairings, many devices must be used; among them are 'the principle of information' (49) and 'the principle of conventionality' (57). A more serious difficulty, however, must be faced when we are to go beyond empirically observable correlations between utterances and conditions; here the guiding principle is what he calls' the principle of composition' (61-66). It is this principle, the author maintains, that enables us to pair some utterances ('The cat is on the mat.'), not with apparently ready conditions ('A philosophical discussion is under way.'), but with appropriate conditions ('Some feline is on the mat.') as a 'projection' from observed regularities; the projections on the principle of composition seem to be based on an assumption that a structural similarity between two utterances reflects the similarity between corresponding conditions.

At the second stage an attempt is made to determine the meaning of m_i by attributing something about the conditions paired with utterances to the occurrence of m_i. Regarding m_i having meaning in E as a function of some nonsyntactic semantic features of its 'distributive' and' contrastive' sets, Ziff pushes his analysis by introducing a seiries of new notations:

d_i (m_i) = utterances of the 'distributive' set for m_i, i.e. d_i ( ) can be regarded as representing the context of m_i.
d_i (m_i) / m_j = utterances of the 'contrastive' sets for m_i, m_i being replaced by m_j in the context d_i ( ).
$\{d_i$ $(m_i)\}$ = the set of conditions paired with the utterances d_i (m_i)
  D_{ij} = the relevant difference between the set of conditions associated with d_i (m_i) and that associated d_i (mi) / m_j
    = the logical product of $\{d_i$ $(m_i)\}$ and the complement of $\{d_i$ (m_i) / $m_j\}$
  C_{ij} = the proper subset of D_{ij} such that C_{ij} cannot readily be made out to be a function of phonetic or orthographic or structural factors.
  Cm_i = the set of the sets C_{11} ...... C_{nn}

With these notions we can sum up roughly Ziff's procedure of determining m_i : from the entire distributive and contrastive sets for m_i, only those utterances are selected in connection with which state regularities could be found; then the relevant difference D_{ij} is sought between $\{d_i\ (m_i)\}$ and $\{d_i\ (m_i)\ /\ m_j\}$; then from D_{ij} we select only the subset of relevant differences such that the nonsytactic semantic differences cannot readily be made out to be a funcion of phonetic or orthographic or structural factors; thus we get at C_{ij}, hence Cm_i as the set of the sets C_{11} ······ C_{nn}.

In the light of this analysis, Ziff concludes that m_i has meaning if and only if it has a nonnull set of conditions C_{ij} ······ C_{mn} associated with it in various utterances of its distributive set (= if and only if Cm_i has nonnull members) (171); the meaning pertaining to a morphological sign m_i of E is thus given in terms of the releveant differences between the conditions associated with the utterances of the distributive and contrastive sets.

4. 7 Ziff's semantic theory, here very roughly sketched, may best be thought of as 'an informal introduction to a rigorous semantic theory' as he himself puts it (198). Indeed, this is a very rough outline of alarmingly complicated procedure of referential semantics; and it is obvious that further refinement and elaboration are necessary for many 'principles' of his. Nevertheless, we are glad to find a comprehensive attempt at last made by a theorist of a structuralistic orientation, however arduous and bold a project for semantic methodology may appear; subsequent researches will be expected in' a detailed specification of the (semantic) theory, viz. its primitive terms, relations, and operations' (198); or this synchronic semantic theory will be supplemented by diachronic studies. And with a new hope for semantic analysis our introductory survey will be closed. (July 1962)

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