

An Objective Psychology of Grammar

J. R. KANTOR

PROFESSOR OF PSYCHOLOGY, INDIANA UNIVERSITY



1936

INDIANA UNIVERSITY
Bloomington, Indiana

INDIANA UNIVERSITY PUBLICATIONS
SCIENCE SERIES

Indiana University, Bloomington, Indiana

Publication Committee

FERNANDUS PAYNE, Chairman
HENRY H. CARTER
EDGAR R. CUMINGS
HAROLD T. DAVIS
FORD P. HALL
ALBERT L. KOHLMEIER
ROBERT E. LYONS

Copyright, 1936

By J. R. KANTOR

The Indiana University Publications, Science Series,
was founded in 1935 for the publication of occasional scientific
papers and monographs by the faculty and students.

**An
Objective Psychology of
Grammar**

PREFACE

GRAMMAR, at least in part, is psychological. Yet no satisfactory study of grammatical phenomena has been made from the psychological point of view. There are, of course, a number of psychological treatises on linguistic phenomena, but they constitute neither a definite body of psychological facts and principles nor a satisfactory contribution to the clarification of linguistic problems.

Traditional psychological studies of language may be divided into two types. The first offers hypothetical physiological explanations of how speech goes on. The writers assume that speech is an expression of psychic states. Accordingly, they undertake to describe such tissues as the muscular and neural and such organs as the brain, together with their functions, as they presumably operate when ideas are expressed. Briefly, they expose the workings of the nervous system and muscles when persons utter words.

The second type of psychological speech study consists of psychologizing linguistic phenomena. For the most part, this means offering *psychological* reasons for making certain sounds, using certain kinds of syntax, and for changes in speech. Since traditional psychological excursions into linguistic studies offer no fundamental analysis of the actual nature of speech phenomena, it is no mystery why linguists pass psychology by as an auxiliary science.

Yet I cannot escape the conviction that an adequate psychology of speech might be of service in interpreting grammatical problems. Why, then, has psychology not been able to qualify as a coöperative discipline in grammatical studies? It is one of the theses of the present work that a psychology of grammar has had to wait upon the development of an objective psychology. As the following chapters will reveal, traditional psychology, which is subjectivistic, is impotent to handle language behavior. In the last few decades, however, psychology has made such strides in establishing itself as an objective discipline that now perhaps it can at last contribute to the understanding of speech phenomena.

The present work constitutes an attempt to study grammatical phenomena from an objective psychological point of view. It is motivated by the question: Can recent psychological developments contribute to the analysis of grammatical problems? As a working method I compare the relative effectiveness of psychological and other types of grammar for describing and interpreting speech phenomena. Two purposes are thus served: first, the analysis of the psychological character of speech considered from the angle of grammatical minutiae; second, the application of the results to grammatical problems. I should like to point out particularly that whenever conventional grammar is criticized it is only in order to pave the way for constructive suggestions and not to indicate mere dissatisfaction.

Psychological grammar is in no wise a competitor for the grammatical field. In many ways it is a distinct discipline with problems different from those of ordinary grammar. At best, psychological grammar is only one type among several others, each concerned with different phases of language. Certainly, psychological grammar can deal most efficiently with the grammar of speech and less well, if at all, with the historical or comparative facts of language. Nevertheless, since it is probable that all phases of language have a unifying basis in human behavior—psychological adjustments—it is not without the range of possibility that psychological grammar may aid in the solution of certain general linguistic and grammatical problems.

I have leaned rather heavily upon certain linguists, both for illustrations of grammatical difficulties and for patterns of utterance. This procedure has been followed entirely as a matter of expediency. In no sense should the selection of an example of an erroneous grammatical idea be regarded as characterizing the quoted writer's entire work, nor, on the other hand, as marking the peculiarity of a particular scholar. In every case I have attempted to find typical illustrations, which, it is hoped, are not unfairly chosen in order to make a case. Whenever illustrative sentences are used, it is understood, of course, that they are to be regarded as examples of behavior adjustments and not as text materials. For this reason I have not indicated in every instance the sources of such sentences. I am, however, none the less grateful to various writers for the help thus received.

Finally, I must beg the indulgence of the reader for introducing what may sometimes appear as elementary or even trivial discussion. My excuse is that I have had to steer an uncertain course between linguists who are not familiar with recent psychological developments and psychologists who have not occupied themselves to any extent with grammatical studies.

I want to acknowledge my deep indebtedness to H. R. Kantor for invaluable assistance throughout the entire process of developing this book. To President Bryan and the Board of Trustees of Indiana University I am grateful for making available a means of publication, and to the chairman and members of the Publication Committee for giving the present volume a place in the new Science Series of the Indiana University Publications. I likewise take the opportunity here of expressing my appreciation to Dean Fernandus Payne of the Graduate School for his interest in this work, as well as his unflagging efforts in generally furthering research. Thanks are due also to Miss Ivy Chamness and the staff of the Indiana University Publications Office, as well as the printers, for their help in seeing the book through the press, in part while I was in Europe on leave of absence from the University.

J. R. K.

April, 1935.

CONTENTS

PREFACE v

PART I

I. WHY AN OBJECTIVE PSYCHOLOGY OF GRAMMAR?..... 3
Grammar as Science. The Babel of Tongues. Why Is There No Science of Grammar: the influence of logic upon grammar, the influence of classical philology, the bias of a particular language, confusion of description and described. The Disservice of Mentalistic Psychology: the case of Wegener, the case of Gardiner, the case of Malinowski. How Actions Are Made into Things. Grammar an Autonomous Science. Grammar Not Exclusively Psychological.

II. LANGUAGE ADJUSTMENTS AND LANGUAGE THINGS..... 17
Four Types of Linguistic Phenomena. Language Genuine and Spurious: characters, signs, and symbols; linguistic tools and instruments; linguistic styles; literature; word constructions; verbal formulae; verbal records; liturgical speech. Living and Dead Language: linguistic fossils, speech products, recollected speech. Nascent Language: artificial language, revived language, vitalized aphorisms. Forms of Linguistic Adjustment: conversation, discourse and oration, conventional verbal language, prayer, letter writing, pamphleteering. Comparison of Living Language Types. Speech and Language.

III. PSYCHOLOGICAL AND CONVENTIONAL GRAMMAR..... 31
Psychological and Non-Psychological Grammar Compared. Descriptive Grammar: language and nature, reference and description, affective and effective language. Comparative Grammar: reference and form, custom and logic, consonance and dissonance. Normative Grammar: beauty and grace in speech, linguistic etiquette. Historical Grammar: the problem of linguistic change, the problem of linguistic origins. Explanatory Grammar: explanation in conventional grammar, explanation in psychological grammar. Application of the Distinction between Grammars.

IV. THE LINGUIST'S OPPOSITION TO PSYCHOLOGY..... 46
Early Linguistic Opposition to Psychology. Scientific Psychology Enters the Linguistic Field. Paul versus Steinthal. Wundt versus the Herbartians. Delbrück Criticizes Wundt. Other Linguists Reject Psychology. Hocart against Stout. The Psycholinguistic Situation Analyzed.

- V. **PSYCHOLOGICAL MISCONCEPTIONS IN LINGUISTICS**..... 87
 Mentalistic Psychology Gives Rise to Two Linguistic Misconceptions. The Translation or Expression Theory. The Symbolic Theory of Language. Symbolism a Relationship of Fixed Terms. Language Adjustments Autonomous. Static Symbols and Dynamic Language. Speech as Stimulus. Sources of Symbolic Conception: confusion of behavior and things, mentalizing events. Language Adjustments and Purpose: individual purposiveness, purpose as social process. Expressive Psychology and Symbolism.
- VI. **SPEECH AS A PSYCHOLOGICAL PHENOMENON**..... 71
 Organismic or Interactional Psychology: behavior segments are built up, the reactional biography, personality equipment, overt and implicit behavior. No Mind-Body Distinction in Organismic Psychology. Speech Interactions Are Bistimulational. The Linguistic Behavior Segment: referential reactions, the auxiliary stimulus, the adjustment stimulus. Reaction Systems and Reaction Patterns. Interactional Settings. Speech as Indirect Adjustment: preceding speech, accompanying speech, following speech, substitute speech. Mediate and Mere Referential Language. Morphological and Functional Language. Expressive and Communicative Language. Referor and Referee Language. Initiating Speech. Varieties of Linguistic Behavior Situations. Comparison of Speech and Symbol Behavior. Speech and Symbols in Same Situation. Alternation of Speech and Symbol Behavior.
- VII. **THE PSYCHOLOGY OF GRAMMAR**..... 84
 Linguistic Adaptation and Linguistic Patterning. Individual and Social Linguistic Patterning: individual speech patterning, social speech patterning. Psychological Grammar Concerned with Patterning. Social Institutions. The Field of Social Psychology. General Linguistic Institutions: vocabulary, general language pattern, expression technique, general language institutions. Special Language Institutions: number, word-order, gender, taboos. Social Psychological Influences upon Speech: behavior acquisition, community of understanding. The Universality of Psychological Grammar. The Psychological Interpretation of Grammar.

PART II

- VIII. **THE FOURFOLD ORGANIZATION OF GRAMMAR**..... 99
 Symbol-Expression Basis of Grammatical Departments. The Origin and Development of Symbol-Expression Conceptions: Aristotle and the Greeks, Post-Aristotelian humanism, the development of psychological dualism, linguistics in dualistic thought. Behaviorism and Language. Symbol and Thought in Grammatical History. Some Difficulties of Compartmental Grammar. Modifications in Grammatical Arrangement: Noreen, Porzig. Plan of Our Grammatical Studies.

IX. SEMANTICS 113
 Three Aspects of Conventional Semantics: level of word usage, level of definition, level of description. Conventional Semantics Belongs to Thing Language. Conventional Semantics and Psychological Grammar: speaking and its interpretation, understanding misunderstood. Speech and Speech Situations. Psychology of Meaning: traditional meaning conceptions, behavioristic meaning conception, organismic meaning. Interrelation of Meaning and Speech Behavior. Symbols as Meaning Stimuli. Semantics Studies Vocabulary Reference Patterns. Semantic Change. Matter, Form, Function, and Meaning.

X. SYNTAX 127
 The Logical Domination of Syntax. Psychological Syntax. Four Aspects of Psychological Syntax. The Contribution of the Four Aspects: the adjustment stimulus, the auxiliary stimulus, speaker's response configuration, linguistic interactional setting. The Problem of Syntactic Units: expression motive, symbol motive, hearer motive, other motives. The Psychological Sentence. Sentences as Speech Patterning. Primacy of Sentences. Sentences versus Propositions. Subject and Object. Grammatical Ranking: word ranking, clause ranking. The Syntax of the Hearer. The Copula Problem. The Finite Verb. The Conception of Ellipsis. Types of Utterances.

XI. MORPHOLOGY 147
 Morphology as Word Architecture. Sapir's Word Study. Bloomfield's Word Study. Lexicology and Grammar. What Is a Word? Syllables as Linguistic Units. Morphology Creates Linguistic Artificialities. The Reality of Words. How Words Are Derived: text analysis, naming, behavior analysis. Morphology as Cultural Speech-Style. Applications of Speech-Style Conception: original language study, the comparison of languages, interpretation of linguistic evolution.

XII. PHONOLOGY 159
 Sounds as the Materials of Speech. Phonetic Abstractionism. Phonology and Phonetics. Phonology and Psychology. Phonology as Sound Interaction Patterns. Psychological and Grammatical Phonetics. Vocal Interactions and Psychic Phonology. Vocal Interactions and Pattern Symbolism. The Psychology of Sound Symbolism: natural symbolism, imitative symbolism, natural fitness. The Psychology of Sound Changes. Experimental Phonetics.

PART III

XIII. THE PROBLEM OF SPEECH PARTS..... 181
 Logical Categories versus Psychological Adjustments. The Linguistic Emendation of the Speech-Parts Conception. The Psychological Emendation of the Speech-Parts Conception: simple reference, complex reference. Speech Parts Primarily Related

to Adjustment Stimulus: substantives, adjectives, verbs, adverbs, prepositions. Speech Parts and the Auxiliary Stimulus. Speech Parts and the Speaker: conjunctions. Linguistic Circumstances: interjections. The Five Factors Interrelated: pronouns. How Many Speech Parts: numerals, articles, reply speech, the copula, other speech parts. Speech Parts and Language Systems. Applications of the Psychological Speech-Parts Conception: classification, compound speech parts, dialectal speech parts. Speech Parts and Syntax.

- XIV. PERSON 198
 Grammarians Agree upon Person. The Factual Basis for Person Agreement. The Grammarian Retreats. Symbols Again. Anomalies of Person. The Fallacy of Selected Examples. The Ordinary Grammatical Solution. Jespersen's Negative Third Person. The Psychology of Person. Can Stimulus Functions Always Be Localized? Event Analysis and Word Classification.
- XV. GENDER 207
 Linguistic Progress in Gender. A Survey of Gender Phenomena: no gender, two genders, three genders, many genders. Anomalies of Gender. Gender as a Classificatory Phenomenon. Types of Gender Theories: cultural ascription theory, classifying instinct theory, morphological analogy theory, phonetic congruence theory. Gender as Phenomenon of Social Patterning. The Origin of Cultural Institutions. Actual Sex References. Individuality of Sex References. Conventional Common-Sex Words. Gender Illustrates Non-Symbolic Character of Language.
- XVI. CASE 218
 The Problem of Case. The Influence of Classical Grammar. The Thing-Motive in Case Study. Symbolic and Expressive Influences on Case. The Philosophic Motive. Theories of Case: Aristotle, Noreen, Wundt, Paul, Sonnenschein, Blake. Case as Phenomena of Linguistic Behavior. Word-Thing and Psychological Case Compared. How Many Cases? Case and Speech Parts. Case and Gender. Case and Preposition Groups. English and Finnish.
- XVII. TENSE 236
 Tense as the Word-Symbol Counterpart of Abstract Time: Madvig's tense scheme, Jespersen's tense scheme. Words and Speech. Tense and Time. Incongruities in Tense Description. Timeless Tenses. Time without Tense. Temporal Speech Patterns and Time Symbols. Tense, *Aktionsart*, and Aspect. The Psychology of Tense.
- XVIII. NUMBER 250
 The Expressive Motive in Grammatical Number. The Magic of Number. Semantic and Real Number. Words, Words, Words. Number Categories without Number: one and many, the plural

of approximation, common number, mass words. Number without Number Words: the ordinary plural, collectives. Number Categories and Number References. Grammatical Number as Speech Patterns: the dual, institutional changes, Chinese, special usages. Number Utterances with Number. The Psychology of Number.

XIX. VOICE	261
Active and Passive. Why the Grammarian Minimizes Voice: no definite subject or object, interference with subject and object relation, reversal of subject and object, absence of object, two objects, no subject, middle voice. Voice and Speech Parts. Psychological Background of Voice Phenomena: A. gross analysis of adjustment stimulus, B. further analysis of adjustment stimulus. Voice and Adjustment Stimulus Types: A. psychological interactions as stimuli, B. non-psychological actions as stimuli. Voice, Case, and Person. Language Pattern and Voice. Language Evolution and Voice. Voice and Translation.	
XX. MOOD	278
Confusion of Mood Grammar. Historical Background of Mood Study. The Definition of Moods. The Criteria of Moods: form or symbolic criterion, pure expression criterion, meaning or expressive criterion, purpose criterion. How Many Moods? Thought and Reality. Mood and Tense. The Existence of Moods. Moods as Types of Utterances.	
XXI. DIRECT AND INDIRECT SPEECH.....	291
Secondary Speech. Direct and Indirect Distinction Breaks Down. No Secondary Speech. Direct Speech. Indirect Speech. Speech as Spoken of: exact quotation, casual quotation, answering speech, references to reference manner. Secondary Speech and Grammatical Categories.	
XXII. NEGATION	300
Negation as a Summary of Grammar. The Negative as a Word. The Negative as Symbol. Negation as Expression. Negation as a Propositional Element. The Logic of Grammatical Negation. Negation as a Psychological Phenomenon: non-existent things, non-existent characteristics, non-occurring events, negative relations, negative behavior, negative speech references. Language Adjustments, Symbols, and Negative Facts. Classes of Negative References. Negation and comparison: positive and negative, intermediates, relatives, comparatives.	
SELECTED REFERENCES.....	315
SUBJECT INDEX.....	329
NAME INDEX.....	341

ABBREVIATIONS
OF
BOOKS AND JOURNALS

- AGS—Marty, *Untersuchungen zur Grundlegung der Allgemeinen Grammatik und Sprachphilosophie*, I, (Halle), Niemeyer, 1908.
- AP—Stout, *Analytic Psychology*, 2 vols., (London), Sonnenschein, 1896.
- AI—Boas, *Handbook of American Indian Languages*, (Washington), *Bur. Am. Eth., Bull.*, 40, pt. 1, 1911, pt. 2, 1922.
- BKS—Mauthner, *Beiträge zu einer Kritik der Sprache*, (Stuttgart-Berlin), Cotta, (3), 1901-2.
- BSL—*Bulletin de la Société de Linguistique de Paris*, 1869-.
- BL—Bloomfield, *Language*, (N.Y.), Holt, 1933.
- CEG—Curme, *College English Grammar*, (Richmond, Va.), Johnson, 1925.
- CLG—De Saussure, *Cours de Linguistique Générale*, (Paris), Payot, 1916.
- CP—Sweet, *Collected Papers*, (Oxford), Clarendon Press, 1913.
- EGG—McKerrow, *English Grammar and Grammars*, in *Essays and Studies by members of the English Association*, (Oxford), Clarendon Press, 1922.
- ELP—Brunot, *L'Enseignement de la Langue Française*, (Paris), Colin, 1901.
- EN—Dewey, *Experience and Nature*, (Chicago), Open Court, 1925.
- ES—Havers, *Handbuch der Erklärenden Syntax*, (Heidelberg), Winter, 1931.
- FG—Eliot, *A Finnish Grammar*, (Oxford), Clarendon Press, 1890.
- GH—Nyrop, *Grammaire historique de la Langue Française*, 6 vols., (Copenhagen), Gyldendal, 1903-30.
- GS—Benfey, *Geschichte der Sprachwissenschaft*, (München), Cotta, 1869.
- GSF—Delbrück, *Grundfragen der Sprachforschung*, (Strassburg), Trübner, 1901.
- GSL—Gardiner, *The Theory of Speech and Language*, (Oxford), Oxford University Press, 1932.
- HPE—Kruisinga, *Handbook of Present-Day English*, (Utrecht), Kemink, 1925-32.
- IF—*Indogermanische Forschungen*, (Strassburg-Berlin), 1892-.
- JGM—Jespersen, *Grammatical Miscellany*, (Copenhagen), Levin and Munksgaard, 1930.
- JL—Jespersen, *Language*, (N.Y.), Holt, 1922.
- KVG—Brugmann, *Kurze Vergleichende Grammatik der Indogermanischen Sprachen*, (Strassburg), Trübner, 1904.
- KZ—*Zeitschrift für Vergleichende Sprachforschung*, etc., (Berlin), 1852-.
- LC—Sturtevant, *Linguistic Change*, (Chicago), U. of Chicago Press, 1917.
- LGL—Whitney, *Life and Growth of Language*, (N.Y.), Appleton, 1875.

- LHG—Meillet, *Linguistique Historique et Linguistique Générale*, (Paris), Champion, 1921.
- LL—Graff, *Language and Languages*, (N.Y.), Appleton, 1932.
- LSL—Oertel, *Lectures on the Study of Language*, (N.Y.), Scribner, 1901.
- LSS—Madvig, *Lateinische Sprachlehre für Schulen*, (Braunschweig), Vieweg, (3), 1857.
- LU—Trendelenburg, *Logische Untersuchungen*, (Leipzig), Hirzel, (2), 1862.
- LV—Bally, *Le Langage et la Vie*, (Paris), Payot, 1926.
- MCM—Stern, *Meaning and Change of Meaning*, Göteborgs Högskolas Årsskrift, 1931.
- MM—Ogden and Richards, *The Meaning of Meaning*, (N.Y.), Harcourt, Brace, (2), 1927.
- MPL—Pillsbury and Meader, *The Psychology of Language*, (N.Y.), Appleton, 1928.
- NEG—Sweet, *A New English Grammar*, (Oxford), Oxford U. Press, 1892-98.
- PG—Jespersen, *The Philosophy of Grammar*, (N.Y.), Holt, 1924.
- PL—Brunot, *La Pensée et la Langue*, (Paris), Masson, 1922.
- PLP—Van Ginneken, *Principes de Linguistique Psychologique*, (Paris), Rivière, 1907.
- PM—Malinowski, *The Problem of Meaning in Primitive Languages*, (Supplement to Ogden and Richards, *The Meaning of Meaning*), 1923.
- PMLA—Publications Modern Language Association of America, (Menasha), 1886-.
- PP—Kantor, *Principles of Psychology*, (N.Y.), Knopf, 1924-26.
- PS—Paul, *Prinzipien der Sprachgeschichte*, (Halle), Niemeyer, (3), 1898.
- S—Wundt, *Die Sprache*, 2 vols., (Stuttgart), Kröner, (4), 1921.
- SB—Spitzer, *Hugo Schuchard-Brevier*, (Halle), Niemeyer, (2), 1928.
- SFD—De Laguna, *Speech, Its Function and Development*, (New Haven), Yale U. Press, 1927.
- SG—Sonnenschein, *The Soul of Grammar*, (Cambridge), Cambridge U. Press, 1929.
- SL—Sapir, *Language*, (N.Y.), Harcourt, Brace, 1921.
- SNS—Deutschbein, *System des neuenglischen Syntax*, (Leipzig), Quelle u. Meyer, (4), 1931.
- SSP—Kantor, *A Survey of the Science of Psychology*, (Bloomington, Ind.), Principia Press, 1933.
- TZ—Internationale Zeitschrift für Allgemeine Sprachwissenschaft (Called Techmer's Zeitschrift), 1884-.
- UGS—Wegener, *Untersuchungen ueber die Grundfragen des Sprachlebens*, (Halle), Niemeyer, 1885.
- VL—Vendreyes, *Language*, (N.Y.), Knopf, 1925.
- WBS—Noreen-Pollak, *Wissenschaftliche Betrachtung der Sprache*, (Halle), Niemeyer, 1923.
- WS—Ries, *Was ist ein Satz?* (Prag), Taussig u. Taussig, 1931.

PART I

CHAPTER I
WHY AN OBJECTIVE PSYCHOLOGY
OF GRAMMAR?

GRAMMAR AS SCIENCE

A LONG column of decades has marched toward eternity since students of language first sought to make their studies scientific. And yet, the fair-minded observer must agree that hardly a beginning has been made in bringing scientific order into the linguistic chaos.

This is not to overlook the genuine achievements of linguists. We cannot but admire their industry and ingenuity in increasing our knowledge concerning the historical changes in particular languages, in discovering the connections between apparently unrelated tongues, and in working out phonetic, morphologic, and syntactic problems.

But such activities constitute only the groundwork of linguistic science. We assume that every science is interested in the fundamental nature of its particular kind of phenomenon. The student of grammar, we take it, is concerned with the principles of linguistic phenomena—with the description and interpretation of human speech. It is at this point that linguistics shows a dearth of accomplishment. In the matter of fundamental principles the grammarian has arrived at very few stable conclusions.

When a doctor fails to cure his patient, it is often because he has erred in his diagnosis. He treats tuberculosis when the object of his attack is really pernicious anemia. In science what corresponds to a medical diagnosis is the isolation and determination of the essential subject-matter. Has the grammarian made a mistake in determining what are his data? No. He has not failed to appreciate that speech constitutes living activity. Most grammarians can probably agree that, at least in the final analysis, their subject-matter is a type of human conduct—the way persons adapt themselves linguistically to each other, communicate, converse, or otherwise perform speech activity. Here we quote Jespersen (PG 17) :

The essence of language is human activity—activity on the part of one individual to make himself understood by another, and activity on the part of that other to understand what was in the mind of the first. . . . But in former times this was often overlooked, and words and forms were often treated as if they were things or natural objects with an existence of their own.

Unfortunately, it was not only in former times that speech was treated as things. This is still probably the cardinal failing of linguists. Such a procedure, however, is unjustified even when dealing with remote language.

Grammatical science naturally extends further than immediately occurring happenings. Past actions of speakers and the behavior of men of bygone ages or those living in distant and unavailable places are also objects of grammatical interest. Hence the grammarian, no less than other scientists, studies phenomena at second hand. No scientist can observe directly nor experiment upon every event that belongs to his field of investigation. But in no case should the objects of such remote knowledge be regarded as different from those directly observed.

The biologist, for example, is interested in the mastodon and dinosaur, both as particular animal species and as links in a chain of animal evolution. Yet despite the fact that he can know these organisms only as fossils, he must regard them as having once been living specimens.

Similarly, although the grammarian is interested in fossils or remains of speech—in languages brought to him by means of some kind of record—his descriptions must be in line with his observations of the way speech occurs, no matter how remote the sources of his data. We purposely compare the linguist with the biologist, since both inevitably deal with living and developing phenomena.

Assuming that it is the grammarian's work to study linguistic behavior, why is it that at so many points grammars are seriously at odds with the facts of speech? It is hardly unfair to say that grammars entirely mislead us concerning what happens when people speak. Indicative of this situation is the great amount of violent contradiction between linguists. Why should there be so hopeless a lack of agreement concerning the nature of the phenomena with which they deal? Why are language scholars, who have comparatively stable materials to work with over long periods of time, constantly endeavoring to reconstruct their scientific foundations?

THE BABEL OF TONGUES

Of linguistic and grammatical confusion there is no end. Let us say at the outset, however, that we are completely disinterested in terminological problems. Not that precise terminology is unimportant. It may well be, as Jespersen says, that "a precise terminology is a *conditio sine qua non* for understanding grammatical facts" (PG 315). Certain it is that bad terminology leads to errors of description and interpretation. It is therefore fitting that linguists should be expert at naming and verbally defining things.

Nevertheless, it matters little to us that a participle is called a verbal by one grammarian and a verbid by another, or that A's finite verb becomes a real verb for B, and so on through a multitude of differences. Rather, we are concerned with descriptions of facts, assertions concerning the existence or occurrence of certain linguistic happenings.

That grammar is full of difficulties it is not necessary to argue. How many kinds of sentences are there? Some grammarians say three, while others insist upon four. Nor are the three or four the same in the estimation of different writers. And what, by the way, is a sentence? And how do sentences differ from words?

Consider also the violent quarrels over the phenomenon of case. How many English cases are there? Some grammarians say that there are only two; others, that there are as many cases in English as there are in Latin; still others declare that English has even more cases than Latin. Another note of disharmony is the assertion that every language has the same number of cases, but that there are many more than indicated in any grammar. Apparently linguists differ in their understanding of the nature and criteria of case. There is no question that the grammarian's difficulties with case as well as other grammatical phenomena result from a lack of agreement concerning the nature of form, function, meaning, and usage.

How many tenses are there in English, or any other particular language? How many persons? Every grammatical category presents us with a number of questions which indicate a crying need for a more solid establishment of the facts of speech.

Symptomatic of the lack of satisfactory description of what are presumably the basic data of linguistics is the feverish pursuit of a criterion for *parts of speech*. The grammarian runs

into insuperable difficulties when he attempts to define them. What indeed are parts of speech? Although the ordinary answer is that they are the elements or units of which speech is constituted, the grammarian is unable to stipulate the nature of these units. Unfortunately he lacks a single, adequate criterion to distinguish between one speech part and another. When is a noun a noun and when is it a verb or an adjective?

Many criteria are employed to answer this question. When a fixed morphic standard is available, it is, of course, seized upon as a basis for the descriptive procedure. Form is decidedly acceptable when it is suggested at all. If it is not, function is called into play. Not always, however, is function the same thing. Sometimes it means merely a positional relationship among words in a sentence, while at other times it amounts to a presumed modification of one word by another. A further kind of functional criterion rests on the assumption that certain parts of speech (conjunctions) are not basic elements, but rather couplers joining segments of speech to make a whole, or connecting different speeches or sentences. So far, then, there are four criteria by which to distinguish *parts of speech*. When none of these is satisfactory, another straw is reached for—namely, the meaning of the word or what the word presumably stands for. This is a fifth criterion, and the writer is quite sure that the list¹ is not exhausted.

Such an absence of satisfactory descriptive technique bespeaks a lack of scientific foundations. Certainly we do not find here a logical basis for organizing facts. It is small wonder, then, that although for many linguists *parts of speech* constitute a central feature of language study, others make the whole conception the target for the most virulent intellectual attacks, especially Brunot (PL and ELP).

Although no grammarian who approaches the speech parts problem scientifically is unaware of the situation we have been describing, it may not be amiss to illustrate the point. We quote Sweet:

Practical teachers, who generally confine themselves to one book and one method, are often hardly able to realize how unsettled grammar still is. I remember once reading a paper before the Philological Society, in which I modestly advanced the view that *cannon* in *cannon-ball* was not an adjective. When I had finished my paper, an English philologist, who was also a teacher, got up, and told me that my criticisms were super-

¹ Another such criterion is to be found in the reference to the form, functions, and meaning that words have in the history of the language studied: for example, the originally substantive character of infinitives.

fluous, as no practical teacher possessed of common sense would think of calling *cannon* in *cannon-ball* an adjective. Thereupon, another eminent philologist, who was not only a schoolmaster, but had written an English grammar, got up, and, to the intense amusement of the meeting maintained that *cannon* in *cannon-ball* was an adjective and nothing else; and although he refused to commit himself to a comparison *cannoner*, *cannonest*, he found another speaker to support him (NEG v).

Why should comparison decide the matter? Whether a word is a noun or an adjective is only one of the many examples of this kind of difficulty. Similar troubles are encountered when grammarians attempt to differentiate between nouns and verbs. After setting up formal definitions, the grammarian immediately proceeds to discuss conversion in which nouns are used as verbs, verbs as nouns, and so on (HPE Pt. 2, Vol. 3, 96-161). Definitions thus run into each other, as when one speech part is defined exactly like another. When a verb is defined as that part of speech used in making assertions is it distinguished from nouns or any other part of speech?

Probably the most serious speech parts problem emerges when persons speak without words. What becomes of such elements when linguistic behavior is performed with gestures? Whenever we exclude gestural language we implicitly accept as our criterion of speech the activity of *talking like a book*—talking, that is, by means of conventional forms or crystallized words. Still more: we run the risk of immediately transforming speech behavior into static symbols.

WHY IS THERE NO SCIENCE OF GRAMMAR?

When the grammarian chooses to work with speech behavior we may regard him as having properly isolated his data from the other phenomena in the linguistic field. How shall we then account for his numerous difficulties? They probably arise from the way he handles his data. To achieve significant results the scientist must, after he has isolated his data, analyze and describe them accurately and validly interpret them.

Grammar is not a science because linguists have not confined themselves to linguistic happenings as they actually occur, but have mixed their facts with traditional prejudices. Grammar, therefore, has been more concerned with various intellectual artifacts than with human adjustments.

Grammarians, in other words, have not studied the actual speech of persons, but rather have analyzed and described *things*—word-forms, and even literary products—materials, in

fact, far removed from speech. And this not merely while investigating historic languages, but in the study of current speech as well. In this connection we again quote Jespersen (PG Preface) :

I am greatly convinced that many of the shortcomings of current grammatical theory are due to the fact that grammar has been chiefly studied in connection with ancient languages known only through the medium of writing, and that a correct apprehension of the essential nature of language can only be obtained when the study is based in the first place on direct observation of living speech and only secondarily on written and printed documents. In more than one sense a modern grammarian should be *novarum rerum studiosus*.

Jespersen without doubt puts his finger upon the nerve of the difficulty. Nor is he alone in seeing the necessity for studying actions and not things. Yet strangely, this scholar, like practically every other linguist, falls back upon things. Jespersen places much more reliance upon forms—the morphological abstractions of speech—than the facts warrant or the needs of linguistic description allow. Among the conditions contributing to the encrustation of linguistic facts, four stand out very prominently.

The Influence of Logic upon Grammar—Since Aristotle, at least, language has been regarded as somehow connected with thinking. Every grammarian wants to be a logician—he regards himself as an expert upon how to think clearly or at least to express thought lucidly. In the meantime the subject-matter of grammar has become something other than adjustmental behavior.

Throughout the history of grammar there have naturally been variations in the conception of logic. As an objectively-minded Greek, Aristotle regarded thinking as an objective reaction to things—a way of systematizing facts by organizing correlated or representative propositions.

Since then thought has become more subjective, so that thinking sometimes absorbed the things or created them. This subjectivity led to the notion that speech had more to do with thought than with things. Words were considered the carriers of meanings rather than direct symbols of things. In consequence, grammar became the discipline for ordering thoughts. Speech, however, was still regarded as things.

The notorious case of the classical scholar Hermann (1772-1848) illustrates the unwholesome effect of logic upon linguis-

tics. It will be recalled how this linguist attempted to fit the phenomena of Greek grammar to the specifications of Kantian logic. Not always do grammarians attach themselves to some particular variety of technical logic. In this case the results are even worse, since they fall back upon something popularly called logic.

The Influence of Classical Philology—Another disturbing factor not unrelated to the first has been pointed out by linguists without number; chiefly, the great influence of classical philology upon grammatical thought. There is hardly a grammarian—even those who are most keenly aware of the difficulties involved—who has not been influenced by the classical grammars to overlook the actual facts of speech in favor of traditional conceptions. As Mauthner (BKS 3, 4) said of Aristotle, if he had spoken some other language than Greek, he would undoubtedly have developed a different set of categories for his logic; so we may say of linguists generally, if they had been alive to the differences between the classical languages (Greek and Latin) and such speech types as Chinookan and Chinese, they would not have lost their way so badly.

The Bias of a Particular Language—Another detrimental circumstance in grammar is the influence upon linguists of a particular language or family. It is undeniable that many of the misinterpretations of speech find their source in a close preoccupation with the Indo-European, Semitic, or Amerindian family or some single member of such families. To confine oneself closely to a particular language may result in overlooking the specific variation of that language from other members of the family or from the characteristics of the whole group. The same thing may be said concerning the relations of families. To generalize the peculiarity of a language or a linguistic family into universal speech properties leads to great errors.

Confusion of Description and Described—In descriptive procedure the linguist beyond any other scientist is at a great disadvantage. When a physicist confuses his descriptions of light, for example, with light itself, his error is glaring and capable of correction. Not so in the case of the linguist. More frequently than not he unsuspectingly takes the medium in which his descriptive formulations are couched for the data described. Thus he falls into the error of studying descriptive things rather than the linguistic facts represented by his description.

THE DISSERVICE OF MENTALISTIC PSYCHOLOGY

The detrimental effect of the four sources of misunderstanding just discussed have not only served to disturb grammarians, but have introduced a great paradox. In spite of the fact that linguists have always appreciated the need for the study of actual speech and have been fully aware of these stumbling-blocks, their bad influence has continued unabated. There must, therefore, be another disturbing factor.

To study language as living actions is obviously to study it as psychological behavior. Grammarians, at least since Steintal, have given fair attention to the psychological aspects of language. But perhaps more than by their supineness in the face of logic and the concepts of classical philology, they have failed to advance their science by adhering to disserviceable psychological notions. In general we may say that by building upon an occult psychology, according to which language is somehow connected with mysterious psychic states, grammarians have transformed speech into symbolic things.

Up to the development of an objective psychology, this state of affairs was unavoidable. Today conditions are different. How occult or mentalistic psychology distorts linguistic facts we illustrate by the following examples.

The Case of Wegener—As early as 1885 this linguist strongly insisted upon the behavioral aspect of language. He undoubtedly recognized that speech was an adjustmental phenomenon when he wrote as follows:

As the physiologist does not go to old Egyptian mummies, but rather to the living human or animal organism to carry on his studies, so must the linguist learn the laws of life and growth of speech from the most transparent speech phenomena—the living mother tongue, in order to know how to sift and order the remains of the great ruin heaps of dead language (UGS 7).

Also Wegener suggested the great importance of the situation in speech—the influence of the environment. For example, the elaboration of what is said, he tells us, depends upon the surroundings. While standing before a linden tree with someone, it is unnecessary to say *This is a linden tree*; merely to say *linden* is sufficient to inform the hearer concerning the tree's identification.

These valuable insights into the adjustmental character of speech are unfortunately dissipated because of being founded upon a mystical psychology. Speech, for Wegener, does not

really consist of actual adjustments. Writing under the influence of a subjectivistic psychology, Wegener regards language as compositions of words whose function is to convey ideas or mental states. Speech does not really consist of adjustments, but rather of carriers of meanings. Though he calls language actions, he really believes that speech consists of things instrumental in influencing behavior or causing the hearer to be reminded of something. These language things, of course, operate in connection with psychic states. Nor does Wegener actually regard the language situation as an adjustmental condition—the auspices under which a speaker performs adjustmental behavior—but circumstances in which mental states connected with words bob up in the mind of the hearer. The situation only serves to clarify the *meaning* of a word.

The Case of Gardiner—In a recent work (GSL) this writer, building upon Wegener, makes a vigorous plea for the study of speech as a specific behavior experience, a drama in which the situation is important and in which actual things stimulate the speech performance. According to Gardiner:

Speech is a human activity demanding at least two persons possessing a common language and finding themselves in a common situation (7).

In consonance with this view he distinguishes between speech and language, and asserts that sentences are the units of speech, whereas words are the units of language. Sentences belong to the more dynamic aspects of linguistic phenomena, while words comprise the more static stock-in-trade.

There is something especially satisfying in Gardiner's stress of the thing meant or spoken of. He displays a keen insight into the fact that the linguistic event includes an adaptation to the thing spoken of, rather than being confined to the mere transference of an idea from one mind to another.

And yet the upshot of all this realization of the intimate adjustmental character of speech is merely a varying form of conventional language description and not an analysis of speech as it actually occurs. Though this writer starts with an admirable awareness of the dynamic and adjustmental character of language, he soon falls a victim to traditional mentalistic psychology. In speech, he declares, there are four factors. Besides the speaker, listener, and thing spoken of, there is the word or sentence.² All linguistic phenomena soon come to focus

² Gardiner expresses his great satisfaction in finding that the psychologist Bühler makes the same analysis.

upon these act-things. Words are then something that point to things—things meant, or instruments “to force or cajole the listener into looking at certain things” (33). Language finally becomes reduced to systems of signs (62ff, 192, *et passim*). The philologist or student of language:

. . . is concerned only with the spoken words themselves, with the audible products of the act of speaking (84). These utterances he treats solely as instruments of communication, as significant signs (85).

But subjectivistic psychology plays still greater havoc with Gardiner’s linguistic theory. Words for him are not really objects of sense as articulate sounds are. They are completely psychical (69), something aroused in the hearer’s mind by the sound issuing from the speaker’s lips. They are dissectible into an area of meaning and an image of a sound. A word itself turns out to be three things, each different from an adjustmental act. As a consequence, the whole adjustmental drama goes up into psychic smoke. We need only add that in making words into psychic states, Gardiner intensifies the usual mystical process of regarding language as the expression of psychic states to the point of making language itself into states of mind.

The Case of Malinowski—One more example. Malinowski (PM) offers an even better statement of the specific adjustmental character of language than either Wegener or Gardiner. As an ethnologist he describes the language of primitive peoples as action thoroughly integrated with the rest of the behavior of the individuals concerned. “In its primitive uses, language functions as a link in concerted human activity, as a piece of human behavior” (474). Also, he asserts that such language is not hampered by precise and definite grammatical limitations.

Once again mentalistic psychology begins to operate, with the result that Malinowski makes language into symbol-things. In consequence, primitive language becomes for him a case apart, and he draws a sharp line between primitive and civilized men and their differing speech. Civilized language he regards as an instrument for the expression of thought.

When we bore down to Malinowski’s fundamental linguistic theory, we find that for him words or expressions are really mediations between *minds* and things. The intrinsic adjustmental character of language, its behavior aspect, is submerged in the conception of words. Speech is only allowed its full adjustmental character among primitives; that is to say, speech is

not adaptive behavior except in certain situations. The whole conception of concrete human adjustments gives way to a process in which speech forms serve as symbols or mediators between mental states and things.

Now it is certainly clear that the speech of persons, in common with all the rest of their behavior, is different from that of other individuals. Every person shows in all his actions the influence of his local and national civilization. But certainly we are not obliged to draw so sharp a line between so-called primitive and civilized people. Naturally, the tremendous weight of written and printed literary impedimenta leaves its impression upon speech behavior. This is no less true when we compare the rural and urban dwellers in the most complex community. Havers (ES 115-122) has excellently described the differences in speech brought about by contact with transcribed materials. Nevertheless this fact should not cause us to overlook the adjustmental character of speech.

HOW ACTIONS ARE MADE INTO THINGS

Inasmuch as linguists have stressed behavior and even psychological principles, and have achieved no satisfactory results, we may conclude that the difficulty lies in the lack of an objective psychology. Even when grammarians speak of behavior or adjustments they transform speech into things.

What does the linguist mean by human action? He means, does he not, an utterance, an action of the *organs of speech*? Can these utterances be treated otherwise than as lexical or grammatical forms? Though we say language is action, we do not get far from things. The way out of the difficulty is to observe the clear distinction between psychological adjustments and the operation of speech organs. We must sharply separate the sheer activities of producing conventional sounds (phonic symbols) from genuine adaptations to linguistic circumstances. It is only by doing so that we are able to distinguish between true linguistic action and the impostors which merely assume the rôle. Let us clarify this point.

Jean Valjean takes a loaf of bread. This fact can be looked at in a number of different ways. For our present purposes we need only consider two. First, the act as a psychological happening interests us as an adjustment to a stimulus—let us say, a hunger-satisfying stimulus. Taking a loaf of bread constitutes a definite autonomous adjustment to such a stimulus object.

The judge, however, regards the act not as an independent adjustment, but as a thing—indeed, a monkey wrench which Jean throws into the machinery of social organization. For the most part, when the linguist speaks of language behavior, he is after all referring to action in this latter sense. He loses sight completely of the action as an adjustment to a particular kind of human situation. In effect, he transforms a complicated adjustment to a listener and a thing spoken of into a sheer utterance—even into a proposition.

We have already indicated that linguists take the description of an event for the event itself. Here is the *modus operandi* whereby linguists convert actions into things. When A orders B to pick up something, A's action of saying *Pick that up* is the whole linguistic fact. He has performed an adjustment to B and to the thing to be picked up. Now the linguist, of course, describes A's act in vocal or written form. He sets A's act up in a sentence and then regards this sentence or description as an instrument for accomplishing something. But the *instrumental* character of the action is only an interpretation added to what A does—an interpretation, we might add, that is considerably stimulated by our speech habits. Consider the immense variety of references we make by saying *thing*. Our language habits play a potent rôle in transforming events, situations, and conditions into substantial things. Is it too far-fetched a speculation that when we constantly speak of things in referring to events we actually help to reify such phenomena?

To help clear up the matter we propose that a genuine linguistic adjustment consists of no more than three factors. An action is stimulated by two stimuli: (1) the thing spoken of, and (2) the person spoken to.³ If we are to get at the fundamentals of speech behavior, we must fully realize that words need not come into the situation at all. We may perform⁴ gestures. But even when we speak words, these must be regarded as actions—that is, performances and not things or instruments at all. Howsoever much the bystander regards a person's speech as an instrument for accomplishing certain purposes, the student must not let his interpretation transform an adjustmental act into a thing. Rather, he must regard himself as observing an event in which (if it is a linguistic adaptation) a person is per-

³ See Chapter VI for a thorough analysis of these factors.

⁴ We do not say *use* because it is precisely this terminology that has greatly influenced linguists to make speech into instruments or things.

forming an adjustment to two things simultaneously. As we shall see in Chapter VI, the person may speak to himself, and thus be one of the two things to which he reacts.

The fourfold analysis of a linguistic event clearly illustrates the instrumental fallacy of Gardiner and Bühler. These writers definitely hypostatize the action of the person into a separate thing-factor. We suggest that the behavior of the speaker, whether it is a hand-gesture or a vocal utterance, constitutes the whole story on the personal action side. This factor, along with the other two—namely, the person spoken to and thing spoken of—makes the language event sum up to three and not four factors.

There seems to be no doubt that the perennial definition or interpretation of speech as instrumental has resulted in masking the adjustmental character of speech behavior. We may grant that the instrumental description of speech informs us of the interrelation of one kind of behavior with another. Thus, for example, when it is popularly said that speech is an instrument for expressing a thought, the statement points to the fact that the speaker is performing two connected actions, one a thought, and the other a speech action. A more accurate interpretation of the situation, however, should in our opinion be that the speaker *refers* to his thought action.

The instrumental conception is no doubt fostered by the idea that speech is a means of social interaction—in other words, that much of social interaction involves speech behavior, but this does not exclusively define its essential character.

GRAMMAR AN AUTONOMOUS SCIENCE

Probably one of the greatest requirements of linguistic science is to isolate language as a distinct, independent phenomenon—an activity in its own right. It follows that grammar as the science of speech must be an autonomous science, since it has its own unique subject-matter. This subject-matter is not things, but the speech adjustments of individuals, even if those things describe the adjustments. Grammar, therefore, must be emancipated from logic and history, as well as from classic traditions. The grammarian must proceed to describe the way speakers perform their linguistic adjustments in the situations in which they happen to be placed, without imposition of theories derived from logic, history, sociology, or even psychology.

These situations may be social, historical, or personal. It is obvious that how adjustments are made is conditioned by the speech techniques that have been imposed upon the individual by the cultural circumstances in which he is reared. Just as he is made to eat in a certain way, so he is required to speak in a certain manner. His vocabulary and grammar will be Chinese or French or some dialectal variation of behavior put under these rubrics.

In similar fashion, historical, commercial, military, and other conditions determine what he says and how he says it. The grammarian must also take into account the personal conditions of a speaker's behavior, which include age, number, and type of persons addressed, etc. As a result an individual's behavior is not confined to the descriptive terms dictated by some theory of what he should say and how.

It is our thesis that only an objective psychology, which studies human interactions with specific objects and conditions, can help the grammarian to describe linguistic behavior in this scientific way and free grammar from the entanglements of disciplines that prejudice its observations and interpretations.

GRAMMAR NOT EXCLUSIVELY PSYCHOLOGICAL

We have already sufficiently indicated that grammar is not applied psychology. Though we firmly believe that psychology in its recent objective development can be of cardinal aid in the study of language, it cannot be regarded as anything more than an interrelated science. The phenomena of speech are psychological only in some of their aspects. Speech is also physical, physiological, and anthropological. It has not, however, been misinterpreted in these aspects. It is for this reason and for this reason only that we set ourselves the task in the following chapters of applying the hypothesis of specific adjustments to various grammatical problems.

Before we enter upon our study of general (Pt. II) and particular (Pt. III) grammatical problems, we must engage in a number of preliminary investigations. First, we must mark out the field of our work (Chaps. II and III). Secondly, we must consider the historical relations between linguistics and psychology (Chap. IV). Thirdly, we must look into the conventional misconceptions that occult psychology has brought into linguistics (Chap. V). And, finally, it is necessary to define and elucidate the conception of objective psychology (Chaps. VI and VII).

CHAPTER II
LANGUAGE ADJUSTMENTS AND
LANGUAGE THINGS

FOUR TYPES OF
LINGUISTIC PHENOMENA

THE domain of language is a chaos in miniature wherein an enormous array of contrasting data are inextricably interfused. In order to make headway through this confusion of phenomena the psychologist of language must separate what is essentially his subject-matter from other types. Perhaps this can best be done by distinguishing between the different phenomena covered by the one term *language*.

We have already seen that grammatical language is more than just behavior. It is a specific type of adjustmental reaction—a psychological event. Here is a touchstone upon which we can rely implicitly in all our linguistic inquiries. Look into any treatise on grammar. The author seeks to discover and transmit knowledge concerning how people speak. But what we actually find in the treatises are lifeless forms—dead ashes, little hinting at the bright and warming blaze which is speech. Can grammatical forms exist except by virtue of the extinction of genuine language? Is it not a fatal scientific criticism that grammar books do not describe the actual speech of persons?¹

Here the grammarian may, of course, enter the extenuating plea of description. He may say that as a scientist he is describing phenomena, and ask, What description matches the facts described? Descriptions must be general and abstract. The plea is not allowed. True enough, the zoölogist's description of a frog may not fit any particular frog, but if it be valid description, it will tell us the essential characteristics of such an animal. Marvel that a grammarian (Ries WS) can assemble 140 different definitions of a sentence.

When grammarians assert that abstractions are the subject-matter of all grammar, as Noreen (WBS 214) does, we see how far grammar strays from the path of scientific description.

¹ "Especially was I oppressed by the grammar with its monstrosly narrow, stiff forms. I was altogether unable to squeeze into them the living, difficult, and capriciously flexible Russian language." Gorki, *My University Days*.

Granted that all scientific description is based upon abstractions and generalizations, the latter must nevertheless be derived from observed events. Above all, the descriptions should not be confused with the phenomena described. It is only when these two conditions are met that our linguistic propositions can be justified in the face of actual speech events.

We have already disclaimed the error of making linguistic adjustments or psychological language the only kind of language, or even the most important. It is our thesis, however, that if the psychologist is to be able to contribute something to grammatical investigation, he must be allowed to distinguish psychological language from all the other types which traditionally lay claim to the generic name language.

"Diseases desperate grown by desperate appliances are relieved." To achieve the difficult separation of real and apparent language, we adopt striking, though not blameless, terms. We must above all separate genuine from spurious language, speech from non-speech. By spurious language we mean such phenomena as properly enough bear the name of language, but have never constituted linguistic behavior. Whatever lacks the qualities of adjustmental behavior is ipso facto excluded from the domain of genuine language.

Just as effectively we are impelled to mark off genuine language from other phenomena, which, though they are not actual adjustments, are nevertheless different from spurious language. Here the contrast is between living and dead language. Under the rubric of dead language we place all linguistic phenomena that have been linguistic adjustments, but which at the present time are not.

To complete the series of speech phenomena we add a class of what are really sources of language. We call this nascent language. It represents materials, verbal things, dead language, etc., from which linguistic adjustments are developed by a transformational process.

In general, then, we divide the materials of language into four distinct types: (1) spurious language as contrasted with genuine, (2) dead language as contrasted with living, (3) nascent language, and (4) various forms of linguistic adjustments. The first three types of phenomena are linguistic things (non-psychological) while the fourth type alone consists of speech adjustments (psychological). We begin with the separation of genuine language from those linguistic things which we call spurious language.

LANGUAGE, GENUINE AND SPURIOUS

Characters, Signs, and Symbols—Signs and characters such as marks on paper or stone are not language. It is a popular but mistaken notion that mathematics is a language. The authority of the great American physical chemist, Willard Gibbs, is invoked to support this idea. Although Gibbs is quoted as saying, "Mathematics is a language," it is not certain what he meant by this statement. When scientists declare that mathematics is the most exact language,² they merely intend to say that it provides rigorous and unequivocal symbols. Probably the fundamental basis for the notion that mathematics is a language is that we can read its signs as we read words. But neither the mathematical symbol nor the act of reading constitutes living language. Symbols, no matter how serviceable in carrying on intellectual activities, are in no sense psychological language. To call signs, characters, and symbols language is to speak metaphorically. They are no more genuine language than one's beloved is the apple of one's eye.³

Linguistic Tools and Instruments—Language adjustments can be performed by writing, drawing, and signaling as well as by uttering conventional speech sounds. But the writings and signs, even when they are essential factors in genuine language, are not themselves language. As tools these things are no more language than the pen I am now using to write these lines is the writing. Let us not be misled by calling language an instrument. It is true that language may be instrumental to something else, just as war is regarded by many as an instrument for peace, but this does not oblige us to confuse two different kinds of phenomena. When we metaphorically speak of genuine language as an instrument, as in the case of asking for something and obtaining it, we do not by this reference convert language into a thing.

Linguistic Styles—When the linguist declares that he studies abstractions, or that "what we call French does not exist in the language spoken by any human being" (VL 242), he means to differentiate between linguistic cultural systems and the intercommunicative actions of persons. The former consist of speech fashions and manners, while only the latter constitute

² Especially Mach, Duhem, and Poincaré.

³ Cf. Kantor, *Language as Behavior and as Symbols*, *Journal of Philosophy*, 1929, 26, 50-159.

language adjustments. Conventions and manners, we insist, are not language; they are ethnic, not psychological, phenomena. Such philological materials are impedimenta of civilization rather than the specific actions of persons.

Linguistic types, therefore, as we are using the term here, must be sharply distinguished from the pattern of actual speech. By linguistic style we mean the linguistic laws which in various ways are comparable to the laws of a group, whether embodied in a book of statutes, in judicial pronouncements, or in legal traditions. An excellent illustration of the difference between actual speech and speech styles is afforded us by Brunot's contrast between what a grammar of spoken French should contain as a description of French speech, and the remote pronouncements of the Academy as to what French speech should be. Certainly some of the latter material is spurious speech.

Literature—Likewise the materials of literature are not linguistic behavior adjustments. No matter if they comprise English or German literature, and not Latin or Greek. This point requires no argument when we think of literature as written or printed symbols. But we also include here spoken literature. When a fable is told, it is as though the person goes through various pantomimetic gestures. He is verbally acting out a part. We have action here, of course, but not living language adjustment.

This is not to deny that one can speak in the form of fables. Parable speech is as much psychological language as any other. It may even be more effective language than other forms of living language adjustments. But always the essential criterion of psychological language must be satisfied.

It is possible, too, that spoken literary fables may be living language phenomena for the hearer—that is, referee language, as described in Chapter VI. A child may react as the hearer of something told by a speaker about foxes and grapes. As long as our observations and descriptions are based upon what actually happens, we will have no difficulty in distinguishing between genuine and spurious language.

Word Constructions—Words, like stones, are the materials of various types of craftsmanship. Out of them are constructed all sorts of linguistic edifices. Aphorisms, maxims, and proverbs may be regarded as quite in the genre of minor literature. We must, however, distinguish carefully between these products of

artisanship in which words and word-combinations are the raw materials, and aphoristic speech, which is genuine living language. When one says *Better late than never*, one may be adapting oneself to the late comer and to a time period. We should in no way be embarrassed by the necessity to scrutinize carefully the phenomena we study in order to describe them accurately.

Verbal Formulae—In the spurious class of linguistic things may also be placed actions like the sayings *How do you do?* *Good morning, Greetings*, and *Fine day*. These are not genuine language, howsoever much they are living actions. Linguists have pointed out the great difference between formulae and free expression (Jespersen PG 18), but not exactly in a way pertinent to our principle. Formulae are not excluded from living languages because they consist of series of non-interchangeable words or series from which nothing can be subtracted or to which nothing can be added, but because they are not linguistic adjustments. They are salutations or other sorts of vocal gestures, and have never constituted nor are likely to constitute referential adaptations to speaker and thing spoken of.

Verbal Records—Man, the verbalizing animal, keeps most of his records in verbal form. Such recordings are only in detail different from the mathematical and other symbols referred to as linguistic things. The different characters in which the recording is done, however, are worthy of mention. These records, ranging from bookkeepers' notations to stenographic court reporting, store away everything from amount of cash on hand at a certain time to the report of a verbal spar between attorney and witness. Great is the gulf that separates such verbal vaults from speech behavior.

Liturgical Speech—Among the most vivid examples of spurious language material are the very definite actions of liturgical speech which, however, fail to meet the criteria of speech adjustments. Liturgical speech consists merely of the formal repetition of words—spoken shadows of actions that have never existed in genuine linguistic situations. We have here the formal recitation of Old Slavonian (Bulgarian), Hebrew, or Latin sentences—a situation in which characters (à la Pirandello) have discovered an utterer. But even when the liturgical sentences are recited, they are actors playing a part on a stage. Liturgical dialogue is even less alive than conversations conducted in a dream.

Liturgic speech is living action, but spurious language as long as there is no manner of linguistic adjustment in it. Even genuine actions may be nothing at all linguistically as long as there is no conversation, no requesting nor demanding, no ex-postulation nor argument—in short, no referential action to person spoken to and thing spoken of. Such behavior, however, may be regarded as dead language (see below) if the speaker re-enacts behavior that has once been genuine language.

Still, it is possible that a devout person may adopt the formal and artificial language of liturgy as a framework or pattern to carry on his conversation with a higher power. If he does, his action is genuine living speech, comparable to the formalized action of saying *If his Royal Highness (you) will permit*, when addressing a king.

Note that all of the spurious language materials that we have been discussing may serve very effectively as stimuli for genuine language responses—that is, when these linguistic things stimulate us to talk about them, they participate in genuine linguistic situations. But this does not make them linguistic in a strictly psychological sense, any more than any other objects capable of stimulating linguistic behavior.

LIVING AND DEAD LANGUAGE

Above the portal of the linguistic academy must be indelibly inscribed the injunction, Let no one enter here who cannot distinguish between the quick and the dead. All proficiency in linguistic scholarship depends upon the ability to differentiate language that is living from language that is dead.

Can we agree concerning what is or is not dead in the linguistic field? What belongs to linguistic paleontology and what to the ecology of speech? It is even easy to disagree as to what are the dead remains of language and what has never been language at all. In the following analyses we attempt to indicate the characteristics that distinguish living from dead language.

Linguistic Fossils—Students of language have always divided off living and dead tongues. Modern languages, it is believed, are living; classical Greek and Latin, dead. But clearly this distinction is not sufficient. It does not divide off true language from what is not language at all.

As far as we are concerned, modern language, as fixed materials of linguistic studies, is just as dead as Gothic, Hittite, or

Egyptian. Words, no matter upon what level of time, are moribund materials, and must not be mistaken for true language. The grammar books of modern languages are sarcophagi, since for the most part they are containers of embalmed expressions. It is an act of supererogation to point out how great a difference there is between the incessantly variable activities of the individuals who speak German, and the materials one finds in the book entitled *German Grammar*. This divergence between actual German speech and what is contained in the grammar books was already noticed by Grimm, one of the first modern grammar makers, when he wrote:

Every unlettered German who knows his language intuitively and without reflection may be a living grammar unto himself and boldly dismiss all rules of the language masters (quoted from LSL 30).

As long as we adhere to the conception that living language is behavior, something that a person does (no other conception is admissible) we must exclude the materials of modern as well as of classical languages from the domain of living linguistic behavior.

It is obvious, then, that by a linguistic fossil we do not mean inscriptions or other transcriptional things. We refer to the actual speech that the transcriptions represent, if any. Atkinson⁴ points out that the language of some passages in Aeschylus' *Agamemnon* is as far removed from everyday speech as it is possible to imagine. Such material does not represent speech. It has always been a thing, howsoever beautiful. Genuine linguistic fossils must once have been living speech, not standard or literary language.

Speech Products—The exigencies of life sometimes endow genuine speech action with a certain kind of immortality. As in the story of the words that get frozen as uttered, but later come to life again, so certain utterances and sayings *live* on, either in records or as quotations. Such dead language we may regard as speech products. These speech products, whether dialogue, as in Plato's report of what went on between Socrates and Protagoras, or the crystallization of an admired or apt *expression (to be or not to be)* are things and not living speech. They may be regarded as the objects or subject-matter of some sort of linguistic history, but they are even less like the living language they represent than the mirrored image is like the person who looks into the mirror.

⁴ *The Greek Language*. (London), Faber, 1931, p. 227.

Recollected Speech—As our final example of dead language, we cite actions that are very intimately related to genuine language—namely, they exist in what is poetically called the storehouse of our memories. When we recall what someone said, that linguistic material is not now language. As we reminisce upon what was spoken, the original stimulus for our act of remembering may have been the most effective and viable form of language adjustment. And yet we must reinforce our distinction between living and dead language by pointing out that from a psychological standpoint we have here a thing—an object of reminiscence, which can be responded to only by a substitute stimulus and not by an actual language action.

NASCENT LANGUAGE

Until we actually have before us linguistic adjustments, we have no psychological language. Linguistic adjustments, like all others, exist only while they are being performed. But since we can observe events as they begin to occur we have a definite basis for a new division of language types—the nascent forms.

All genuine speech as temporal events must have a nascent or definite birth period. There are, however, three different ways in which this birth process takes place.

Consider first the ordinary living language situation. The individual living among people who speak a certain language gradually acquires certain types of adjustmental acts, so that under a given familiar circumstance—say when he needs a tool—he will say *Please hand me the saw*. Every time this response occurs it comes into existence anew and passes out of existence. But we may expect it to happen. This expected action, strictly speaking, is nothing at all. But we do have here a definite situation out of which we may predict a linguistic adjustment to emerge. Such a prediction is possible because the situation is one in which the person takes on certain kinds of language traits. The basis of our expectancy also lies in our knowing the conditions under which these traits will later operate. The existence of language, as well as all other behavior traits, is really a condition of a response being tied up with such circumstances as will elicit the response.

Behind this occasional birth and rebirth of an individual's action lies the elaborate process of language development in the group. Here we have a general and gradual cumulative devel-

opment of a series of behavior patterns operating as common ways of linguistic adaptation. These developments may in part be initiated by particular individuals, but the form spreads over the general linguistic or dialectal population.

Nascent language consists of activities arising, as do ordinary dialectal language patterns, out of long-time gestation processes, but here they develop according to foreshadowed circumstances on the basis of transcribed or otherwise existing plans. We frequently observe how the exigencies of political and national conflict and revival may stir up a need for a new or an old type of linguistic behavior. This means essentially that one or many individuals, more or less deliberately, give birth to a language by way of adapting themselves to linguistic situations. We may regard this in a sense as a revival process comparable to the dying out of languages, as in the case of many American Indian tongues. How these events occur and the limitations placed upon them will appear presently.

Artificial Language—Artificial language of all types may be given a prominent place in the realm of nascent language. It is clear that when the inventor sits down to invent a new language he is working with things just as much as the inventor of a gasoline engine. When the work is finished, certain individuals may take it upon themselves to transform these dead materials into a series of linguistic activities. This they do by building up speech responses patterned after the inventor's specifications. After this transition takes place, we have true language of an extremely conventional type, at the beginning at least. The transformation necessary throws into relief the differences between (1) a living phenomenon, (2) its source, and (3) the in-between transitional processes.

Revived Language—The revival of a language is analogous to the development of an artificial language. It is a transformative process of making a thing into an action. Because of the revival possibilities we must regard such nascent language as on a different level from dead language. As long as the revival is a possibility, as in the case of Hebrew in Palestine, or various slang forms in any tongue, the language may be regarded as hibernating or dead, but still a source of genuine language. These artificial language sources of genuine speech are certainly closer to genuine language than such linguistic things as signs or symbols.

Strictly speaking, of course, there is no such event as reviving language. What actually happens is essentially the same process as the transformation of artificial language into genuine speech. Persons acquire ways of adapting themselves linguistically on the basis of a previously existing pattern of speech behavior. There are decided limits to this procedure, since a pattern of action developed in a certain human situation can operate only after being greatly modified and added to in order to be useful in the new circumstances. It goes without saying that the limitations are possibly not so rigorous when revival consists of a spread of a language from a small to a large portion of the population, as in the case of Gaelic, when compared with the more radical renaissance of a language such as modern Hebrew.

Vitalized Aphorisms—Expressions that come into existence perhaps as rhetorical ornaments may be destined to become living language. An orator may attempt to impress his audience with the necessity to *speak softly and carry a big stick*. At the time of its creation this linguistic phenomenon is merely an act-thing, an instrument devised to stimulate an effective response in an audience. Later, however, the thing-act, like Galatea, may be vitalized and constitute an actual linguistic adjustment. When this happens we must regard the phenomenon as a definite metaphorical adjustment and as such a distinct form of living language. Until that time, however, the linguistic element remains a part of the field of language things. When this vitalization takes place we observe the changes that occur, and alter our classifications and descriptions accordingly.

FORMS OF LINGUISTIC ADJUSTMENT

The distinguishing marks of genuine living language have distinctly appeared throughout our present attempt to classify linguistic facts. It is clear that linguistic phenomena consist of a variety of particular forms of psychological adjustment. We should like to add that the distinction between adjustmental and thing language cannot be made by putting sentences on one side and words on the other, since we have already indicated that linguistic adjustments need not be vocal at all.

From the grammatical standpoint, true language may be entirely formless. Speech events may go on entirely as the interaction of gesturing persons. These individuals may be

deaf or mute, both or neither. Speech may consist entirely of the waving of hands and shrugging of shoulders. It goes without saying that formal propositions need not be uttered, nor need there be any specification of a listener and a hearer. No limit must be placed upon the manner in which speech adjustments are performed. The following illustrations may be regarded as a series of specimen linguistic adjustments.

Conversation—Of the various degrees of conversation, the most extreme are the vivacious adjustments that are formless from the standpoint of conventional grammatical categories and rules. When the speakers are very intimate their intercourse lacks entirely a formal vocabulary, word order, and the other paraphernalia of conventional grammatical speech. Instead, they may use all sorts of spirited gestures. Assume that the things they are referring to are as nonsensical and ephemeral as possible and what they say about them frivolous and inconsequential, and we see that the weighty machinery of conventional linguistic description is out of place altogether. The persons concerned are nevertheless adjusting themselves to each other and to the things to which they refer. Such language, perhaps more than any other kind, is creative, its particular items occurring but in a fleeting moment, never to be repeated in similar form.

At the other conversational extreme is the staid intercommunication between confessor and confessant, or between two ambassadors.⁵ Here there are definite and important things to talk about. Though chosen words are used, accompanied by studied stress and intonation, there is still an immediate interchange of question and answer unpredictable in detail before the events. Both of these extremes of conversation and all the degrees between are superlatively vivid forms of linguistic adaptation.

Discourse and Oration—One-sided and ceremonious discourse, howsoever alive, is dull and wooden compared to sprightly conversation. Lecturers and orators may definitely adjust themselves to their audience and to the things of which they speak, but the formality and solemnity of the occasion mollify the vivacity, if not the intensity, of the speaker's behavior. Even his lively gestures must fall into a distinctive pattern in order

⁵The effect of a situation upon language of the conventional sort is excellently discussed by Wegener (UGS).

to appeal to a varied gathering. In addition, the very passivity of the listener inevitably conditions the performance.

Conventional Verbal Language—When language is acquired from a grammar book instead of at mother's knee, the behavior is living language, though it consists of the stilted repetition of linguistic adjustment activities. This is true even if the entire verbal equipment has been built up by following the phonetician's directions, carried out in front of a mirror, or by listening to a phonograph.

City of light and learning. Paris at evening. The scene, a café on the Boulevard. Observe the foreigner speaking—a most diligent student. He has memorized every form in his French grammar. But even if he remembers not to use the past definite or the imperfect subjunctive he still speaks like a book, even if it be a grammar book.

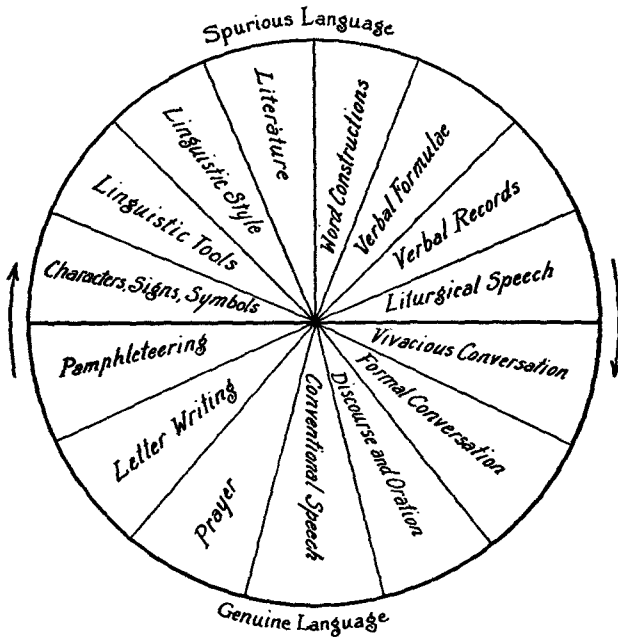
By contrast the speech of the native is a piece of actual life. His vivacious motions, gestures, and vocal utterances are all integral elements of his linguistic adjustments. The foreigner seems to be reciting, while the idiomatic and personal behavior of the native is as far from a grammar as the man himself is from Gray's *Anatomy*. Both of these speakers, however, are performing living language adjustments.

Prayer—The devout person kneeling in the deep silence of a darkened cathedral may well be regarded as actually speaking to a higher power. It is not without the bounds of probability that there are persons who in this manner and under these circumstances perform their most spirited and serious language behavior. The one-sidedness of the behavior and its normal confinement in subject-matter place it, of course, in a different class from the other forms of linguistic adjustments.

Letter Writing—True language, however, can be performed by means of even more formal action than the vocalizations of our grammatical speaker. When one conversationalist is distantly removed from the other, he must write instead of speak. Writing is at best formalized action, which requires a pen or pencil in addition to the person's own anatomical mechanism. And yet despite its extreme artificiality it is still genuine and even animated speech. The activity in this case is merely an extension of the activity of speaking over a wire.

Pamphleteering—The deadest of all living language is that in which the individual speaks to a distant audience. Such lin-

guistic adaptations may involve vast stretches of space and long intervals of time. The situation may require that the person's actions be embalmed by the cold process of typography. But no one should confuse the actual language adjustment, which may be writing as well as vocal reference action, with the printed or written words, no matter how the adjustment finally becomes known to the hearer.



COMPARISON OF LIVING LANGUAGE TYPES

In presenting these examples of living language we should like to call attention to the method of arrangement. We have attempted to place the various kinds of living language in a rank order, beginning with the most vivid and ending with those activities which, though fully conforming to adjustmental criteria, are more static and conventional in form. This order is shown in the accompanying diagram. Notice that the arrows indicate a similar order for spurious language, as well as the meeting place of the more viable phenomena of both series.

SPEECH AND LANGUAGE

The reader will notice at once that the distinction between language and things is in no sense comparable to the distinction between speech and language. It is possible that linguists have attempted, perhaps unwittingly, to divide off language from things by calling the former speech and the latter language. That distinction, however, does not really meet the case, since speech, which is presumably limited to vocal utterances, may from our standpoint be both language and things. We might be reminded once more that unless a vocal action is a language adjustment, it cannot be admitted into the class of psychological language, while genuine speech adjustments can be performed without vocal utterance of any kind.

CHAPTER III

PSYCHOLOGICAL AND CONVENTIONAL GRAMMAR

THE great contrast between language adjustments and the materials of conventional linguistics is naturally reflected in the differences between psychological and conventional grammar. Since conventional grammar studies are almost exclusively limited to the description of language things, the various problems and methods of traditional and psychological grammar must vary considerably.

When we take account of the many historical, comparative, descriptive, and normative grammar studies we must agree that much excellent and useful work has been accomplished. At the same time, we cannot overlook the fact that these studies deal mainly with spurious and dead language. Even when grammarians are alive to the psychological background of speech, they fail to do justice to genuine living language.

What needs to be developed, therefore, is a psychological grammar, one that will mirror for us the distinctly adjustmental character of human speech. This need may be insisted upon for two reasons. First, every datum of language, whether conceived of as comparative, historical, or current, in the final analysis, is a psychological adaptation. Secondly, even those who would not care to go so far assert that an accurate knowledge of language as a psychological phenomenon can throw light upon grammar problems. We proceed therefore to characterize psychological grammar as vividly as possible, and to emphasize in what ways it differs from non-psychological grammar.

PSYCHOLOGICAL AND NON-PSYCHOLOGICAL GRAMMAR COMPARED

Psychological grammar deals with language adjustments, irrespective of the forms those adjustments take. For instance, *aint goin'*, is equally as effective an adjustment as *I am not going*. Also, psychological linguistic actions can be performed by pointing, head nodding, facial expression, and other gestures. This adjustmental factor—admittedly only one among many

others—undoubtedly constitutes a fundamental feature of all living language.

Psychological grammar then is the study of how language adaptations are actually carried out. Because the psychological grammarian emphasizes the personal character of language, he places great value upon the superior insight of those linguists who declare that there are as many languages as there are speakers (VL 236). But even this proposition does not go far enough, because it refers only to variations in the way verbal adjustments are made. We must take into account non-verbal communication as well, since psychological grammar deals with words only as one type of language adjustment among many others.

To insist upon specific performances as the field of psychological grammar is, of course, nowise to question the fact that scientific descriptions are generalizations, but rather to avoid the fallacy that the original data of linguistics consist of invalid abstractions.

Among such abstractions are to be numbered (1) traditionally grammatical things, (2) various behavioral mass phenomena, and (3) sheer abstractions. For instance, historical grammarians study changes in visually presented word transcriptions or abstracted speech material without regard to the ways that persons actually spoke. Again, comparative grammar deals with auditory-vocal mass phenomena abstracted from the linguistic adjustments of the persons *using* such languages. It is obvious, too, that while ordinary descriptive grammars treat language as primarily phenomena of literary composition, they also presuppose standards for spoken language, and therefore get away from actual adjustments.

No linguist has failed to observe the great gap between conventional grammars and the way persons actually speak, but even those linguists who emphasize the discrepancies between individual speech and the statements in grammar books think only of lapses from the conventions. They do not take into account that such discrepancies are merely symptoms of the existence of fundamentally different phenomena. For no difference can be greater than that which marks off linguistic things from speech adjustments.

Interesting in this connection are the various attacks that have been made upon the grammar method for learning languages since Ascham and Montaigne in the sixteenth century.

Especially important is Locke's diatribe (1692) upon the artificialities of grammar which are so far removed from the realities of living language. Buchanan and McFee¹ suggest that what Locke asserts, when expressed in a modern way, is that grammatical rules inhibit facility of speech. These writers believe that Locke probably borrowed his theory from Comenius (1592-1671), though the facts concerned are so obvious that a long line of writers have over and over again restated the theory—for example, Viëtor, Sayce, Bally, Brunot, etc. When we consider that for the most part the criticism of the grammar method of language learning has been applied to foreign languages, which we expect to be less viable than native speech, it is truly remarkable that no greater impetus has been given linguists to discriminate between linguistic adjustments and grammatical things.

To illustrate some variations between psychological and non-psychological grammar we may consider some striking differences in the handling of problems in the descriptive, comparative, normative, historical, and explanatory grammatical fields.

DESCRIPTIVE GRAMMAR

Language and Nature—Conventional grammar is interested in the incongruity between speech and nature.

The outside world, as reflected in the human mind, is extremely complicated, and it is not to be expected that men should always have stumbled upon the simplest or the most precise way of denoting the myriads of phenomena and the manifold relations between them that call for communication (Jespersen, PG 54).

A case in point is the incongruity between gender and sex. We refer to woman as sexless (*das Weib*), to men as female (*la sentinelle, die Schildwache*), and to objects as male or female (*le livre, la livre*). Such discrepancies in language we find both in considering some specific language or in comparing two languages. For example, a Frenchman may consider the Germans peculiar in referring to the sun as feminine and the moon as masculine.

Contrariwise, from the standpoint of psychological grammar, there is never any incongruity between language and nature. When we look upon speech as an adjustmental activity, it is only a question whether the speaker has adequately referred to something. In consequence, no limit may be set upon the man-

¹ An Annotated Bibliography of Modern Language Methodology, p. 11.

ner in which he makes his adjustments. According to psychological grammar it is entirely wrong to think of language as conforming to nature.

Consider the following: *He has gone home to take a sleep, I won't catch that train, I turned my attention to something else.* When we analyze these statements as words with symbolic representation, we might complain of the violation of nature's laws or, at least, of the incorrectness of speech. On the other hand, when we consider ourselves as performing interactions, the justification for the way we speak lies entirely in the consummation of an adjustment. That is all that matters.

Jespersen raises another such question concerning the incongruity of speech and nature (PG 63). Everything in nature is concrete. Every object has certain specific qualities. But in speaking of an apple, for example, you cannot *express* all those qualities. The word apple, then, is abstract, and hence entirely incongruous with the real apple.

Clearly this writer is discussing words that are presumed to represent or symbolize things in nature. This is essentially the viewpoint of conventional grammar, whether manifest or implied. Psychological grammar, on the contrary, finds the speech action as an adjustment autonomous and complete. *Take that apple*, or merely pointing to an apple when one is eating one, satisfies all speech criteria without raising questions about the layman's, the scientist's, or the philosopher's conceptions concerning the qualities or general nature of apples.

Reference and Description—There are numerous indications that conventional grammarians are powerfully influenced by the phenomenon of formal description. Traditional grammars are based primarily upon the propositional utterance. Interrogations and exclamations are made into variants of the proposition. Interjectional speech, because of its non-conformity with propositional form, is frowned upon. This leaning toward the proposition is manifested by the grammarian's great neglect of answering speech. Because answers to gestures are simplified responses not describable in propositional form, grammarians incline toward the full and formal statement including a finite verb.

Furthermore, since non-psychological grammar stresses abstract forms, it favors exact description rather than speech adjustments—sheer references. The tendency of grammar, therefore, is to treat speech as though it were scientific description.

Psychological grammar, quite differently, implies that ordinary speech is far removed from exact description. It is in fact the opposite of technical scientific description, which is an enterprise of rigorous symbolization or representation of phenomena—that is, the production of records. Both the intimacy and casualness of the speech-adjustment situation are here lacking. As a scientist, the describer attempts to fixate a phenomenon, as the biologist fixates a tissue in order to preserve it and make possible future operations upon it.

In performing actual reference adjustments even the scientist speaks the language of his dialectal group. It is true, of course, that his vocabulary will be distinctive in order to fit his partner in conversation and the things of which they speak, but there will be no phonographic reeling off of sentences from a treatise.

Psychological grammar, therefore, is not bothered by the ineptness of language. It is only when such expressions as *criminal lawyer*,² *insane asylum*, *dramatic critic*, and *cordon sanitaire*, are studied as logical forms that they become troublesome. Actually no one is ever misled by such references. When we look upon language acts as psychological adjustments no such difficulty arises. Because of its very adjustmental character, language is spontaneously developed and takes on all manner of forms. When we call upon a friend it matters not at all whether we ride, walk, or run. The adjustment consists in the friendly greeting and conversation. Similarly, in the case of speech, the reference is the thing, an activity which allows for great leeway in the particular manner in which it is performed.

Generally speaking, ordinary and scientific speech behavior can be distinguished by the amount of metaphor. Ordinary language is shot through and through with figures of speech which add to the drama of linguistic interaction. It is not necessary to pass on facts or events by means of things, whether words or blue prints. In contrast, scientific communication involves translation or transfiguration, whereas in linguistic adjustments communication is a dramatic momentary interaction, not necessarily important or consequential as a scientific communication should be.

²It is interesting to note that lawyers suggest the term *lawyer criminal* for the outlaw lawyer. See an editorial in *The American Bar Association Journal*, November, 1933.

Affective and Effective Language—Because the problem of affective or emotive language indicates a slight rapprochement between conventional and psychological language, it serves excellently to throw into relief the divergence between the conventional and psychological grammar methods of handling speech phenomena. The underlying theory of conventional grammar is that the speaker, by means of words, expresses or symbolizes things. This means the grammarian deals primarily with intellectual or effective activities. Is it not obvious, however, that there is another side to uttered or written words—namely, they may serve primarily to arouse a feeling or affective state in the hearer? Accordingly, in recent years linguists have added to their definition of speech the expression of feelings as well as ideas. One thinks here, of course, of interjectional speech and the affective excitement induced in the hearer by an atrocity tale.

Now it would seem that this emendation of the speech definition might open up a way to the consideration of speech as an adjustment within a particular situation. In other words, make room in conventional grammars for something more than mere propositional utterances.

But no. The conventional linguists are so thoroughly preoccupied with the thing-aspect of language that they completely ignore its adjustmental character. Take the case of Ogden and Richards (MM 13, 261, *et passim*), who have recently been most energetically concerned with this problem of affective speech. More than most others, these writers insist that provision be made for affective or emotive language, urging that words have two functions, the symbolic and the emotive.

The net result of their work, however, is to enforce the reification of language, making words into such stimulus objects as call forth affective or feeling reactions in addition to intellectual or meaning responses. That they accomplish no more is owing to the fact that they are symbolists—in other words, assiduous students of the manner in which words do or should symbolize things. Their reification of words merely boils down to the statement that certain words, like certain flowers, can arouse in the person a feeling response. Completely lacking here are the essential descriptive details of speech phenomena.

We submit that the conception of speech as referential adjustment occurring in concrete human situations provides a more adequate technique for handling the problem of emotive

language. In line with this conception any instance of speech may be surrounded with all kinds of nuances and refinements. When A refers B to his child's accident, the language response is completely exhausted in A's referring B and B's being referred to the accident. When B is apprised of the accident-event, he will perform a response of anxiety or grief. This feeling response is in no sense linguistic. Similarly, when B is informed of or referred to a legacy that he has inherited, his linguistic referee response will be accompanied by another response stimulated by his good fortune. There are at least two responses to be considered here: (1) the linguistic, and (2) the affective. What is called emotive speech, therefore, is really a linguistic situation in which a feeling stimulus and a feeling response operate coördinately with or surround the essentially referential stimulus and response. The grief and joy situations both contrast with the case in which the person is merely informed of some indifferent event, *It began to drizzle a while ago*.

The emphasis conventional grammar places upon words and their combinations enables the grammarian, at most, to speak of choice of words and their arrangement in sentences in order to produce a pleasing effect upon the hearer (VL 140, *et passim*). The whole background of human circumstances for speech interactions is completely overlooked. When the lover says *I love you* to his beloved he has not necessarily chosen his words, nor has he exercised any ingenuity in their arrangement. Yet the feeling response follows the specifically referential act.

COMPARATIVE GRAMMAR

Reference and Form—Does or does not English have a future tense? Is there or is there not a superlative in the French language? Grammarians cannot agree upon the answers to these questions. The examination of such problems throws into relief the differences between psychological and philological grammar, and likewise argues for the necessity of such a distinction.

Clearly the linguist who denies English a future tense and French a superlative adjective (PG 49 ff.) is not speaking of linguistic adjustments, because it is obvious that Englishmen can speak of impending happenings quite as well as any other person. Also, cannot the Frenchman speak of superlative as well as comparative things, even though we do not allow him such forms in his conventional vocabulary? In terms of dead

forms it is true that the English language has little or no case system. But obviously this does not mean that the English speaker cannot say everything the Roman could, howsoever full a set of case forms we believe Latin to have had.

Naturally we do not agree with those who say that when certain grammatical forms are lacking, they are merely replaced by substitutes. Some grammarians assert that if the English language lacks a form like the French *J'irai*, it is substituted for by *I shall go*. Rather, we want to insist upon the fact of linguistic reference, the adjustment to future conditions and circumstances, no matter how this happens in any specific instance. The fundamental point, of course, is that we must not be misled in our studies by traditional viewpoints. This descent to concrete facts, to actual observations, is a necessary preliminary to understanding the question of forms as over against actual references.

Custom and Logic—A further contrast between psychological and conventional grammar manifests itself in the problem of logic in speech. Students of language sometimes betray themselves into believing, for instance, that one language is more logical than another, or that an inflected language is more precise than an uninflected one. Such ideas overlook altogether that speech is an adaptation.

Sapir (SL 104 ff.) offers two Latin expressions, *illa alba femina quae venit*, and *illi albi homines qui veniunt*, and reflects upon the difficulty of a Chinaman to adjust himself to such an illogical confounding of subject-matter and speech pattern. "Each word," says Sapir, "involves no less than four concepts," whereas "logically only case . . . imperatively demands expression."

Now this kind of language comparison is obviously founded upon the assumption that we are dealing with word-things which carry or convey meanings or concepts. And if we cared to, we might ascribe such illogical language character to many inflectional phenomena.

Even if we believe that Latin speakers actually indulged in such repetition, we can only assume this when we look at the printed word and find a repetition of symbols. When observing the Roman speaker, instead of a question of logic we have psychological adjustments performed under the auspices of a particular kind of civilizational pattern. The speakers build up a

style of utterance, and do not keep on symbolizing the sex of the thing spoken of. Symbols only exist in a formal analysis of the recorded speech. It is not enough to say as Breal (*Semantics*, 220) does, "It [language] overflows the bounds of logic on every side." Rather, language has nothing to do with logic. Psychological grammar deals with actual behavior, with activities which are inevitably set in a matrix of human circumstances. It is not at all concerned with a formal arrangement of symbols or correlations between words and things. When I say *I do not intend to go home*, you do not ask whether there is an intention or not. The conventional grammarian, applying his meaning analysis, might teach that there is an intention, but not of going home. The *not* then has to be discounted. Or he might find that despite the *not* there is a definite intention-expression to go somewhere, but not *home*. Another logically-minded student might find an intention, though it is *not to go*. As far as we are concerned, the whole performance of the speaker may be reduced to the word *no*. Psychologically, not even a word is necessary. A nod of the head or a shrug of the shoulders is sufficient.

Consonance and Dissonance—It is said that some languages are musical, while others are harsh. Foreigners judge a language like Italian as pleasing, while Arabic they regard as the opposite. Now the traditional comparative grammarian, looking upon language as objective sounds represented by alphabetical symbols, generally describes the differences between such contrasting forms of speech as structures made up of vowel and consonant building materials. He speaks of languages then as running toward vowels or consonants, or as carrying vowels or juxtaposing consonants in diverse patterns. On the whole, there is a tendency here to formalize and staticize speech.

To such a building-block comparison of speech, psychological grammar is strongly opposed. From the standpoint of the speaker there is only a configuration of verbal action—thoroughly dynamic—and of no musical or unmusical value. True enough, these patterns of action are different. Individual speakers are conditioned in their speech behavior by pattern effects that have grown up, as all customs develop, by minute increments of change. But these are only known by the outside observer. Neither the Germans, nor in greater measure the Arabs, speak a guttural language. They merely adapt themselves differently, and it is only in so far as we describe their

behavior in static terms that such characterizations as pleasing or musical are relevant.

A significant analogy may be drawn when speech consists of sound making. The speaker is like the instrumentalist who does what he has learned to do when certain notes appear before him. His action is the important thing. We must not take the sounds that result from his action as the counterpart of speech.

NORMATIVE GRAMMAR

Beauty and Grace in Speech—How one walks, dances, carries oneself, or bows—all these are subject to aesthetic judgment. Why not speech? No less than any other form of behavior, speech may well be set beside a standard for mere comparison as well as for suggested improvement.

Style in speech marks another line of differentiation between psychological and conventional grammar. There is no doubt that one prominent aspect of conventional grammar is to establish standards of grace and beauty in speech, whereas the psychological grammarian is interested only in the occurrence of referential adaptations.

Speech style might be regarded either as an extension of the canons of writing to speech, or as an autonomous discipline developed before writing became a common form of behavior. Regardless of whether there can be valid objective criteria of beauty in speech, we all develop preferences for certain ways of speaking. These preferred ways include pronunciation, accent, tone of voice, etc.

Especially since the inception of radio broadcasting, speech culture has taken on great importance. Training techniques have been developed, prizes offered, and tests made. All sorts of qualities and conditions of speech are analyzed and set up as standards, in addition to matters of vocabulary and grammatical correctness.³

Notwithstanding, all of this is above and beyond the primary concern of the psychological grammarian. He is interested more in the field of descriptive than stylistic grammar. Not that the psychological grammarian is disinterested in the question of the conditions governing adequacy of speech. A branch of psychological grammar may well be devoted to, say, pathology,³ but no one can confuse ability and adequacy of reference or adjustment with beauty and grace of conventional language.

³ For material on this subject see Selected References at end of book.

Linguistic Etiquette—Linguistic behavior is not only subject to standards of beauty, but also to the canons of sheer etiquette—good usage. Purism in language has to do almost entirely with arbitrary rules, based upon wont and custom-established usage. Here again we may distinguish between conventional and psychological grammar.

The conventional grammarian definitely looks upon himself as a conservator of fixed modes of performing language activity. Grammatical etiquette is primarily a matter of constructing literary devices. We are told not to place a preposition at the end of a sentence, not to split our infinitives, nor to begin sentences with *but*, *and*, or *however*. The carrying over of correctness-standards to actual spoken language means that we are asked to pattern our linguistic behavior upon literary models. Here we learn that it is improper to say *ain't* for *isn't*, or *me* for *I*.

Now let us turn from this description of correct speech to the very different field of linguistic adaptations. Correctness in this instance consists entirely of responding to the stimulus which calls out the reaction. There is no room here for the imposition of grammatical conventionality. As a student of living language it is not for the psychologist to applaud or condemn fine speaking. All speech, which is an adaptation to a stimulus, is psychologically sufficient—that is, it is susceptible neither to praise nor blame.

HISTORICAL GRAMMAR

The Problem of Linguistic Change—As we might expect, the field of historical grammar is occupied more than any other with language things, a condition intensified by the fact that these things are to a considerable extent pure artifacts. It is, of course, impossible to observe activities which have occurred many centuries before. Accordingly, the historian of grammar must deal with abstractions which are frankly constructive, though it is hoped that such constructions are based upon valid inferences from existing linguistic data.

In any case, however, when the grammatical historian makes inferences, he usually does so on the basis of formalized speech materials. He abstracts from all the numerous variations in the way speakers actually perform their linguistic reactions, since for the most part his data consist of conventionalized sounds based upon transcribed materials.

Naturally, with each move toward a prior language period the language departs farther and farther from actual speech behavior. In this connection we are reminded of the various reconstructions of parent languages. Linguists, of course, are fully cognizant of the great gaps in knowledge concerning actual speech, even in such a fruitful field of knowledge as that of the Romance languages. Every linguist knows how much is lost in not knowing the various types of vulgar Latin from which the present Romance languages have descended. Similar conditions naturally prevailed in every type of language.

The fact that we cannot set up even the remotest hypotheses concerning the way people spoke in historical times strikingly illustrates the contrast between psychological and historical grammar. The latter field is concerned entirely with language things, either transcriptions or cultural conventions of the language pattern type. It goes without saying that in this field an objective psychology shies away from such superficial explanations of language change as the laziness of speakers, increase of rapidity in speech, and so on.

The Problem of Linguistic Origins—The student's perennial search for origins finds an ample outlet in the linguistic field, since there are so many phases of phenomena in this domain. In separating these various genetic problems, we may assert, to begin with, that two of them fall without the bounds of both psychological and non-psychological grammar. The first is the problem of the origin of the general faculty of speech, in brief, a problem of biological evolution. When in the racial history of man and under what circumstances did the animal *homo sapiens* develop the capacity of performing speech adjustments? The second can be formulated in the question: When did the human animal begin to build up a mass of linguistic traditions to be handed down with modification from one generation to another? The latter is a purely anthropological problem.

Language questions of an authentically grammatical type have to do with the development of a specific dialect or language system. Language here means a thing or set of things. The origins sought comprise the genesis of the linguistic impedimenta of a particular social or dialectal group. Such an investigation parallels the study of the other civilizational entities of a group, its tools or techniques, objects of art, ceremonials or civic organization. Historical grammar is there-

fore concerned with sound and meaning changes and the variations of daughter languages from their linguistic ancestors. As a result, it plainly differs from psychological grammar in that no study is made of the linguistic adjustments of unique individuals.

The only genuine and justifiable psychological investigation of linguistic origins concerns the individual's development of behavior patterns, which operate in the performance of linguistic adjustments. Thus the psychological linguist contrasts the development of specific forms of personal adjustment with the evolution of an idiom or dialect over some period of time. Psychological grammar does not go in for the study of etymology or the variations and divergences of various speech patterns.

There is still another way in which psychological grammar can be differentiated from conventional grammar with respect to origin problems. While every detailed phenomenon in the etymological domain is inevitably a product of a definite evolution, the specific pattern of any individual linguistic adjustment may originate at a particular moment and in direct dependence upon nothing more than the immediate situation in which the adjustment is performed. In this sense actual human speech is a creative activity, which, like the flash of a meteor, exists only for a brief part of a second.

EXPLANATORY GRAMMAR

Explanation in Conventional Grammar—It is only to be expected that conventional and psychological grammar will differ in both material and method of explanation. Conventional grammar, dealing as it does with things, collects instances of word-forms and syntactic organization as the observational side of its scientific technique, and then proceeds to discover conditions or causes for such phenomena. To take an illustration from Sweet (NEG 2), Why does the word *go* have for its preterit—*went* as over against most verbs like *call*—*called*? To explain this fact the grammarians insist we must resort to history, where we find that *went* was originally the preterit of a verb *to wend*. "The historical explanation of the word *to go* is therefore that it was originally the preterit of another verb of similar meaning." When the historical facts do not yield an explanation Sweet says we must look to comparative or general grammar. There one might find an evidence of borrowing or the simple process of divergence.

Now even when the conventional grammarian turns to language as utterance he still treats language as a static, general phenomenon, different from immediate referential adjustments.

It is hardly necessary to enter into a general criticism of the prevalent conception of explanation in the linguistic field. We must do so nevertheless, since we believe it is not generally in accordance with scientific method. We regard scientific explanation to be merely an analysis of the factors in a situation and a statement of how they are interrelated. When language phenomena are handled as isolated things this method of explanation is hardly workable.

An instance of the contrast between scientific and conventional grammatical explanation is found in Jespersen's (PG 187) criticism of Deutschbein (SNS 269), who explains the use of the Saxon genitive in English expressions of time on the basis of the great time sensitivity of the English people. Also, Deutschbein (*ibid*) accounts for the use of the accusative with the verb *to help*, as compared with the dative in the corresponding German verb, on the basis of the dynamic character of the English people. Again, Von der Gabelentz⁴ explains all linguistic changes as errors on the part of younger speakers in repeating what older people say. Instructive in this connection are the elaborate explanations of syntax by Havers (ES) in the form of driving forces, such as striving for emotional relief, energy saving, beauty of expression, etc.

Explanation in Psychological Grammar—Since the psychologist deals with grammar as the science of actual speech adjustments, his explanatory method is necessarily different. First, the question is in order: What does he try to explain? As we have so often reiterated, this cannot be anything else than specific reference activities of persons. This means that the psychological grammarian attempts to account for specific modes of sound, vocabulary, and syntactic patterns of linguistic response. This individual pronounces English *that* as though it were *dat* or *zat*; another uses slang; still another puts English words into German syntactic patterns; while a fourth clips his words or otherwise varies from others in his performances. Note, however, that while the psychological grammarian is always concerned with activities of persons, he is also interested in collectivities of individuals or groups. He accounts for such

⁴ "Wir müssen uns daran erinnern, dass jede Neuerung ursprünglich ein Fehler ist." Die Sprachwissenschaft. 258.

facts as he observes on the basis of the individual's linguistic development and the specific circumstances under which he performs his language responses.

APPLICATION OF THE DISTINCTION BETWEEN GRAMMAR

The scientist labors under a double responsibility. Not only must his product be intellectually palatable, but it must also yield profitable returns. A scientific hypothesis must not only be valid in the sense of being congruent with the things or events from which it is drawn, but it must be fruitful in its applications. Accordingly the test of the validity of a scientific hypothesis lies precisely in its capacity to shed light upon the facts from which it is derived. The question is in order, then, whether the distinction between psychological and grammatical language is serviceable in the study of linguistic problems.

There is a value immediately suggested in the fact that psychological grammar focuses upon actual language behavior instead of paper language, as Havers calls ordinary linguistic materials. In addition, as far as the study of a language is concerned, there is a distinct advantage in stressing the actual acquisition of responses of speaking and reading. Language study differs at many points from the study of, say, astronomy. Astronomical phenomena can only be known as things set over against the student. Not so in the case of language. Here the observer is not merely achieving an acquaintance with an object, but attempting to assimilate for himself a set of behavior characteristics—that is, his task is to become in his behavior like the speakers of the language he is studying. Here psychological grammar not only paves the way for a rational method of knowledge, but also for an adequate technique of action as well.

CHAPTER IV
THE LINGUIST'S OPPOSITION
TO PSYCHOLOGY

THE historical relations between the linguist and the psychologist display a mighty paradox. Doubtless all students of language agree that the linguist and psychologist must meet at some common point. Still, an uncrossable chasm has always separated the two.

Speech, all scholars admit, constitutes activity. Now since the study of all kinds of human action is precisely the province of psychology, it must of course include language behavior. And yet some linguists ruthlessly expel psychology from the linguistic Eden. Their attitude ranges from a general indifference toward psychology as of no value to a positive disdain of it as a most pernicious influence.

EARLY LINGUISTIC OPPOSITION TO PSYCHOLOGY

The conflict between the linguist and the psychologist began in the very earliest dawn of linguistic science. Turn back the pages of history to the early decades of the nineteenth century. Recall the tremendous Romantic stirrings which quickened humanistic studies. Soon after W. Jones (1746-1794), H. T. Colebrook (1765-1837), and others introduced their Sanskrit studies to European scholars, the members of the Romantic school of Germany seized upon these contributions as fuel to feed the fires of their scholastic zeal.

As we know, when modern language studies began, the first and most exciting interest was in the question of the origin of language. Now it was precisely these Sanskrit studies that promised a clue to the answer. No sooner did Jones begin his inquiries than he noticed the similarity of Sanskrit to European languages. Benfey (GS 348) quotes him as follows:

The Sanscrit language, whatever may be its antiquity, is of a wonderful structure; more perfect than the Greek, more copious than the Latin, and more exquisitely refined than either; yet bearing to both of them a stronger affinity, both in the roots of the verbs and in the forms of grammar, than could have been produced by accident; so strong that no philologist could examine all the three without believing them to have sprung

from some common source which, perhaps, no longer exists. There is a similar reason, though not quite so forcible, for supposing that both the Gothic and Celtic, though blended with a different idiom, had the same origin with the Sanscrit.

Since the Romantic thinkers were deeply concerned with the inner life, it was of course a settled matter that all humanistic phenomena were at bottom psychic. They were therefore profoundly imbued with the conviction that, on the one hand, linguistic research would reveal the nature of the souls of peoples, and, on the other, that the study of the interrelations of Folk Souls would explain the origin and relationship of different languages. For it is the souls of people that are manifested in language, myth, custom, and religion. Language in general, then, is a manifestation of man's general spiritual nature, while specific languages are derived from particular group minds which are precipitated out of the original psychic sources.

Manifestly the ideas of the great leaders in this movement (for example, the brothers Schlegel, W. von Humboldt, and the brothers Grimm) were very vague. What did they mean by the soul of a people? Some sort of metaphysical notion no doubt. This is illustrated by the statement of J. Grimm (1785-1863) to the effect that the linguistic spirit (*Sprachgeist*) regulates various phenomena of sound shifting (JL 45). Their views, howsoever important in linguistic studies, were of slight value in the description and explanation of language as it actually is.

A decided reaction to such vague psychologizing soon became the order of the day. With the rapid development of linguistics heralded by the monumental works of Bopp (1791-1867), Pott (1802-1887), and others on the comparative aspects of grammar, a movement arose to establish the study of language upon a more objective basis. Because of the great developments in organic chemistry and biology at this time, the conceptions of organic life became intensely appealing. The question arose then, What kind of scientific connections would the linguist cultivate? Should linguistic phenomena be regarded as psychological (humanistic) or organic?

Many linguists naturally remained loyal to psychology. But a very striking movement inclined toward the organic. This movement to make language independent of psychology was summed up by Schleicher. For him languages were:

Natural organisms, which arose quite independently of the human will, developed according to definite laws, matured, then aged and died;

they possess that succession of phenomena which is usually termed "life." "Glottic," the science of language, is therefore a natural science; its method is, on the whole and in general, the same as that of the other natural sciences (quoted from LSL 58).

What energized this ideology was the observation that language was not something which depended upon an individual mind, and that psychology did. How can one reconcile, it was asked, the observation that one acquires an existing language when one learns to speak, with the notion that language depends upon psychological phenomena—upon the mind of the individual? Besides, such vague generalizations about the soul as we have indicated did not suggest that psychology was a promising foundation for the new science of linguistics. At best, psychology could only say what went on in the person's mind. This was the period of Faculty psychology. The mind might be regarded as capable of producing conversation, but not of developing language systems.

SCIENTIFIC PSYCHOLOGY ENTERS THE LINGUISTIC FIELD

Granted that man always acquires an existing language, and that language is somehow independent of individuals, how escape the fact that whenever a person speaks he is performing individual psychological actions? It is here that Steinthal appears upon the scene, bringing into the linguistic field a psychology claimed to be not only scientific, but also exceedingly potent in the handling of linguistic problems.

Steinthal is a Herbartian. And Herbart, be it recalled, attempts to bring psychology into the general naturalistic movement and to make it scientific. First he attacks the entire psychological conception of Faculties. The human mind according to Herbart may be a single and undifferentiated whole, but after all it operates upon a system of statics and dynamics. As far as observable phenomena go, the mind consists entirely of collections of mental states or processes which become the mind in the complex mechanical manner indicated. Moreover, these states combine into ideas with such orderliness and regularity that psychological phenomena can be made amenable to mathematical calculations. For Herbart the operation of states of mind—that is, ideas—can be studied with the same objectivity and certainty of results as any operation in the physical sciences.

It is this viewpoint that Steinthal projects into the field of linguistics.

Language certainly is not a phenomenon of the individual, but it is none the less psychological. Thus Steinthal in collaboration with Lazarus develops what he thinks is a satisfactory conception of a superindividual mind or *Volkgeist*. This is the answer he makes to those who would reject psychology from linguistics because linguistic phenomena are superindividual. He believes that social mentality, though it is not like the individual mind securely connected with the body and therefore founded upon a substantial basis, is none the less real. Steinthal expands the Herbartian idea of the individual mind, consisting of interactions of specific ideas, into a superindividual mind resulting from interactions between individual minds. This is essentially an effort to make scientific the soul of a people.

PAUL VERSUS STEINTHAL

In the next act of the linguistic drama another linguist, Paul (PS), appears on the stage and utterly repudiates the new psychological construction. In effect, he attempts once more to free linguistics from the shackles of psychology, but this time in the interest of history, not biology. As a faithful disciple of Herbart, Paul believes that mind must be distinctly individual. If there is no substratum in which the group mind can exist as does the individual mind, there can be no such mind. This linguist therefore objects vigorously to Steinthal's extension of Herbartian psychology.

Paul then takes the absolute stand that psychology has a decidedly limited connection with philology. He insists that only the individual activity of speaking has anything to do with psychology. The history and development of language cannot be connected at all with psychological phenomena, since language belongs to the province of the historical and general social sciences. The net gain for psychology in the field of linguistics is therefore nil.

What must the observer conclude from this succession of proposals and counter proposals which result in no satisfactory coördination of linguistics and psychology? Where shall we look for the trouble? The answer is supplied by Wundt. The difficulty is, he believes, that an entirely wrong conception of psychology is being employed.

WUNDT VERSUS THE HERBARTIANS

Wundt is thoroughly dissatisfied with this subordination of psychology. For him it is inconceivable that psychology should be merely an adjunct to philology and not its fundamental basis. Nothing less will do than to make language in all its phases the product of psychological processes. Since it is the current espousal by Paul and other scholars of the Herbartian psychology that is at the root of all the trouble, Wundt brings to bear his heaviest intellectual artillery in order to demolish it.

What is the primary difficulty of Herbartian psychology? Chiefly it is intellectual and static. Herbart regards states of mind as fundamentally cognitive. Feelings and willings are merely the results of conflicts between cognitive ideas, in so far as they prevent each other from passing the threshold from the subconscious to the conscious. Accordingly such a psychology must be remote from the field of actual human activity.

On the other hand, there is no way in which any evolution or change can be introduced into these ideas. The whole Herbartian psychology consists of the arrangement and rearrangement of these ideas to form new apperceptive masses. It is small wonder then, thinks Wundt, that such a psychology cannot be employed to explain the development of any kind of civilizational fact such as language. But, according to Wundt, nothing could be worse than the Herbartian type of psychology.

Wundt's attack upon Herbart and Paul receives its impetus from a new way of thinking which has been dominating scientists since the advent of Darwinian evolution.¹ By utilizing an evolutionary theory Wundt believes he can show that all human phenomena such as law, myth, social organization, as well as language, are in origin completely psychological.

Wundt's position may be briefly summarized as follows: Human life with all its civilizational accoutrements is merely a highly developed stage in the general scheme of evolution. From inorganic substances are evolved the lower organisms as the forerunners of higher organisms. The evolutionary process results finally in the development of man. As a good evolutionist Wundt believes that the human mind in all its complexity is developed from animal mind. Social organization, law, etc., are the natural results of mental evolution. For Wundt, mind consists of events that are thoroughly and in-

¹The reader will notice how evolution is utilized to make language both organic (Schleicher *et al.*) and psychic (Wundt).

evitably correlated with biological phenomena. Recall how much he has done to foster physiological psychology.

As far as language is concerned, human speech arises from animal cries (S) which are expressions of inner psychic states. In man, the articulate sounds develop as movements or activities which are originally feeling expressions. The general evolution takes place as follows: First, expressive movements result from the externalization of intense feelings. Next, the quality of feelings becomes expressed. Then, gestures of various types express highly developed feelings and to a certain extent ideas. Finally, vocal actions are made to express complex ideas of all sorts.

It appears, however, that this hypothesis, even when accepted in its totality, accounts only for the presence of vocalizing activities in speech. It does not go beyond vocal behavior to specific language patterns. To account for the existence of complex cultural linguistic systems Wundt resorts to the group mind conception of Steinthal and Lazarus. Languages develop in the behavior interrelations of persons.

DELBRÜCK CRITICIZES WUNDT

It is the eminent linguist Delbrück (GSF) who places Wundt's psychology in the series of rejected viewpoints. This scholar refuses to accept Wundt's two giant tomes on language at their face value. As a matter of fact, after studying the psychological foundations as supplied both by the Herbartians and Wundt, Delbrück comes to the conclusion that as far as the science of language is concerned it makes no difference whether Herbart's or Wundt's system is accepted. He writes: "Man sieht; für den Praktiker lässt sich mit beiden Theorieen leben" (GSF 44). Not that Delbrück denies certain decided superiorities in the Wundtian over the Herbartian psychology, but for the linguist he believes the Wundtian psychology offers no advantage in understanding and explaining linguistic phenomena.

It is hardly unfair to say that after all what Wundt does is merely to take the conventional linguistic materials and add psychological explanations to them. Even if the linguist accepts the Wundtian theory of the origin of language he must regard that as after all a minor problem. What is more important are the handling of specific language problems such as the explanation of linguistic change, the nature of a sentence, and other similar phenomena.

How did Wundt handle these subjects? Linguistic changes as formulated in the so-called Grimm's law he explained by the increase of the rapidity of speech during the period of those changes. But Delbrück (GSF 102 ff.) not only disputes the hypothesis, but denies the facts. Delbrück quotes Wundt's statement that "when we articulate rapidly we say *ap, at, ak*, instead of *ab, ad, ag*, and *spa, sta, ska*, instead of *sba, sda, sga*." But he adds that these changes are only instances of a large number of changes, some of which are in an opposite direction.²

As to the nature of a sentence, Wundt defines this grammatical element as the spoken expression for voluntary logical organization of the parts of a total idea. To this Delbrück objected on the ground of vocative and interjectional speech. Vocatives and interjections, Delbrück (GSF 145) declares, are complete expressions and are thus, howsoever unorganized, still sentences.

It may be added that Wundt's analytic definition is hardly descriptive, for it is doubtful whether there is any voluntary organization of expression,³ unless all habitual action is voluntary. Moreover, this definition of a sentence is not different from those generally offered by philologists who are not psychologists. All such definitions are merely statements derived from popular psychology.

Delbrück makes similar objections to the application of Wundt's psychology to other linguistic problems, such as semantic change and case classification. Not that Delbrück denies the genuine value of psychology in linguistics. But the fact that Wundt himself is so convinced of the superiority of his own system makes of Delbrück's equating of the Herbartian and Wundtian psychologies a rejection of psychology altogether.

In defense of his psychology Wundt falls back upon the assertion that Delbrück should not judge it merely upon its serviceability to philologists, but rather upon its truth as a psychological system. But this is surely yielding every point. We can hardly blame the linguists for rejecting psychology if it can offer them nothing more than Wundt's psychology does. No more serious stricture could be placed upon a scientific work than Jespersen places on Wundt's great treatise when he says that it seems to him "often richer in words than in fertilizing ideas" (JL 98).

² Among other critics of Wundt's theory are Oertel (LSL 200) and Jespersen (JL 258).

³ We shall later point out the objection to the conception of expressions, p. 58.

The bystander must admit that Wundt's specific explanations of linguistic phenomena are often not peculiar to his type of psychology. For example, his explanation of sound change in so far as it is an attempt to account for complex social phenomena by specific psychological behavior (speech acceleration) is really not distinctively Wundtian. In this connection we may be reminded of the ideas of the Danish linguist Bredsdorff, published in 1821. The latter explains linguistic changes by the following:

(1) Mishearing and misunderstanding; (2) misrecollection; (3) imperfection of organs; (4) indolence; to this he inclines to refer nine-tenths of all those changes in the pronunciation of a language that are not due to foreign influences; (5) tendency towards analogy; here he gives instances from the speech of children and explains by analogy such phenomena as the extension of *s* to all genitives, etc.; (6) the desire to be distinct; (7) the need of expressing new ideas (quoted from JL 70).

OTHER LINGUISTS REJECT PSYCHOLOGY

In more recent years linguists have repeatedly indicated their misprizing of psychology. The reasons vary. Sometimes, as in the case of Gardiner, because psychology is concerned with "subjective states, observed or inferred" (GSL 7), and again because of a reaffirmation of Delbrück's belief that it is indifferent what system of psychology a linguist accepts.⁴ Still another rejection is based upon no sounder principle than that for purposes of syntax study one can be satisfied simply with words and their meaning relation to the things for which they stand—that is, the sufficiency of symbolic relations.⁵ In general, it is an understatement when Stern (MCM 15) says: "Many philologists entertain an insuperable distrust of psychological theories as applied to the phenomena of language."

A typical instance is that of Vendreyes. Linguistics for him is far removed from psychology. "The conditions of cerebral activity," he writes, "which are the main business of the psychologist, remain outside the field of the linguist" (VL 66). This view is no doubt completely justified. The psychologist who discusses language as a rule reduces his material to physiological activities—the operation of the lips, tongue, vocal chords, etc. Thus, when the linguist applies to the psychologist for help he is told about synapses and the general operation of neurones

⁴ Bloomfield, *A Set of Postulates for a Science of Language*, *Language*, 1926, 2, 153.

⁵ Cf. Porzig, *Aufgaben der indogermanischen Syntax*, in *Stand und Aufgaben der Sprachwissenschaft (Streitberg Festschrift)*, (Heidelberg), Winter, 1924, 126-161.

(cf. MPL). No language behavior or any other can go on, of course, without neural action. There is no doubt either that language can be reduced to sound, or the operation of the *organs of speech*, but the question is: How much does such a process enlighten us concerning exceedingly complex language phenomena? It must be admitted that either a different sort of psychological conception is necessary for linguistics, or psychology can be of little use.

Vossler's repudiation of psychology is interesting in that he declares that linguists can receive nothing from the psychologist (Wundtian). In fact it is the other way around; psychologists can learn from linguists, but not vice versa. He writes:

Wir glauben gerne, dass die heutige Psychologie sich reiches Material und vielfache Belehrung aus der Sprache und vielleicht auch aus der Wissenschaft von der Sprache entnehmen kann. Aber, wenn sie schon bei uns betteln geht, so soll sie sich nicht den Anschein geben, als schenkte sie uns etwas oder als stände sie im Tauschhandel mit uns.*

HOCART AGAINST STOUT

Hocart, the anthropological linguist, trains his guns upon the psychological citadel for a different form of destruction. This writer attacks psychology for maintaining that language is an index of psychic capacity.⁷ Observing how psychologists misinterpret the mentality of people because of their speech, he concludes that language is not psychological at all, but rather sociological. Hocart takes as his point of departure the psychological writings of Stout. Now for Stout, language consists of signs for the objectification or expression of thoughts or inner mental processes. He therefore asserts (AP 229) that "power to express grammatical form depends upon power to express abstract relations in general." Thus when he learns that a certain primitive language has no word for *tree*, but a word each for *gum-tree*, *wattle-tree*, etc., he accepts this fact as *prima facie* evidence of "an incapacity for clearly apprehending identity in difference" (AP 231). In other words, those who speak the language are mentally deficient; they lack the capacity of abstract thought.

Accordingly, Hocart is deeply impressed with the impotence of psychology to handle language problems, and goes on to show that the above linguistic fact is directly conditioned by social

* Sprache als Schöpfung und Entwicklung, (Heidelberg), Winter, 1905, 23.

⁷ The Psychological Interpretation of Language, *British Journal of Psychology*, 1912-13, 5, 267-279.

circumstances. Why should a group have nine words for various ages and aspects of coconuts and no general name coconut? Obviously, he says, it is precisely because the specific facts of coconuts give them a place in their civilization. The social life of people rather than their mentality determines their language.

Moreover, this writer demonstrates that there are many instances in which the tables are turned. European languages have many more specific terms for certain objects than have primitive languages. The speakers of these languages need such terms. "A motor is in town if it is *in* the road and in the country if it is *on* the road." But this implies a motor and a road. Otherwise, one of the two expressions would be of no use.

Hocart is right. It is certainly impossible to draw much conclusion about the mind from the facts of language. Upon such a basis as he uses Stout might surmise that the Germans are superior to the French because of the three-gender language of the former and the two-gender language of the latter. But it may be a mistake to draw conclusions about the nature of psychology and its competency in studying language from Stout's particular psychology. The latter need not be regarded as acceptable to psychologists. Indeed, modern objective psychology may look upon language in a very different way.

One more suggestion. Hocart's criticism is so apt and telling because he agrees with Stout that psychology deals with the forces and powers determining human phenomena. It is only because he finds these powers wanting in this linguistic situation that he extrudes psychology from linguistics. But should we expect a sociological phenomenon to be explained by a psychological process? As we have pointed out in Chapter II, the psychologist cannot, by himself, settle problems outside his domain; if he attempts to do so he inevitably multiplies errors.

THE PSYCHOLINGUISTIC SITUATION ANALYZED

Despite the unfortunate contacts between psychology and linguistics, they must nevertheless coöperate in their language studies. We conclude therefore that what is required is a re-examination of our concepts of both psychology and linguistics.

In the first place, we must give up the idea that psychology is only an explanatory medium for conventional linguistic data. Perhaps it is because psychology has been regarded as the guardian of principles governing speech rather than as a disci-

pline engaged in the study of essential aspects of speech that it has been found to be so dispensable by linguists.

We propose, then, that in our revision of the relationship between linguistics and psychology we regard the latter as fundamentally concerned with the description of language phenomena. Language must be studied both as actual psychological happenings and as social and historical phenomena.

So much for description. Explanations of linguistic happenings must likewise be made in terms of general humanistic conditions as well as of psychological events. As we have already indicated (Preface), the psychologist will always be able to cooperate much more with the linguist in studying living language in which humanistic conditions and psychological events are intermingled than in purely historical materials or language records.

In the second place, on the side of linguistics we must give up the idea that it deals exclusively with the crystallized materials of transcribed thing-language. It is doubtful whether there can be a general linguistic behavior of speakers and those spoken to. When we consider language changes, for example, as orderly and fixed phenomena, we are not dealing with actual language happenings, but merely with artifacts. Linguistics must at least take account of the existence of numerous specific variations in the way individuals pronounce their utterances. It is only when linguistic phenomena are looked upon as concrete speech behavior that psychology can help in description and analysis.

And finally, it is much more than a haunting suspicion that the term psychology, as used by all the proponents and opponents in the conflicts we have been reviewing, has referred to something else than a workable concrete science. The outstanding difficulties in the psychological conceptions hitherto used by linguists will be treated in the next chapter.

CHAPTER V
PSYCHOLOGICAL MISCONCEPTIONS
IN LINGUISTICS

MENTALISTIC PSYCHOLOGY GIVES RISE TO
TWO LINGUISTIC MISCONCEPTIONS

THE disservice that mentalistic psychology has rendered linguistics we have already pointed out in the first chapter. So long therefore as the linguist is concerned with psychic states—that is, intangible and unknowable processes—he will be unable to avoid various linguistic misconceptions. In the present chapter we examine briefly the mentalistic viewpoint and the misconceptions arising from it.

Traditional psychology has always harbored the conception that in a psychological phenomenon two absolutely different and incongruous types of events occur. On the one hand, there is the observable movement or performance of an individual—for example, in speech, the motions of tongue, lips, and diaphragm—and on the other, an intangible and invisible psychic process. The latter is variously conceived of as a thought, feeling, or a desire. The psychic element is presumed to cause the bodily action or to be caused by it, or both are presumed merely to occur side by side.

No severer criticism can be made of this conception than that absolutely no observation of this psychic factor is possible, nor is there any explanation of how such an element could be connected with the observable activities of individuals. Obviously, this conception is not derived from any kind of scientific observation, but rather represents a theory of mind and body which has seeped into psychology from an infected source of traditional thinking.

Specifically this subjectivistic conception has given rise to two faulty viewpoints concerning language. The first, the translation or expression theory, regards speech as a translation of psychic materials into verbal action, generally stated as the expression of thoughts in words. The second regards linguistic phenomena as symbols or signs, either for ideas in the mind or for things mediated by a mind. Both of these conceptions which preclude the study of language as living activity (ways in which

persons and perhaps animals adjust themselves to their surroundings) require critical examination.

THE TRANSLATION OR EXPRESSION THEORY

When A says to B, *I love you*, these word actions are supposed to be the expression or bodily manifestation of some psychic process in the mind of the speaker. Speech is presumed to begin with a mental process—an idea, feeling, or desire in the mind of A. Somehow this psychic material is transmitted to the motor nerves that control A's speech organs. The motor processes with their phonic products constitute the means of conveying the idea or desire to B. This communicating, conveying, or arousing of mental processes, however, is not completed until the sound is conveyed to B's mind where the auditory perceptions are translated into the appropriate and intended ideas. What an unsavory mixture of *psychic* and *bodily, mental* and *physical*! But this sort of thing need no longer be accepted as psychology.

Consider carefully the expression proposition. A psychic state of the mind is expressed or transformed into bodily action. Where is this mind different from or connected with the body? Our conclusion is that this mind is nothing but a word or figure of speech, which offers no help in understanding psychological phenomena.

What the proponents of the translation theory call a mental or psychic element is, on the contrary, a non-linguistic action or event connected with speech behavior. I see a flower that delights me. I tell someone of my delight. Why call that act (whether a feeling, thought, intention, or desire) which precedes a language action, psychic? Is it unfair to say that when I tell you of my delight I no more translate my feeling action into words than I translate (transmute) a diamond into words or other actions when I say *That stone is a diamond*. The alternative to the expression or translation theory, of course, is to describe the language act as a reference to the feeling act.

Doubtless one basis for the expression theory is the fact that the feeling, desire, or thought action referred to is subtle and inapparent, whereas the vocal-sound action is crude. Does subtlety of action mean psychic? Why should articulate vocal action be regarded as physical or bodily, while subvocal action, such as we perform in doing so-called mental arithmetic, is designated as psychic?

Is anything that the person does, whether it be thinking,

feeling, or speaking, other than an adjustmental performance? Whether his actions are subtle or crude, the principle is the same. In each instance the person is making a response to a stimulus—that is to say, interacting with an object.

Another basis for the translation theory is the need felt for something to guide the action of the tongue, lips, etc. We may sympathize with this need. But surely the operation of the vocal organs does not cover the whole action of speaking. There is in addition the fact of having something to say. Even so, there is no place for a psychic something nor any necessity for postulating it.

Any observable speech action is really guided by the situation in which the speech occurs. First, there are the stimuli. What I say is determined primarily by what I have to speak of. Then there is the person to whom I speak, who as a stimulus also conditions my response. Consider that much of our speaking consists of answering questions about things or events. Is it not clear that the questions condition what the answers will be? The person spoken to influences the language reaction in another way also. For example, what I say about an object depends to a great extent upon what kind of person I am talking to, how intimate I am with him, and how natural I dare be in his presence.

Then there are the cultural factors. Each person belongs to a definite ethnic unit possessing a specific kind of language system. Thus a part of every individual's human development is the acquisition of specific modes of adapting himself linguistically. This acquisition is definitely on a par with the taking on of manners and customs, so well known and understood. Learning to speak thus inevitably constitutes the development of specific speech forms, the use of a particular vocabulary, grammar, idiom, etc. No doubt in the translation theory it is these social and cultural factors that have been unnecessarily converted into psychic guides of bodily action.

THE SYMBOLIC THEORY OF LANGUAGE

A definite outgrowth of the expression doctrine is the symbolic theory of language. Briefly, this is the view that language consists of signs or symbols that stand for either ideas or things, or perhaps both. Linguistic phenomena are made into things or forms signifying something beyond themselves. Manifestly we have here the fullest consequence of the erroneous procedure that bases linguistic science upon printed documents. It is this

misguiding symbol theory which has so effectually masked the true character of language as adjustmental phenomena. We are obliged, therefore, to consider it rather fully in order to bring to light the differences between symbolism and language.

SYMBOLISM A RELATIONSHIP OF FIXED TERMS

What is a symbol? Even if it is an action, a symbol is a definite thing which bears a fixed relation to some other definite thing.¹ In a vector relation the symbol is called a sign or signifier and it is said to *signify*, *stand for*, or *mean* the related object, the significant. The vectoral type of relation may be illustrated by so-called natural symbols, as when we regard thunder as a sign for lightning, or by contrived symbols, for instance, mathematical characters, 5, π , and $\sqrt{2}$. When the symbolic relation is a non-vectoral one, the signifier may be taken as the significant, and vice versa. Symbolic relations may, of course, be triadic as well as dyadic. An example is the psychologist's use of both the Greek letter σ and the word *millisecond* as signs for a thousandth of a second. Here, too, a fixed association must be established between the terms. We may speak of this relationship, once it is established, as internal or indigenous to the terms.

LANGUAGE ADJUSTMENTS AUTONOMOUS

It is nothing short of amazing that living language is confused with the series of term-things constituting a symbolic situation. In view of our discussion in Chapter II it is hardly necessary to argue that genuine language responses are not such fixed entities, implying or standing for other things. When the prisoner utters the simple word *no*, or turns his head when asked if he is guilty of charges read from the indictment, should we say that either of these alternative actions is a symbol for innocence, guiltlessness, or eagerness to escape conviction? Do such fluid phenomena as psychological actions answer to a valid conception of symbols?²

We have here an unwitting confusion of a person's linguistic behavior with its spurious-language transcription. It is quite true that when we write down what A has said, we may regard our transcribed materials as cold symbols for A's actual speech

¹"One symbol stands for one and only one referent." This is the first of six canons of symbolism which Ogden and Richards set up in their excellent discussion of this subject (MM 187). Notice, however, that these writers overlook multiplex symbol situations.

²Undoubtedly there are momentary symbols (actions) and symbol situations, but need we confuse these with linguistic behavior?

behavior, but this provides us with no warrant to think of his language adjustments as symbolic material.

STATIC SYMBOLS AND DYNAMIC LANGUAGE

The most elementary comparison of a language adjustment and a symbolic situation is quite sufficient to convince us how remote the one is from the other. This great variation is true not only for complex conversation, but for simple word responses also.

In the case of genuine language neither the reference nor the referent is fixed in the sense that both the sign and significant of a symbolic relationship should be. Word forms are not fixed. The same form can serve different purposes (*fast-swift, fast-immoral, fast-abstain*) and different forms the same purpose (*go away, move on*).³ Moreover, when the same form serves the same purpose there may be great phonetic and other variations in the activity. What percentage of persons within a given language group persists in saying *playing, going*, instead of *playin' and goin'*? Does not this fact differentiate between symbolization and language?

Referents are also not fixed in language situations. The word *mother*, when uttered by a child, may refer to, and only to, a specific person. On the other hand, the word may refer to no specific individual, but to a parental relationship or to something that the child may want the mother to bring. Can it be denied that we have here a very different kind of situation from the authentic symbolic circumstance? It would seem then that the term *symbol* is very arbitrarily applied to a language event. Certainly it is used with very little regard for exactitude. The point, of course, is that as a language adjustment any word or any kind of action may serve in a particular instance as a psychological language response.

Then, too, when spoken words are under consideration their very identity depends upon unstable circumstances. Words constitute entirely different adjustments when they are differently stressed, accented, and intoned. The specific characteristics of word actions are consequently lent to them by the particular adjustmental circumstances under which they occur. To say the least, in such situations it is exceedingly difficult to locate symbols.

³ The argument that a word has only one meaning in a sentence or in actual use suggests at once that we are moving toward an altogether different phenomenon from word-symbols.

We turn next to non-verbal adjustments. What about mute language? And, in general, gestures of all sorts? Is it possible to regard such phenomena as symbols? If we do so, no doubt we merely call everything that happens in the way of speech a symbolic phenomenon. Reflection, however, indicates the extreme difference between symbols and symbol making, and the intimate behavior adjustments that constitute genuine language.

This divergence can be illustrated in other ways also. Take, for example, the different reference actions to the same event, say a friend's arrival. *He will be here, Tomorrow he comes, Soon we shall see him, Presently, It won't be long*, etc. Here one would have to say there are many indifferent signifiers for one significant. A rare kind of symbolic relationship!

Again, as everyone knows, in actual conversational speech much may be and is left unsaid. The hearer begins to speak, and to the point, before the speaker has finished his sentence. Are these missing members in any sense symbols? We hazard the suggestion that the symbolic conception here is based upon the notion that each word stands for something. If this is the case, the circumstance of good conversation with partial or truncated actions is a pitfall to the symbolic theory. This is true even if it be argued that in the case of unspoken speech the listener understood without being referred to something. For that situation plainly demonstrates that language adjustments need not be symbolic.

A final suggestion. There are many circumstances in which a person says, *Now I pull this lever*, while the other person sees him doing it. Why a symbol, when there is nothing for it to stand for? This speech of the performer is typical of language action when it is one of two adjustments that are performed at the same time (see p. 73).

SPEECH AS STIMULUS

We may now assume perhaps that a linguistic adjustment is clearly separated off from symbols. But the symbolic conception dies hard. From linguistic behavior as response we turn therefore to linguistic behavior as stimulus. And here we find that the confusion comes about because of a misinterpretation of what happens when the hearer reacts to speech behavior.

In the first place, scholars regard language as symbolic because words or phrases uttered by the speaker *mean* something to the listener, though it is clear that the words have really no

fixed status. They mean to the hearer what he understands by them, even though there must always be some common ground between the speaker and hearer. However, since the fixity characteristic of symbols is lacking, we can at most agree that the words or phrases suggest something. And so when the linguist thinks of his materials as symbols he apparently is using the term symbol for whatever the speaker says. In other words, the term symbol is made to do duty for everything the psychologist calls a stimulus.

Merely because someone knows what the speaker intends to say does not signify that what he says stands for something. Does speaking consist of setting up symbols for the hearer? That this is not the case is suggested by the important linguistic fact that fixed language elements such as printed words are usually less efficacious and less certain than the more dynamic words of spoken language. We have already pointed out that a great discrepancy may exist between what the writer puts into his words and what the reader takes out of them. On the other hand, it is a rare circumstance that the words of a speaker fail to call out the intended response in the listener.⁴ And this is true even if the speaker is telling the hearer something entirely new.

What may we conclude from this fact? Not that language is symbolic. Rather, that the various conditions of a speech situation and the parts played therein by the speaker, hearer, and the things of which they speak are immensely important.

Why do speakers and hearers understand each other? Not because the language behavior contains within it meanings or stands for certain things. On the contrary, we find that the character and capacity of words and other actions are given to them because of the speech situation.⁵ Surely this reverses our ordinary conception of symbols. In the actual event, the activities of both the speaker and the listener constitute definite adjustmental acts to objects or things spoken of. What the words of the speaker mean or refer to is absolutely dependent upon what the present listener has previously said to the present speaker. When a person says *You rascal*, shall we believe

⁴ Providing, of course, that both speak a common idiom. If not, no one can argue for symbols either.

⁵ Potent, of course, are all the circumstances of developmental community between the participants in the speech situation. In this connection it is significant that the grammarian is led to the conclusion that "symbols or signs as well as their meanings depend to a great extent upon their function or functions" (Graff LL 87). Is not this a shift from symbol to behavior?

that those two words are symbols for some kind of thing or characteristic, or rather that what those words *mean* depends upon the situation or linguistic context in which they occur, since this includes what the other person has just now said?

Again, no doubt, the symbol conception appeals to linguists and psychologists because in many cases the thing spoken of is absent. Where is the need here to regard the words or phrases of the speaker as symbols for something rather than reference acts? As a matter of fact, what the speaker does is to stimulate the hearer to perform a reference response to an object that is absent or present. But here as everywhere else in objective psychology it is unnecessary to think of stimuli as symbols.⁶

SOURCES OF SYMBOLIC CONCEPTION

So strongly entrenched is the symbolic conception both in psychology and linguistics that it is worth our while to consider, in addition to the casual suggestions already made, some further possible reasons for this fact.

Confusion of Behavior and Things—An undoubtedly strong influence in making language into symbols is the confusion of behavior and things.

Words and Speech—That language is symbolic is unquestionably a conception derived from the study of isolated words. The assumption that language is symbolic is in a measure correct when it is applied to printed words, as found, for example, in the writings of scientific description. But even here there is room for doubt, since it is universally recognized that there is a great gap between what the reader reads and what the writer writes. When we come to non-scientific description the fixity of the words falls away in proportion.

Words are most clearly symbolic when used as names. One labels something with words rather than with some other sign, mark, or character. Word-name symbols are very like mathematical notations. No one, however, could mistake the process of symbolizing things for the very different activity of speech.

Are printed words always symbols? That even printed words need not be symbols is attested to by the plea of every careful writer that his words should be read as it was intended they should be. The writings of philosophers comprise as much

⁶On this point see Kantor, *Language as Behavior and as Symbolism*, *Journal of Philosophy*, 1929, 26, 150-159.

explanation of terminological difficulties as the use of a particular set of words. Bentley⁷ writes:

The use of non-symbolic language is . . . always accompanied by great difficulties of understanding. It is all very well to say that a clear thought should be capable of direct, simple, and clear expression. That is true, given an unambiguous medium of expression. Communication between men is two-sided. Each "word" is not merely what the writer intends it to be, but also what the reader "takes" it to be. In an ambiguous linguistic medium the key-words of communication are "taken" by various readers in various ways, and sometimes with such confusion that the various sets of implications, connections, and constructions of meaning may be even as numerous as the individual readers themselves.

In view of the circumstances to which Bentley refers, it is surely an error to ascribe the wrong reading of a text to mistaking symbols. When characters, signs, or words are essentially and necessarily mistaken they are not symbols.

Is it feasible to carry over the conception of symbols to collections of words? When we do so are we not straining the conception of symbols to the breaking point? Perhaps this is the reason why symbolologists have to struggle so hard to establish *symbolism* even in scientific writings. The influence of contexts upon words makes impossible the one or other fixed relation that is an essential characteristic of symbols. It is proper, therefore, to propose that even some linguistic things are not symbols.

Symbolic and Language Situations—The confusion of language adjustments and symbolic situations is another result of not differentiating between behavior and things. We have already discussed sufficiently the process of confounding a relationship of terms with the phenomenon in which a person adjusts himself by speaking to someone about something or hearing someone speak about something.

Symbolic Relations and Reactions to Them—The identification of language and symbols may be traced to a confusion of the symbolic relation as described above and the psychological response of an individual to such a symbolic relation. The response to a symbolic relation is not itself a symbolic phenomenon.

Symbolology may be regarded either as an autonomous discipline, or as a branch of logic, but not as a branch of psychology. It would be the same mistake to regard symbolology as a psychological discipline because it has been invented and culti-

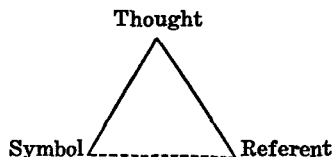
⁷ *Linguistic Analysis of Mathematics*, (Bloomington), Principia Press, 1933, p. 10.

vated by psychological reactions, as to call chemistry a psychological discipline for the same reason. Naturally, we can react to symbols as well as to chemical compounds. But in both cases the reactions are different from the thing that elicits them. To observe the difference is to distinguish between a symbolic relation and a reaction to it.

Those who symbolize language do not observe the distinction. First they substitute word-thing symbols for language; then they substitute the responses to the symbols for the other terms in the symbolic relationship. In this way a behavior event is made to serve as a bridge between language and symbols.

Mentalizing Events—But perhaps the most important basis for the confusion of language and symbols lies in expressive or mentalistic psychology.

Probably the best example of the mentalizing of events is afforded us by the work of Ogden and Richards. Despite the fact that a symbol and its referent constitute objective inter-related terms, these writers have made a triangular figure of the symbolic situation (MM 14). As the accompanying diagram indicates, they have inserted a thought or meaning factor between the symbol and its referent. The introduction of such a factor at once raises a series of questions. What does thought



or meaning mean, and how is this factor used? If we mean by it actual thought or reflection it is obvious that this might be part of what one does in some elaborate response of deciphering what a symbol stands for. But surely this activity is far from being an essential factor in symbol situations. On the other hand, if this factor consists of a psychic something aroused in the *mind* when in the presence of a symbol, then it is nothing at all and can only be used to confound one's thought. This sort of concept stands in violent contrast to any objective observation and prevents us from studying either symbols or language.

Confusion of Responses to Symbols and to Language—Our study has already revealed that when we react to printed words in a text (word collections) as though they were words heard

in conversation, the behavior is not a reaction to symbols. To a large extent our reading and writing consist of referential behavior. When the printer mistakenly inserts the words *comparative physiology* in a text, it is sometimes only an accident that the reader discovers the error, since his interest and attitude condition his reading it as *comparative philology*. It is precisely the mentalizing procedure that produces the confusion of responses to language activity—that is to say, heard speech as stimulus—with responses to symbols as stimuli. Both of these stimuli phenomena are wrongly made into symbols.

Confusion of Language Responses and Responses to Symbols—The same mentalistic basis leads to the confusion of speaking and hearing with responses to symbols. In language behavior a person adjusts himself either to (1) the thing spoken of and the person spoken to, or (2) the thing spoken of by the other person and his speech. As we have already seen, this is a dynamic situation called forth by the exigencies of an immediate circumstance.

In the case of symbols the response is an expected reaction based upon an acquaintance previously made with a fixed relationship between a symbol and what it symbolizes. Accordingly, a person is stimulated by a symbol to respond to the referent or vice versa. Here, too, the distinction is overlooked by transforming objective language adjustments into psychic states aroused by words, and by making symbolic reactions consist of psychic states intervening between a symbol and its referent.⁸

Confusion of Psychological Stimuli and Word-Symbols—And finally we may lay at the door of the mentalizing procedure the confusion of stimuli and word-symbols. Our discussion has already indicated that when we treat stimuli and word-symbols, or any symbols, as objective phenomena, we do not confuse objects which arouse psychological actions with symbols. Symbols are phenomena fixed in certain relationships, whereas stimulus objects are capable of calling out very different sorts of responses depending upon surrounding conditions.

LANGUAGE ADJUSTMENTS AND PURPOSE

It is only natural that the symbol-expression conception of linguistics should be subjected to various modifications. For example, considerable dissatisfaction has developed with the view that speech is merely the vehicle for the expression of

⁸ For further comparison of speech and symbol behavior see Chapter VI.

an individual's ideas or other mental states. Accordingly, a number of writers have attempted to revise the conventional language formula in order to stress the social character of language. Some regard speech as an instrument for carrying out individual purposes, while others stress its general social purposiveness.

The seeds for both of these modifications have already been developed in the early history of modern linguistics. As we have seen (Chap. V), the social character of speech has been strikingly affirmed by Steinthal and Lazarus, and reaffirmed in various ways by numerous writers since. Wundt's great work on language comprises the first two volumes of his *Völkerpsychologie*. The appreciation of the social aspects of speech constitutes the background for the various forms of linguistic purposiveness. However, a survey of both the older and more recent ideas concerning the social character of speech and the implied notion of purposiveness shows that the conceptions of mental-expression and symbolism have not been challenged by any one.

Individual Purposiveness—The writers in this group are not satisfied to regard speech as merely a means of expressing ideas, because they are unwilling to look upon speech phenomena as concerned merely with the individual speaker. They wish to include a listener. We need not consider this as anything more than a shift in emphasis, since surely all students of language assume a listener. For an explicit statement of this fact it is not necessary to go farther back than Wegener (UGS) or Marty (AGS). What is of interest for us is that these writers do not veer away from the expression conception. They merely stress the point that what is translated into words is purpose rather than an idea of a feeling.

As an example of this group we take Gardiner (GSL), who makes purpose the basis both for the existence and nature of an utterance. On the one hand, purpose is the essence of speech, since one of its fundamental functions is to influence a listener; and, on the other, it determines the character of an utterance, since the details of speech must be what is necessary to call attention to specific things.

It is clear that Gardiner merely uses the general term *purpose* for a psychic state. As we have indicated (Chap. I), this writer is in no sense interested in avoiding the mentalistic or expressive conception. Hence his interest in socializing

speech results only in stressing one type of subjectivistic or psychic state rather than another. "Note that I do not attempt to deny the thought-element in speech, but the emphasis of my definition does not lie in that element" (GSL 18). Incidentally, there is in his work no modification of the thing or symbol concept, since the speech elements always stand for things meant.

Purpose as Social Process—The second group of purposivists carry speech farther away from the individual than the first group. For them, speech is primarily an instrument for achieving social purposes; it becomes a powerful medium for social coöperation. Accordingly, this second group stresses the social origin and development of language.

For some of these scholars social purposiveness does not part company from individual mental expression; indeed the former is merely the basis for the latter. Among the members of this group may be mentioned Whitney (LGL), De Saussure (CLG), Bally (LV), Meillet (LHG), and Vendreyes (VL).

So far as expression goes, then, the members of our second group remain steadfast to the conception of psychic states which become expressed by means of word-signs. The social purpose of speech, as in the case of individual purpose, remains a conjoint descriptive element. Not only does such purposiveness add nothing to our understanding of the essential nature of language, but it may even serve to distort our view of what actually happens when one speaks.

Other members of this group, however, desire to minimize the expressive factor in speech and consequently stress the action or behavior of the speakers. Here we may refer to Dewey (EN), Mead,⁹ Weiss,¹⁰ and De Laguna (SFD). These writers emphasize to a considerable extent the function or purpose of language at the moment it occurs, though, like all the social purposivists, they find great scope for their ideas in the study of linguistic origins.

The net result of this movement to describe language as action is to add very little if anything to speech as a concrete linguistic adjustment. Since the great stress is upon social purposiveness and social origins, and not upon the actual adjustments of individuals, language becomes more and more a thing. Speech, accordingly, is transformed into behavior-things or sym-

⁹ A Behavioristic Account of the Significant Symbol, *Journal of Philosophy*, 1922, 19, 157-163; and elsewhere.

¹⁰ Linguistics and Psychology, *Language*, 1925, 1, 52-57; and elsewhere.

bols, or it is regarded as a process resulting in the making of symbols. It must be admitted that when the writers whom we are now discussing shift their viewpoint from the assertion that the purpose of language is to influence the mental states of other persons, as Marty holds, to the statement that it is the action of other people that is changed, they occupy a much better psychological position, but they do not add anything to the description of speech adjustments.

When we take speech behavior away from the field in which the individual adapts himself to immediate language circumstances, we leave the domain of psychology to go toward some social discipline. To regard speech as social action is to treat it as a historical or statistical phenomenon. This means we abstract from specific behavior configurations and actual speech situations. While such social behavior undoubtedly refers to some aspect of language, it does not give us a scientific statement of the essential nature of speech as a psychological phenomenon. It should be added here that the interest in what actual speech accomplishes from a social standpoint is quite legitimate. But the question arises whether this interest helps us to describe the essential characteristics of our data.

As we have indicated, one may describe the purpose or outcome of speech in many different ways. Speech is indulged in for purposes of play, as a substitute for action, to deceive people, to hide one's thought (Talleyrand), to conceal the fact that one has no thought (Kierkegaard), and for many other purposes. The term purpose, then, is an interpretation placed upon what the individual does when adapting himself to stimuli. We must insist, however, that it is the description of this adaptation which is the essential interest for the psychological student of language.

EXPRESSIVE PSYCHOLOGY AND SYMBOLISM

Despite the behavior wing of social purposivists, we regard it as demonstrated that expressive or mentalistic psychology is very closely tied up with the symbolic theory of language. Although the former seems at times to be merely a theory coordinate with the latter, it is really in many ways basic to it. Whichever way we look at their relation, there can be no question that mentalistic psychology with its confusion of language and symbols indicates a need for a more effective psychological viewpoint. Such a viewpoint, we hope, is to be found in organismic psychology, which we consider in the next chapter.

CHAPTER VI
SPEECH AS A PSYCHOLOGICAL
PHENOMENON

ORGANISMIC OR INTERACTIONAL PSYCHOLOGY

OBJECTIVE psychology studies the interactions of organisms with stimulating objects. These interactions are analyzable into an action of the organism on the one side and the action or operation of the stimulus object on the other. These are the two psychological variables which science demands as the minimum in the description of an event.¹

These two variables must be regarded as absolutely mutual functions. Whenever I interact with a stone by kicking it out of my path, that stone must be stimulating me to kick it. The stimulating action of the object we call its stimulus function.² The response or what the individual does may likewise be called a function of the organism.

The formula for a psychological phenomenon is therefore $S \longleftrightarrow R$. S stands for the stimulus function, and R for a response. The doubleheaded arrow symbolizes the interactional fact.³ The response may be a very simple configuration of action, such as jerking oneself away from a hot object, or going through all the acts necessary to start a car. In the latter case the response constitutes a complex pattern. The whole interaction may be called a behavior segment.

Behavior Segments are Built Up—Both the descriptive elements of a behavior segment or unit of psychological happening come into existence through a definite contact of the person and the object. The person builds up reactions or responses in the form of specific behavior configurations, touching, kicking, or throwing (a ball), while the object becomes a touchable, kickable, or throwable object. Later the presence of the ball stimulates one or another of these responses depending upon cer-

¹ For an exhaustive treatment of organismic psychology see Kantor (PP and SSP).

² For brevity the stimulus or stimulating function is usually referred to as a stimulus.

³ This formula, it must be noticed, represents an entirely different fact from the biological stimulus-response formula $S \longrightarrow R$ which signifies that some condition has put an organ into function.

tain definite conditions, presence of another person, the object being in the way, etc. According to organismic psychology, everything the person can do and everything the object can stimulate him to do are in this manner built up through definite behavior contacts or interactions.

The Reactional Biography—It follows then that the reactional biography is an important feature of organismic psychology. This term symbolizes the intimate behavior contacts of individuals with things and persons, during which they adapt themselves to those things and build up reactions to be repeated in later adjustments. These contacts are, of course, interactions with both natural and cultural objects. By natural things we mean objects reacted to primarily on the basis of their natural properties, while cultural things are those whose characteristics are endowments of social life.

Personality Equipment—At any time after the earliest infancy of the person the great mass of responses which have been connected with their specific functions constitutes his personality equipment. We can classify people easily on the basis of the kind and amount of language equipment they possess. If we do not investigate matters too carefully we might well marvel at the international hotel-waiters who apparently are equipped to talk gastronomically in every language. It is often expedient to refer to this behavior equipment simply as personality, and it is well to remember that this term never means anything else to the organismic psychologist than a series of responses.

Overt and Implicit Behavior—Responses may be overt or implicit. In the former case the person is in direct contact with the object whose stimulus function is operating at the time. In implicit behavior segments the person interacts with the stimulus object through the mediation of a substitute stimulus.

Among the implicit actions are ideas, beliefs, desires, intentions, purposes, etc. Because of the individual's indirect contact with the objects to which he is adapting himself, the response may be invisible or inapparent. It is such actions as these that have been historically misinterpreted as mental processes in contradistinction from bodily action—that is to say, overt or apparent responses.

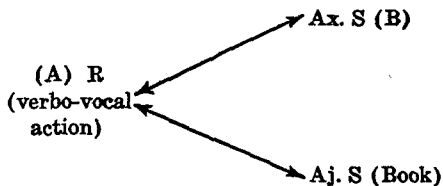
NO MIND-BODY DISTINCTION IN ORGANISMIC PSYCHOLOGY

Objective psychology throws completely overboard the distinction between the mental and physiological. In the psychological field there is no division of mind and body. There is no fact in nature describable as the translation of psychic states, ideas, or what not, into the movements of an organism. So far as language is concerned, objective psychology allows for no expression of psychic thoughts, feelings, or desires, through the motions of tongue and lips, as in the expression conception discussed in the preceding chapter. Since it is not within our province now to go into the origin of the misconceptions that lie at the basis of mind-body distinctions, suffice it to say that they could only have arisen by misconceiving the psychological facts actually observed (cf., PP I, 26 ff.).

SPEECH INTERACTIONS ARE BISTIMULATIONAL

Like all psychological phenomena, language actions are adaptations or adjustments to stimulus functions. With this exception, however, that in the case of language we have a triadic relationship—that is, there are three variables in the typical linguistic event: (1) the behavior of the reacting person; (2) the stimulus function of the object to which he refers by verbal or gestural response, and (3) the stimulus function of the person to whom he also reacts (speaks). The third variable may be the stimulation of the speaker himself (when he speaks to himself, for instance). Language is the only type of psychological interaction that involves such a three-cornered situation.

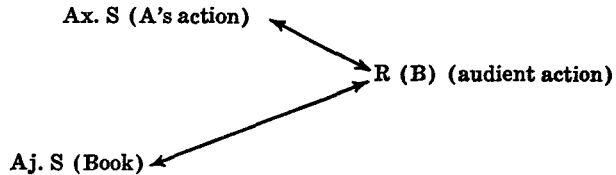
The accompanying diagram represents a schematized speech event. It shows A interacting simultaneously with another person B and a book.



A says *Please hand me the book*. R represents A's action. The book we regard as performing the main or adjustment stimulus function, and is therefore symbolized Aj. S. B simultaneously stimulates A, but only in an auxiliary way; hence that stimu-

lus function is called an auxiliary stimulus and is symbolized by Ax. S.

Now we turn to the response R of B, to whom A's request has been made. This is an action generally overlooked by linguists or regarded as passive behavior. B's action, however, equally as much as A's is bistimulational. But here A's verbocal action (the request) is the auxiliary stimulus, while the book functions as before in the rôle of adjustment stimulus.



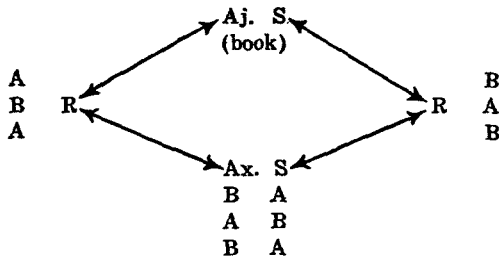
Usually we may expect B's audient response to be followed by further action. Let us consider two cases. In the first, B's action may be connected with a non-language response—namely, handing over the book. This is not a bistimulational interaction as the diagram indicates.



When the situation works out in this way, A's linguistic adjustment may be regarded as mediating a non-linguistic action—namely, securing the book.

But now consider another type of situation. Instead of reacting auditorially and then carrying out A's request, B may answer *No*. Thus B, who was previously listener, now becomes speaker. His speaking behavior constitutes his second linguistic behavior segment, his first being his audient response. B's adjustment stimulus now is his own action of handing A the book. A, on the other hand, is now performing his second linguistic action, which is of the audient type.

So far we have kept our description simplified by considering the actions of our two persons as strictly alternative to each other. We may next construct a diagram in which there is a series of actions occurring in a closed system as in conversation. Assume that A begins by asking B something about the book. B then replies, thus changing the rôles of speaker and listener. The diagram shows a second interchange of rôles, which means that the stimulus and response variables become different.



What precisely happens when one speaks? In effect, the speaker refers, and the hearer is referred to some thing, person, or event. An event, like anything else, may be the adjustmental stimulus. A says to B *The car is wrecked*. In this case A reacts to the event of the car-wrecking and to B at the same time. B likewise reacts simultaneously to the wreck event and to A. The interrelationship between the two persons and the event is made possible through an historical development which we may roughly call the process of learning to speak.⁴

The term referential as used in describing speech behavior segments is a technical expression intended to separate different types of adjustments from each other. For example, reaching for and taking a book are to be contrasted with the action of referring to it. It is this referential action which is the distinctive linguistic adjustment.

Moreover, the term referential also stands for the fact that there is an objective action here. There is no transference of *ideas* from one *mind* to another. Not only can such a transfer not be justified by any kind of observation whatsoever, but, in more forceful terms, it is an impossible and misleading conception that cannot help in the understanding of any linguistic phenomenon.

The referential conception suggests what actually goes on when persons speak and provides us a scientific technique for studying speech as a natural event.

THE LINGUISTIC BEHAVIOR SEGMENT

As autonomous and distinct adjustments, referential behavior segments may be analyzed into specific behavior details. This analysis naturally can best be made by a separate study of the response and the two stimuli.

⁴The understanding or meaning phenomena involved here will be discussed in the chapter on Semantics.

Referential Reactions—Referential responses may take on a great variety of specific behavior configurations. Throughout the several preceding chapters we have indicated that references can be made in the form of articulate vocal action, by writing, gesturing, and making signs of all sorts. These all fall into the more vivid class of reference-making responses. In addition to these there are responses which may be called being referred to, and which take on various auditory, visual, and tactual forms. Although these activities are really not passive, as superficial appearances may indicate, they are subtle and not quite so apparent in many cases.

The Auxiliary Stimulus—In typical language behavior, the auxiliary stimulus inheres in another person. But the speaker may be stimulated by himself to speak about something. To everyone it will occur how often one is stimulated by an animal to say something. And there is no difficulty in seeing how an object can perform an auxiliary stimulus function. Nothing but the exact facts we observe should lead us to place restrictions upon our views as to what does or does not happen.

The Adjustment Stimulus—Any object, person, action, and event, whether existing or not, can stimulate us to speak. What does or does not do so depends, of course, upon the other simultaneously operating stimulus functions as well as upon the personal equation of the speaker. Taciturnity and loquacity as personality traits of individuals are important features in actual linguistic behavior situations.

REACTION SYSTEMS AND REACTION PATTERNS

Every linguistic interaction is exceedingly complex. Thus the speaker's adjustment constitutes always a pattern of behavior including a smaller or larger number of reaction systems. Consider A's answer *No* to B's question *Are you going home?* This response is only the final reaction system—the smallest configuration of action (see SSP Chap. II) following the reaction system of perceiving what B said, which perceiving act itself follows an attentional reactional system. In this reaction pattern we have three reaction systems. But suppose that A actually says *No, you know very well that I have just come from home;* then the response pattern is much more complicated, involving many more reaction systems.

INTERACTIONAL SETTINGS

In every object or event there inhere numerous linguistic stimulus functions, each correlated with a linguistic behavior configuration or reaction system. Now the question arises whether at any given moment a linguistic or any other psychological interaction will take place and, if so, what sort. The answer is that it depends upon the interactional setting. Because the artist is present I do not say anything about his picture to my friend, since it cannot be a favorable remark, though were he absent I should not be so restrained. Again, though the witness must and is willing to speak he is conditioned by the court setting to answer *Yes* or *No* instead of elaborating upon what he knows and would say under other auspices.

SPEECH AS INDIRECT ADJUSTMENT

The student of psychological language will find it useful to compare linguistic behavior with non-linguistic action, on the basis of type of adjustment which is effected. Now as it happens in many cases, the linguistic behavior segment accomplishes for the speaker an adjustment which he might perform otherwise. In this sense his language becomes an indirect adjustment. Those who emphasize the social character of language, especially its function in accomplishing certain results, are referring to this indirect feature of speech.

Preceding Speech—The stock example used by those who stress the social character of language is the function of speech in accomplishing something by means of some other person. Thus if I refer you to that book which I ask you to hand to me, I secure the book indirectly through speech. Here the speech reaction precedes the direct adjustment to the book as a stimulus.

Accompanying Speech—As someone lifts a heavy object he may be stimulated to say *My, this is heavy!* Here is a linguistic action which accompanies a direct adjustment. Apparently, in this instance the indirect adjustment (speech) is not as effective as in the former case. There are times, however, when the accompanying speech reaction is actually an effective factor in the adjustment, such as when several men are carrying a heavy object and they notify each other that the joint effort is working smoothly.

Following Speech—The proud youngster who succeeds in carrying the bowl of water without spilling it commends himself with the remark, *Good!* He announces in this manner that his action was well done. Naturally this type of speech has no effect upon the non-linguistic action with which it is connected.

Substitute Speech—The woman whose house is all aflame may in her intense excitement of the moment call out *Save my dog!* although it is entirely obvious that neither she nor anyone else could possibly carry out the demand. A similar speech action may be performed even when there is nobody around. Such speech activities we may well assume constitute substitute responses for direct adjustments that one would carry out if one could. Substitute speech is obviously futile, even more so perhaps than the self-praise of following speech.

MEDIATE AND MERE REFERENTIAL LANGUAGE

The first three forms of linguistic behavior in the previous section are more or less closely connected with overt performances. We shall therefore call them *mediate language responses*.

By contrast, substitute language behavior can only be regarded as sheer reference activity. Pure referential language is the basis of conversation, in which case there may be no necessity or desire to influence anybody to do anything. The reference itself constitutes the complete form of adjustment.

Of these two types of linguistic behavior, which is the more important? Those who regard the mediate type as more significant arbitrarily set up a criterion of usefulness. Undoubtedly an undercurrent of similar influence operates upon those who attempt to reduce language to a purely social phenomenon. We suggest, on the contrary, that each instance and type of language must not only be evaluated, but also described as a behavior phenomenon on its own merits.

MORPHOLOGICAL AND FUNCTIONAL LANGUAGE

Our study of psychological language has already revealed that it is an error to assume that all verbal action falls under the head of psychological language. All verbal behavior is, of course, psychological, but it is not always true language. Suppose that we want to test an individual's capacity to memorize a series of words. We present him with a series of words of varying lengths, either visually or auditorially, and then see how

many repetitions or presentations are required before he can reproduce the series. Because this is traditionally called language behavior the name persists, but we ought to add the morphological qualifier. The writer knows no reason why we should call this *language* any more than we should say that any kind of nonsense syllables or other form of sound-making behavior is *language*.

Likewise, the activities of naming and counting things are morphological language—if we call them language at all. Such activities do not answer to the conditions of functional speech. They are not referential responses in the sense that we have been describing language.

EXPRESSIVE AND COMMUNICATIVE LANGUAGE

When two persons are interacting linguistically, the referential adjustments of A are not only responses to two stimuli, but those actions themselves serve as stimuli (auxiliary) to B, who thereupon performs a response both to the auxiliary A and adjustment stimulus (thing referred to). In a vivid conversation these double-sided activities follow each other in slow or rapid succession. When the reactions operate in this double fashion we call the action communicative.

Now there are cases in which the responses are not interpersonal. An example is the person speaking to himself or using some object as an auxiliary stimulus. Here the distinguishing term *expressive action* is useful.

REFEROR AND REFEREE LANGUAGE

We now want to call attention to two distinct forms of language behavior upon which we have already touched. We must distinguish between the language reaction which constitutes A's primary adjustment when he asks B to hand him a book, and B's first reaction in hearing the request. A's reaction we call the referor response, and B's being referred to the book (referent) the referee response. B in this instance has served as an auxiliary or referee stimulus for A's reaction. In interpersonal speech therefore the speakers successively play referor and referee rôles.

Referor language may also be called transmissive, though we must guard against the misconception that language transmits something rather than serves as a stimulus for the response of B. Referor language, as the activity primarily studied by linguists, requires no further discussion. But we must point out

some factors in referee or receptive language. Clearly, such action is very elusive and perhaps might be properly described as understanding what is being referred to. This activity of understanding, however, is quite distinct from various other forms of understanding responses. We have already pointed out that it is the bistimulational character of language behavior which marks off these understanding activities from other types, and furthermore, that as a special configuration of response, referee behavior may be stimulated in the individual by auditory, visual, or other means.

INITIATING SPEECH

When we are interested in specific adjustmental situations it is frequently important to make note of initiating speech. This is a special form of referor language which marks the beginning of a more or less prolonged conversational interchange of stimuli and responses. To take account of this type enables us to analyze better the speech phenomena before us—for example, we can locate the source of stimulus functions and thus determine generally the character of linguistic response.

VARIETIES OF LINGUISTIC BEHAVIOR SITUATIONS

When two people interact linguistically there are four behavior situations possible.

In the first place, A and B may both be performing definite psychological language reactions. This is the typical communicative language situation.

Secondly, only one of the two individuals may be performing strictly psychological language behavior. The obvious illustration is when A unwittingly speaks to B in a language that B does not understand. In this case B, of course, knows he is being spoken to. Also A's speech is a stimulus for a psychological response, but not a language response since B is reacting to speech, but not to what is spoken of. The bistimulational character of the situation is therefore lacking.

In the third case, although A is not saying anything to B, the latter performs a linguistic reaction. To illustrate, A is addressing C, and B regards himself instead of C as the stimulator of A. Another example may be drawn from the comic papers. A is rehearsing a part for a coming theatrical event. He frantically calls for help to save someone from imminent

peril. His verbal psychological adjustment here is in no sense linguistic. B, however, who happens to pass by responds as though he were an auxiliary stimulus to A, who is calling to him to be a life-saver, while A is performing morphological language behavior. B, on the other hand, is performing definite mediate referee action of the *preceding* form.

As our fourth situation, assume that while A is rehearsing his play B is present in the same sense as before, but he is unlearned in the idiom in which A's action is cast. In this situation neither A nor B is actually performing genuine linguistic behavior.

COMPARISON OF SPEECH AND SYMBOL BEHAVIOR

For a better understanding of linguistic behavior we may compare it with symbolic reactions. Especially is this worth while since in a scientific description of symbolic behavior we also have three variables. But the three variables in symbolic activity can be sharply differentiated from those in a bistimulational situation such as language. The three variables in a symbolic situation are of course (1) the response, (2) the symbol or sign, and (3) the significant.

Now our psychological behavior with respect to symbols may be of two kinds: one *to* the symbolic situation and the other *within* it. When we react to a symbolic situation, the sign and its significant are absolutely combined in a fixed relationship such that one always implies the other; we may regard the two as one object, an inseverable couple.⁵ In these two variables inheres one stimulus function. This is in sharp contrast to the linguistic case in which the action of the person spoken to, and the object spoken of, are absolutely different.

Within a symbolic situation the person is usually in contact first with one or the other of the two objects. In this case, either one serves as a substitute stimulus for the other. Here we must emphasize the successive operation of each as contrasted with the simultaneous operation of the two linguistic stimuli. A comes upon the symbol σ and perceives it as such. This is one reaction. Next he reacts to its significant—namely, the standard deviation.

To avoid the mistake of confusing speech and symbolic behavior we must notice that the apparent similarity between the

⁵ In complex symbology there may, of course, be a triadic or still more multiple relationship.

two results from an error of perspective. It is quite true that from the standpoint of the bystander we have in each case three variables, but when we insinuate ourselves into the actual performances of the reactors the two situations are quite different. To enter directly into the speech situation in this manner is to have forced upon us the fact that the proponents of the symbolic theory of language regard the action of the person as the signifier, whereas in reality it is an adjustment, and not a sign at all. The difficulty here is, of course, that the adjustment response is hypostatized into a *word* or series of words. So far we are on the side of the referor or speaker.

When we turn to the referee or hearer we must be equally on guard against misinterpretation. Why must we regard A's action of telling B to hand him something as a sign or symbol for the adjustment stimulus, whether that is the handing action or the thing handed? In this case A's action is one of two simultaneously operating stimuli for B's action. This auxiliary stimulus is no more a symbol than any other stimulus in the field of psychological behavior.

We have already sufficiently indicated (Chap. V) that a symbol is a very different phenomenon from a stimulus. To reify or symbolize the actions of either A or B in the above illustration means to confuse the process of symbolizing linguistic behavior for descriptive purposes with the observation of symbolization behavior (responses to symbols). We repeat that if we watch carefully the conditions of perspective suggested, we can avoid the confusion.

As an added suggestion concerning the difference between bistimulational and symbolic situations we may point out that never can we have a reference to an object without the relation between the two simultaneous stimulus functions being known and directly related. In the case of the symbolic situation the person may become familiar with symbols before he knows what they symbolize. The student who gazes long and searchingly upon the Russian text before he discovers of what it is the transcription illustrates the symbolic situation. Linguistic adjustments, on the other hand, exist only when the responses are already interrelated with the two stimulus functions. Psychological language is always built up through interconnection of persons who are alternately referors and referees in common situations with objects and circumstances.

SPEECH AND SYMBOLS IN SAME SITUATION

In distinguishing between language acts and symbols it may be illuminating to show how closely these two may be related. When the oriental merchant says [*as God is my witness*] *I cannot take less*, the bracketed words stand only for act-things. They are presumed to symbolize his earnestness and veracity, but are not referential adjustment actions. The fact that words as symbols and words as language may be intermixed in the same behavior pattern calls not for confusion of these two phenomena, but for absolute differentiation.

ALTERNATION OF SPEECH AND SYMBOL BEHAVIOR

There is no question that speech and symbol behavior are entirely different kinds of phenomena—different, that is, from the standpoint of actual adjustment. We must, however, point out that the stimulus functions for the two different kinds of adjustments may inhere in the same kind of materials or objects.

As we know, psychological language reactions may be stimulated by all sorts of different objects—that is, the auxiliary stimulus functions may inhere in the actual vocal reactions of another individual or in written or printed materials. In one situation, therefore, the responding individual may perceive such materials as symbols and perform the two successive responses that are typical of symbolic behavior. On the other hand, as we have indicated (Chap. V), the written materials may serve as simultaneously stimulating auxiliary stimuli for genuine speech behavior. Note that it is possible for symbols to become genuine speech stimuli. When the student has so thoroughly developed his knowledge of Russian as to find an equivalence of stimulus functions in the printed materials and in the spoken behavior of his referor, we see the process of symbols becoming speech.

CHAPTER VII

THE PSYCHOLOGY OF GRAMMAR

LINGUISTIC ADAPTATION AND LINGUISTIC PATTERNING

SPEECH behavior perhaps more than any other displays a polarization between the event and the manner of its occurrence, between the adjustment and the style in which it is performed. On the one hand is the reference to something; on the other, the pattern in which that reference is made. Since the psychologist studies behavior adjustments his task is therefore a double one. First, he must observe actual reference-making, and, secondly, the patterning of such behavior. When the psychological grammarian keeps these two aspects of his task clearly in mind, he is able to do justice both to psychological adaptations and the forms in which they are made.

INDIVIDUAL AND SOCIAL LINGUISTIC PATTERNING

Now there are two kinds of sharply definable reference patterns or styles in which speech adaptations are made—individual and social.

Individual Speech Patterning—The first, purely individualistic, depends upon various biological and personal (psychological) conditions of the individual. The biological conditions, of course, primarily determine sound-making characteristics, as in the case of persons with impaired hearing. Among the more definitely psychological speech traits may be numbered: (1) type of voice (blotting paper, raucous); (2) earnestness, hesitancy, or intensity of speech; and (3) various *peculiarities* of vocabulary, accent, stress, etc.

The sources of the individual's personal speech style lie in his particular reactional biography—in short, his unique mode of life, general acquaintance with various human experiences, as well as general education, both formal and informal. Of especial importance here is the person's intercourse with speakers of different languages.

Social Speech Patterning—As in the case of all behavior, so in the case of language, the individual's adjustments are formal-

ized or conventionalized—that is, thrown into a series of particular patterns depending upon the society in which he lives. The exigencies of social life draw the pattern of an individual's action toward a social center and influence him to speak in a particular manner. Here is the source for the second type of language style. As we all know, the form or pattern of an individual's language is powerfully conditioned by his ethnic, national, and dialectal circumstances. Accordingly, the speech of a person is always more or less channelized by a conventional framework of unique vocabulary, intonation, accent, and gesture, as well as special grammatical structure. Taken all in all, these grammatical phenomena represent behavior impositions upon the free referential activity of the individual. As soon as we begin to study linguistic action the question is therefore forced upon us: What is individual in speech and what is social?

PSYCHOLOGICAL GRAMMAR CONCERNED WITH PATTERNING

Psychological grammar is primarily concerned with the patterning of speech, with speech style. It is therefore interested in a particular aspect of concrete speech events—namely, the social type of style governing speech. This social style is an intrinsic aspect of a concrete language adjustment and not a normative form of linguistic things as described in Chapter III.

The psychological problem of grammar is therefore the investigation of how certain specific sociological conditions determine the particular nuances and patterning of an individual's linguistic reactions—for instance, the ratio of gesture to articulate utterance, the number of alternative expressions, amount of metaphor, vivacity, and clarity of utterance, etc.

The process by which an individual's behavior takes on a particular form of social pattern may be metaphorically described as a molding by social institutions. The latter are roughly defined as the impedimenta of a social group which constitutes the milieu of that community.

SOCIAL INSTITUTIONS

Man's inevitable participation in group life leads to an uninterrupted contact with group institutions. We have no space to discuss the number and types of legal, religious, occupational, intellectual, and other groups found within every sociological

organization. All these groups may be arranged in a hierarchy, beginning with the large ethnic or general anthropological units and descending in a series through national, provincial, town, community, and family social organizations.

Each subunit of social organization, in all its various religious, intellectual, and other particularities, is replete with institutions which have definite psychological effects upon the individuals comprising these sociological units. These institutions consist of both things and actions. For example, religious institutions cover not only churches, icons, but also ritualistic performances—acts of fasting, feasting, and prayer. In the legal aspect of societies there are not only codices and pandects, but also various acts of omission and commission.

Language phenomena likewise comprise such institutions. Here we may refer to the various linguistic things which we have treated in Chapter II. As far back as the late seventies of the past century Whitney (LGL) spoke of language in the gross as an institution. What we want to point out especially is that the linguistic responses of the members of a group constitute behavior institutions for the other members.¹

Now just as the religion, technology, social organization, and literature of a community determine what specific things the individual speaks of, so the institutional character of the community's language has its effect upon the formal patterning of each person's references.

THE FIELD OF SOCIAL PSYCHOLOGY

The study of the processes whereby a person's behavior is conditioned by surrounding social institutions is the work of social psychology. As that branch of psychology which emphasizes the phenomena implied in the group life of the individual, it investigates just how a person's speech takes on certain traits marking him off from members of different groups.

At once we face the problem of the nature of a group, for it must be asserted forthwith that social psychology studies altogether different kinds of groups from those studied by sociology. Whereas sociology is interested in groups as units of human organization, as communities or social strata, social psychology treats groups solely as the behavior of sets of individuals.

On the whole, sociology deals with things and not with spe-

¹ The great pervasiveness of speech is responsible for the interesting fact that some kind of linguistic material is the structural basis for many cultural or institutional things.

cific psychological behavior, as does social psychology. The latter is not concerned merely with communal coexistence, but with the interactions of individuals with institutional stimuli—that is, stimuli inhering in social institutions. Even when the behavior of persons is the subject-matter of sociology, as in the case of customs or language considered as the property or equipment of a group, this behavior is statistical and abstract. So many people pray, or pray in a particular manner; so many people speak such and such a language, etc.

The basis for a social psychological group, therefore, is the commonality or shareability of specific performances. In certain instances it may be true that a person shares a certain kind of response—a belief or a practice—with a whole ethnic aggregation. But his behavior need not in this manner be duplicated in large numbers. Social psychological groups may consist of as few as two persons. Probably most families, no matter how small, have unique names for certain objects or actions, and refer to them by those names. These two or three persons constitute a social psychological group in our sense.²

GENERAL LINGUISTIC INSTITUTIONS

To make a comprehensive or even an illustrative list of sociological language institutions would necessitate a fairly complete presentation of the facts of comparative grammar. The impossibility of so doing is even greater than it first appears, when we keep in mind that comparative grammars are formal, based upon staticized language data. Different sociological institutions of very definite sorts are found in every subdivision of a dialectal group.

We can therefore only suggest some of the outstanding institutions as a reminder of what these language-conditioning phenomena are.

Vocabulary—First and foremost is the vocabulary of an ethnic, national, regional, or dialectic language group. Vocabulary language institutions effectively determine the form and style of an individual's references. Thus vocabulary marks off one speaker in an absolute way from another; whereas the German says *Bringen Sie mir das Buch*, the Frenchman performs the same psychological reference adjustment by saying *Apportez*

² For a more elaborate statement of social psychology and the differences between social psychological and sociological phenomena see Kantor, *An Outline of Social Psychology*. (Chicago), Follett, 1929.

moi le livre. Although dialectal vocabularies influence the linguistic interactional patterns of persons, both when they are recorded or spoken, it is only to be expected that the spoken style will be more effective within a dialectal situation. Our language patterns, in other words, are more decisively conditioned by the actual speech of other persons than by written or printed material.

General Language Pattern—Looming large among linguistic institutions are the general language patterns of various groups. Accordingly, it may be well to summarize briefly the development of some prominent conceptions of linguistic patterns, beginning in the early nineteenth century.

Friederich von Schlegel—We start with the work of Friederich von Schlegel³ (1772-1829), who divided all language into two general classes: (1) the organic or flexional (Sanskrit, Greek, Latin) on the basis of an organic growth or inner modification of roots, and (2) the affixative—namely, those that combine elements by simple juxtaposition.

August von Schlegel—Now it appeared at once that such a language as Chinese could not well be called affixative, since the particles or modifiers were really independent words. Accordingly, August von Schlegel (1767-1845)⁴ elaborated his brother's classification to form three divisions, as follows:

- (1) Inorganic, languages without grammatical structure (Chinese)
- (2) Affixative languages (for example, Turkish)
- (3) Organic or inflexional languages (Sanskrit)

What Schlegel meant by inorganic or formless languages were those in which each word stands by itself as an isolated monosyllable, without any changes or modifications for tense, number, etc. Von Schlegel also subdivided the organic languages into synthetic and analytic: "the latter using personal pronouns and auxiliaries in the conjugation of verbs, prepositions to supply the want of cases, and adverbs to express the degree of comparison" (Jespersen, SL 36). An analytic organic language may be exemplified by modern English.

This threefold division of all languages has held long sway among linguistic scholars, though greater or lesser modifications have been introduced from time to time on the basis of various

³ Ueber die Sprache und Weisheit der Inder, (Heidelberg), Mohr u. Zimmer, 1808.

⁴ Observations sur la langage et la littérature provençales, (Paris), Lib. grecque-latino-allemand, 1818.

principles. In fact, since Schlegel divides his organic class, we might just as well call his a fourfold classification.

Von Humboldt—A definite fourfold classification (though he called it threefold) was developed by Wilhelm von Humboldt⁵ (1767-1836) on the basis of an evolution in the technique of idea-expression. He believed languages at first express only objects (material concepts), then the connections between concepts. Hence languages show a four-stage evolution up to the highest or inflexional type, in which language words are complete units, modified grammatically through flexional sound, and in which form words express only pure relations. Von Humboldt's classification may be represented as follows:

Formless languages (Chinese)

Form languages (agglutinative, incorporating, inflexional)

Incorporation means for him a more integrated technique of word formation than is the case in agglutination. This writer regarded the incorporating languages—Nahuatal, for example—as integrating everything with the verb as the central feature. Thus the noun *naca* = *meat* is incorporated with *qua* = *eat*, as well as the pronoun *ni* = *I*, to form the expression *ni-naca-qua* = *I meat eat*. When no especially named object is mentioned the element *tha* = *something* is incorporated to form the word *ni-tha-qua* = *I something eat*.

Expression Technique—The preoccupation of linguistic scholars with the differences in expression technique gave rise to two general classes of terms denoting either the methods of word formation or the ways in which concepts are grouped. A general scheme of these two sets of terms may be arranged as follows:

(A) *Word Construction*

- (1) **Isolating**—Every concept is expressed by a single radical. The example given is Chinese which does not combine radicals and formative elements nor on the whole several radicals.
- (2) **Agglutinating**—The agglutinating technique consists of combining loosely radical and non-radical elements. The typical example is Turkish *sev-mek* = *to love*; *sev-is-mek* = *to love each other*; *sev-is-dis-mek* = *to make them love each other*.
- (3) **Inflecting**—Here the fundamental characteristic is to modify radicals to show the syntactic relation of one word to other words in a sentence. There are two subforms.
 - (a) **Inflectional fusion** means that the radical and its increments are completely merged. Example—English *books*.

⁵ Ueber das Entstehen der grammatischen Formen und ihren Einfluss auf die Ideenentwicklung, *Werke*, Vol. 3, (Berlin), Reimer, 1843.

- (b) Inflectional symbolism is sometimes stated to be the completed form of fusion. Examples are the cases of internal modification, such as *goose-geese*, *sing-song-sang*.
- (4) Incorporation—This technique has already been indicated. We need only mention that linguists distinguish between incorporations with verb, as in our example from Nahuatl, and incorporation with noun. The latter is exemplified by Greenlandic *Tusa Rp-a-Ra* = *sounding-his-my* = *I hear him*.

(B) *Concept Heaping*

- (1) Analysis—This process corresponds to the isolating technique of word construction, or rather lack of construction. Example: English, *I love*, versus Latin, *amo*.
- (2) Synthesis—This is, of course, the opposite of analysis and is exemplified by German, *Lebensversicherungsamt*.
- (3) Polysynthesis—An intensification of the synthetic technique. Example: German, *Aktienbrauereidirektorswitwe*.

Since all linguists concerned with language classification adhere to the concept-expression doctrine, it is clear that in discussing word-construction techniques they emphasize the symbols by means of which material or relational ideas are expressed, whereas the terms analysis and synthesis stress the heaping of ideas by means of symbolic forms.

Sapir—An interesting treatment of linguistic classification has recently been proposed by Sapir (SL). He considers both what *concepts* are *expressed* or translated into *symbols* (radical, or incremental phases, of words), and how these concept-expressions influence word formation and sentence structure.

In general, he builds up a fourfold classification that will answer two questions. First, are the concepts of syntactic relation kept pure or mixed with other concepts (modality, number), and, secondly, does the language keep its radical concepts (verb or noun symbols) pure or does it add other elements to them?

A. SIMPLE PURE RELATIONAL LANGUAGES—This type of language expresses only basic (verb, noun) and syntactic concepts. Also, word radicals are not subject to meaning changes by increment (affixation) or modification (internal change).

B. COMPLEX PURE RELATIONAL LANGUAGES—Languages of type B express derivational (agentive, diminutive) in addition to basic and syntactic concepts. Furthermore, as compared with A type of language, words here are modified radicals by affixation or internal changes.

C. SIMPLE MIXED RELATIONAL LANGUAGES—These languages express basic and concrete relational or mixed concepts.

The latter are syntactic concepts mixed with concrete significance through affixation or internal change.

D. **COMPLEX MIXED RELATIONAL LANGUAGES**—Basic, qualifying, and concrete relational concepts are expressed by languages of this group. Like C type languages, they also mix syntactic relations with other concepts, and, in addition, modify radical elements by affixation and internal change.

In order to place a language in its proper class, it is necessary to subdivide each of the four main types on the basis of the prevailing technique of word formation into agglutinative, fusional, and a symbolic subclass. In addition, class A claims an extra isolation subclass, in which the syntactic relations are expressed exclusively by word position. Also, Sapir takes account of the phenomena of analysis and synthesis—in other words, the number of concepts compressed into a word. The following table illustrates the whole classificatory scheme:

LANGUAGE	MAIN CLASS	WORD FORMATION TECHNIQUE	CONCEPT EXPRESSION TECHNIQUE
Bantu.....	C	Agglutinative	Synthetic
Cambodian.....	B	Fusional-Isolating	Analytic
Chinese.....	A	Isolating	Analytic
English.....	D	Fusional	Analytic
French.....	C	Fusional	Analytic (Synthetic)
Hebrew.....	D	Symbolic-Fusional	Synthetic
Tibetan.....	A	Agglutinative	Analytic
Turkish.....	B	Agglutinative	Synthetic

General Language Institutions—The two preceding types of language institutions center about word-usage. We must refer to other general institutions, such as vivacity or inertness, that characterize languages. Compare Italian and Norwegian concerning the ratio of hand, shoulder, and head movements to vocal articulation. Additional institutions are describable as the musical, nasal, or guttural qualities separating Italian, French, and Arabic.

SPECIAL LANGUAGE INSTITUTIONS

Within the various schemes illustrating general language structure there are variations in detail. These we may call special language institutions. Of their great number we can suggest only a few.

Number—Within the general domain of number expression, languages differ on the basis of whether they limit themselves to singular and plural, or include also dual and trial.

Word Order—Generally speaking, an analytic language, even moderately analytic English, makes greater use of word order than a highly inflected one. *John loves Jane* constitutes a form of reference altogether different from *Jane loves John*. Word order in Latin is less formalized, so that the Latin equivalent of *Julius loves Julia* may be variously arranged as follows:

Julius amat Juliam, Julius Juliam amat, Juliam Julius amat, Amat Julius Juliam, Juliam amat Julius, Amat Juliam Julius.

Gender—Frenchmen, Italians, and Scandinavians, for instance, speak under the influence of a two-gender language system, while those speaking German, Latin, Greek, Sanskrit, and the Slavic languages are conditioned by three-gender language institutions.

Taboos—Euphemisms or language taboos constitute a special division of specific language institutions. Here the institutions are located in vocabulary specialization, as illustrated by the various vocabulary taboos and preferences in slang, sport, professional, sex, technical, and artistic fields.

For the most part, the classifying of languages and distinguishing of linguistic styles exemplify an overemphasis of thing-language—a carrying over of a crude form of abstractionism into the study of human speech. Linguists have frequently pointed out that it is most difficult to confine a language to any particular class. We can go further and say that when we study actual speech behavior we find that persons either are not bound by the descriptions of their language systems or that no matter how one describes a language system it actually exemplifies all the different symbolic principles.

The linguistic psychologist must point out the obvious fact that the speaker of any language can adapt himself linguistically as well as any other speaker—in other words, can say anything that the speaker of any other language can. The objects or situations are there, and the speaker can perform his referential adaptation to them. In general, the psychological student of language must look upon all the phenomena of language classifications, whether regarded as internal or external differences, as speech patterning and not as abstract symbolization, or idea-

expression. No doubt every grammarian realizes that even speech patterning is never so formalized as grammar books seem to indicate. Certainly everyone realizes that speech adjustment can go on in gestural and other behavior forms which set aside all the formulations of the abstracting linguist.

To shift from the study of abstract recorded words and sentences to concrete speech adjustments means altogether to obviate such speculations as whether the speaker of one language keeps closer to reality or characteristically includes in his speech more items of description (for example, the Slavic *Aspect*), or whether there are differences in logic or general superiorities of tongues. All these variations are only accidental patterns of no more intrinsic psychological importance than the variation between a Roman and a modern military salute. Sapir is closer to psychological reality when he ridicules the loss of cultural speech values—as when a person gives up an inflectional for an agglutinative language (SL 131)—than when he regards a prefixing language as architectural over against a suffixing language which prunes after-thoughts (SL 135). From the standpoint of dialectal limits all persons perform their speech behavior as simple unwitting adaptations without regard to the things that linguists squeeze out of their word-analyses.

Nevertheless, the student of actual speech behavior cannot but regard the formulae of the grammarians as indicative of institutions which influence in greater or lesser measure the actual speech adjustments of individuals. Naturally these institutional determiners are more effective when individuals perform articulate speech reactions than when they adjust themselves gesturally or in other intimate behavior manners.

SOCIAL PSYCHOLOGICAL INFLUENCES UPON SPEECH

Because of the bistimulational character of language behavior definite social psychological influences are at once implied.

Behavior Acquisition—All language must be acquired. The natural history of any particular individual's behavior acquisition includes interaction with parents and nurses. To a great extent these persons perform conventionalized behavior; as a result, much of the child's language acquisition will be formal and social. Conventionalized speech behavior in its details comprises a series of institutions which serve to stimulate reactions. These we call institutional stimuli.

A word of warning. Students of language have recently been driving hard the proposition that language is completely social. Every possible variation of this theme has been played. Especially has it been stressed that language is an important factor in holding people together in a social community and in helping them carry on organized social activities. This is indeed an important aspect, but we must not so overemphasize the social aspect of language as to lose sight altogether of its specific character as a particular psychological adjustment. The unhappy result is that we concentrate on the accumulated ethnic impedimenta of dead and spurious language, instead of observing strictly the operation of speech in each specific instance in which it occurs.

Community of Understanding—When I speak it is necessary that my reference be understood. Recall that one of my two stimulus objects is usually another person. My adjustment, accordingly, must be in such form that it will result in the desired effect, as when I ask someone to hand me something. This, however, is a special case—namely, an interpersonal reaction. I might, of course, speak to myself, and then my reference would be as free as possible from external impositions. We suggest once more that this socialized speech behavior is formal action, and the more socialized the more formal. Speech, however, need not be exclusively formal. Consider, too, that the way in which I speak need not be stretched out on the procrustean bed of any particular vocabulary. Of course, gestures, too, may be socialized activities. Above all, we must not confuse understanding with socialization. There are many cases in which adequate language adjustments are not at all the socialized phenomena implied by those who regard speech as entirely a means of influencing other peoples' action (Chap. V).

THE UNIVERSALITY OF PSYCHOLOGICAL GRAMMAR

In the earliest days of linguistic study most grammarians accepted the dictum that grammar represented a general striving of words to express the concepts of a universal logic. In consequence, they believed that all languages were different means employed to express the same ideas.

With the spread of the comparative methods of studying languages, a reaction set in against this idea. Especially with the advent of social psychological (*Völkerpsychologische*) in-

vestigations, the idea became popular (Von Humboldt, Steintal, Lazarus, *et al.*) that every language represented the unique mental qualities of each group, with the result that grammar universality was withdrawn from, if not categorically denied. Another factor, besides the psychological, adding weight to this change of attitude was the linguist's preoccupation with the actual phonetic nature and variations of speech. Neither the universal nor non-universal conception even hints at the description of language as an institutional phenomenon—a way in which the individuals of a community comport themselves under given conditions. And yet there is a solid foundation to the problem, but it must be differently envisaged.

From the standpoint of psychology, grammar has both a universal and individualistic aspect. In one sense, the psychologist is not interested primarily in how a Frenchman speaks as over against a German. We venture the assumption that the sheer reference to the presence of a book is the same sort of adjustment no matter in what language form it is made. Not that the specificities can be neglected in a thorough description, but they should be recognized as incidental. The particularities of grammar have very little to do with speech as psychological adaptation. The essential adjustment can be studied without bias from the contributions of political organization, geographical distribution, etc.

Linguistic adaptations are common to all people regardless of the stylistic characteristics that these adaptations assume. Obviously, however, there are differences in the speech of different individuals as well as of individuals from different groups. The most important of these differences concern what individuals talk about. The anthropologist has definitely shown that the members of some groups never speak of objects that constitute the primary interests of members of other groups. Polynesians do not talk about stocks and bonds; German peasants have no occasion to refer to copra or cowrie shells. Also, many primitive peoples have no need to discuss large quantities of things—a fact which has given rise to the erroneous conception that they cannot think beyond three. To take these speech details of actual linguistic behavior into account is to make room for both the individualizing and universalizing aspects of language.

Genuine language adjustments take on widely differing forms. As we pass not only from one ethnic group to another,

but also from one social psychological group to another, it is an obvious linguistic law that the manner of speech is infinitely variable. We may put the matter this way. Living language is individual. Even our idioms and dialects are abstractions—scientific artifacts. Linguistic adjustments thus make room for all of the enumerations of linguistic form and the infinite grammars that language students can develop.

It is hardly necessary, therefore, to disclaim here any connection between our conception of universal grammar and the older idea of a logic which manifests itself in speech. Logic and speech are worlds apart. We deal with certain principles of occurrence based upon observation, and not with generalized constructions imposed upon our phenomena.

Jespersen (PG 48) quite correctly objects to those writers who claim that English has as many cases as Latin, or that Polynesian has a subjunctive mood, etc., because it is believed that logic demands such elements. Both the proposition and its denial are based upon word materials or psychic states to be expressed. But it is axiomatic that the speaker of any language possesses the power to say anything that another speaker can say. To insist upon formal words or expressions introduces many grave errors into linguistic studies. From the psychological standpoint any language is as potent as any other.

Now aside from such shaping of language by social and social psychological group influences, we find speech adjustments to be genuinely individualized phenomena. It cannot be denied that each individual adjustment is a unique event separated from every other. This individuality is intensified when the speech style of the particular individual dominates the occurrence.

THE PSYCHOLOGICAL INTERPRETATION OF GRAMMAR

The psychological student of grammar not only studies the individual and social psychological polarization of speech behavior—this is his analytic task—but he also has an interpretative problem—namely, he wants to discover in terms of psychological principles the nature of grammatical phenomena. It is in this latter rôle that the student of psychology is interested in the general problems of grammar. Through such connections he may hope to suggest emendations for some of the present defective views in the field of conventional grammar.

PART II

CHAPTER VIII
THE FOURFOLD ORGANIZATION
OF GRAMMAR

SYMBOL-EXPRESSION BASIS OF GRAMMATICAL
DEPARTMENTS

IN consonance with the symbol-expression conception the grammarian separates linguistic phenomena into four divisions, three of which are devoted to various aspects of the symbol, and one to the mental states that symbols express. Grammar therefore has become traditionally established as the study of: (1) sounds, (2) their organization into complex word-symbols, (3) the relation of these words in complex combinations (sentences), and (4) the *meaning* of these words. This fourfold study gives rise respectively to four grammatical branches: namely, (1) phonology, (2) morphology or accidence, (3) syntax, and (4) semantics.¹

To the mentalistic or expressive psychological tradition can be ascribed the sharp distinction between ideas, thoughts, or meanings, and the symbols which express them. Accordingly, the exigencies of intellectual history have brought it about that grammarians have overlooked meanings and generally confined themselves to symbol or word study. Semantics has therefore been largely neglected as an explicit pursuit in grammar, though, of course, it could not have been left out of account implicitly. A notable example of an explicit treatment of this subject is found in the grammatical work of Nyrop (GH).

This general method of grammar organization may be traced back to the influence of Aristotle. Each of the four aspects of grammar represents one of the four principles of existence as analyzed by the Greek philosopher. The Aristotelian end or purpose is reflected in semantics. The means or efficient cause constitutes the basis for the syntactic branch of grammar. The formal or formative aspect of existence is taken over as the morphology or accidence of linguistics, while the material conditions of existence have become grammatical phonology.

¹The first three terms are rather standard in usage. Not so the fourth. Various terms have been proposed, among them semantics (semantique—Breal), semasiology (Reisig), sematology (Sayce), signifies (Welby), and finally, semology (Noreen).

Aristotelian logic has not come to us directly. It has reached us through the devious paths of medievalism. As we have already said, the Greeks were objectivists. They did not think in terms of psychic states, but of words and things. Accordingly, the Aristotelian psychology or logic operated only with word-symbols.

The post-Aristotelian subjectivists divided the individual into soul and body, with the final result that the Scholastics transferred the objective logic of the Greeks into the logic of concepts or thoughts. As all students of psychological history know, concepts or thoughts in due course were regarded as absorbing things, and were thus reduced to psychic states. Under this influence, linguists have traditionally coupled symbolic words with meanings or thoughts, as stated in the proposition that meanings or thoughts are expressed by means of words.

THE ORIGIN AND DEVELOPMENT OF SYMBOL-EXPRESSION CONCEPTIONS

The transformations in the basic conceptions of linguistic thought comprise a fascinating study. A glance over the origin and development of these conceptions throws considerable light upon fundamental linguistic problems.

Since language conceptions are so closely interrelated with psychological theory, we shall find that the history of the symbol-expressive conceptions involves a study of the successive changes in psychological doctrine. But psychological theories themselves are, of course, set in a matrix of general intellectual attitudes. Accordingly, when we begin to inquire into the evolution of these linguistic conceptions the scope of our historical studies broadens perceptively. The various versions of symbol-expression theories undoubtedly reflect the social and political developments of Western Europe.

Aristotle and the Greeks—Let us begin our search for the origins of linguistic theories with the Greeks. As we have already indicated, no subjective-objective problem disturbed their views of psychology or language. Naturally then in technical matters of psychological description and interpretation they did not resort to a division between body and mind. For Aristotle, mind or soul (*psyche*) is simply a functioning or principle of the body—a natural phenomenon inherent in all things that can move or act as self-contained objects. That is to say, the Aris-

totalian mind or soul is the same thing as life; and psychology is thus a branch of biology. In his own terms, the soul "is the first entelechy of a natural body endowed with the capacity of life" (*De Anima*, 412 a, 6). In our language, soul is the functioning of organic things. Organic as contrasted with inorganic things perform four kinds of functions (realize themselves in four ways as Aristotle says): namely, (1) the nutritive functions, common to animals and plants, and described as internal movement or transformation, for example, nutrition, growth, and decay; (2) sensation, which covers (3) locomotion as well as perception, desire, and imagination—in short, movements, constituting interactions with external things; and (4) reason, constituting knowledge and reflection, which, as the basis for scientific thought, is somewhat more closely related to the organism than with things, though it cannot operate without contact with things, at least as presented through imagery.

As properties, principles, or functions of organic things, the psychological aspects, or mind, cannot be separated from the body (*De Anima*, 403 b, 19). Aristotle is entirely explicit upon this point. And so it must be concluded that despite the primitive character of Aristotle's theory from our standpoint, and notwithstanding his ignorance from the viewpoint of twenty centuries later, his psychology is objective and involves no transpatial or psychic factor, as in the case with thinkers from Hellenistic times and beyond.

From such a naturalistic psychology we can only expect an objective formulation of language. The notion of mental expression, therefore, can play no part in Greek theory; rather the Greeks would favor an exclusively symbolic conception. With them the question was whether words had any natural connection with things or only a conventional one, as Plato indicates in his *Cratylus*.

Post-Aristotelian Humanism—Our modern symbol-expression theory must, in view of our brief statement of Aristotelian psychology, be traced to some succeeding development. We can find a locus for its origin in the humanism which developed in the Hellenistic-Roman world after the decline of the Greek (Athenian) intellectual hegemony. This humanism, we take it, contrasts with the naturalism of Aristotle's thought, in that man is somehow set over against nature, at first as a unique part of it and later as a member of a different (supernatural) order

of existence. The end result, as we know, is that the human mind is regarded as something other than the activities of the natural (biological) individual.

Historians believe themselves capable of following the thread of humanistic development in Greece back to the fifth century B.C. They cite the Pindar-Herodotus doctrine that custom is different from nature, the Euripidean exaltation of Reason, the Protagorean conception that man is the measure of all things, and later the growth of individualism in Athens, with its freeing of man from ultimate identification with his own city after the fall of the Empire.

But rationality and individualism may still be objectivistic. Probably the subjectivistic and supernaturalistic phases of humanism may be better set into a matrix which dates from Hellenistic times, when the incidents of Alexandrian conquests brought into being a genuine fusion of Greek and Oriental thought. With the growth of Alexandria as the seat of the intellectual world, the problems of thinkers divide off into two general directions. On the one hand, naturalistic interests flow more and more in the stream of specific studies, such as astronomy, mathematics, and medicine, regarded as specialized investigations into the nature of things. On the other, there arises a speculative trend which overemphasizes man as a unique phenomenon. At first, this humanistic speculation turns about the question of man's orientation as a citizen, while later the great problem is the relation of man to God. The complete turning toward the supernatural is, of course, marked by the degradation of the Roman empire. The records of history indicate that the purely scientific and naturalistic inheritance of Alexandria is taken over by the Arabic civilization, while the western European world runs more and more to the supernatural, until the era of modern science is reached. For the thinkers of western Europe Post-Aristotelian humanism becomes medieval mysticism.

So far as psychology is concerned, the result is the creation of a verbally asserted realm of psychic existence, endowed with properties opposite to those of natural things. The psychic is reputed to be transpatial, known only by a special kind of knowing process—mystical intuition. Further, this psychic realm, strangely enough, is regarded as directly known, whereas the natural world is known only indirectly. And finally, the psychic is only in some strange manner correlated or connected with the

human organism as a natural phenomenon. This dualism has dominated European thought from the Alexandrian period to this very day.

When we search for the social and political matrix of such doctrines, we undoubtedly find it in the revolutionary changes that took place in man's circumstances at this time. The Alexandrian conquests threw men out of their circumscribed orbits within localized national groups and gave them more enlarged contacts with human conditions and situations. The result was a homelessness and disorientation arising from loss of place. This condition, the historian tells us, is symptomatized by man's perennial search for a city of God—a world beyond the heavens, or at least beyond the realm of sense (nature). Philosophical reflection from early Hellenistic times was turned away from interpretations of nature to the search for salvation—ways in which man could find something solid to which he could attach himself. European philosophy from that time to this has been in larger or smaller measure the self-deluding exercise of wish-fulfillment.

The Development of Psychological Dualism—The history of modern psychology indicates that the dualistic way of thinking, which originated in Alexandrian times, still continues. This is true despite the development of laboratory experimentation. As we should expect, of course, this fundamental dualistic tendency has taken on various forms from time to time. Accordingly, the development of modern psychology is the intricate story of protean changes in the dualistic conception.

The Cartesian Dualism of Nature—If we follow the conventional plan by beginning modern psychological history with Descartes, we must point out that his interest was primarily in separating the psychical from the physical for the purpose of establishing scientific propositions concerning reality. The fundamental basis of the distinction between the psychical and the physical was that the latter was amenable to mathematical (geometric) statement, while the former was not. The psychical was regarded as inextensible thought which stood over against extensible matter.

Descartes' achievement may be said to consist in drawing away from medieval dualism, in which nature was separated from the world of grace, to turn in the interest of science toward a dualism in nature itself. Howsoever great may have been this

achievement for the general development of physics, it was hardly a step forward for psychology. For Descartes' view fostered—if it did not initiate—the conception so definitely stated by Kant, that psychology could never be a science because its objects of study could not be measured or treated mathematically.

Post-Cartesian Psychophysics—Psychological dualism may be regarded as essentially the doctrine that man is in some sense a union of an organic structure with a psychic structure or psychic functions—in other words, a body and a mind. Now although the earliest form of theological dualism—even that antedating St. Augustine—implied this fact, not even Descartes stressed this view. And so we may regard his bifurcation of nature as only a preliminary step toward modern psychological dualism or psychophysics. Descartes did not make any elaborate statement concerning the human mind, and he thought of it as sustaining only an exceedingly tenuous connection with the body.

In tracing the origin and development of psychological dualism it is of the utmost importance to notice that with the great advancement of experimental science in the nineteenth century the work of scientists was assimilated with and set in the dualistic background. Accordingly, we may regard as the culmination of the dualistic mode of psychological thought the present-day problems of physiological psychology—namely, how sensations, feelings, desires, or psychic action can be based upon or connected with the functioning of the nervous system. Here the student of psychological history can follow the thread that runs through the work of Weber, Fechner, and the great number of physiological psychologists since Wundt. It is hardly necessary to refer to the changing details of dualism as exemplified, for instance, in Fechner's attempt to connect psychological dualism with the Cartesian idea of the division between mental and material nature, and the retreat of various workers from the psychophysical position that sensation qualities are definitely coordinated with neural happenings.

Linguistics in Dualistic Thought—It is possible roughly to associate the expressive and symbolic emphases in linguistics with the two general aspects of dualism that we have been discussing. The expressive aspect of speech has been stressed in

connection with modern psychophysics, while during the aegis of the older forms of dualism the symbolic aspect held the stage.

Thus the symbolic phase of language developed first. Accordingly throughout the development of psychology speech has been connected with intellect or logic, with the expression and ordering of thought. Even in the late Middle Ages, the question arose whether universals or concepts were real things or only words or names summing up particular existences. In the Renaissance, we find leading thinkers debating the problem as to how words can be employed to systematize logical thought. Thus Descartes,² Wilkins,³ Leibniz,⁴ and others,⁵ were interested in organizing a universal or philosophical language. In effect, all these efforts constitute an attempt to develop a universal verbal symbology with which to *handle the world* qualitatively in correspondence with quantitative mathematical symbols.

All of these attempts to establish verbal symbolisms, from our standpoint, may be regarded as steps in the establishment of language as things. There is here, of course, a measure of objectivity, a return to Aristotelian ways of thinking. In so far as words are looked upon as the symbols and correlates of thought or philosophical ideas they constitute one phase of the symbol-expression formula.

The expression phase of the symbol-expression doctrine developed its characteristic form with the establishment of psychophysics. No doubt the best statement of the expression formulation of speech is found in the work of the eminent German psychologist Wundt. He allows fully for the action phases of speech, but regards them as outward signs of internal mental states. Wundt's conception of speech as organic expression of mental states goes much farther than the historical trend. For one thing, he allows for feeling and other kinds of expression beyond the ideational or intellectual types outlined by his predecessors.

From our present point of vantage, it is easy for us to diagnose the difficulties which scholars have had with speech. The inadequacy of all language-thing conceptions can be traced to

² Letter to Mersenne, 1629, *Oeuvres*, (Cousin, ed.), (Paris), Levrault, 1824, Vol. 6, 61-68.

³ *An Essay towards a Real Character and a Philosophical Language*, (London), Gellibrand, 1668.

⁴ See Couturat, L., *La logique de Leibniz*, (Paris), Alcan, 1901.

⁵ See a summary in Cassirer, E., *Philosophie der Symbolischen Formen*, Part I, (Berlin), Cassirer, 1923.

the fact that speech is dealt with as materials set up to look at and not as activities performed as phases of the activity of human organisms. Especially in the case of Wundt, we find lacking an intimate setting of anthropology.⁶ Language is nowhere treated as human phenomena developed in human situations as adaptations to the detailed phenomena of everyday life. To look upon language, on the other hand, as individual adjustments helps to avoid the symbolization and reification of human speech. In particular, an anthropological viewpoint is effective in obviating the wrong idea that the organic phases of speech are things standing for or correlated with (expressing) psychic states—the latter not derived from observation, but accepted as traditional modes of interpreting human adjustments. Anthropological science, on the contrary, teaches that these *expressions*—in so far as they are definite and stable—are really modes of social patterning that constitute the forms of specific linguistic adjustments. What is regarded as the expressed psychic is really the essential kind of adjustment made—a particular form of reference action. We suggest that the mental expression idea be replaced by the notion of a human adjustment in specific kinds of group life.

In this connection it seems odd that recent writers, such as Ogden and Richards (MM), should pride themselves upon bringing to life a form of mentalism in order to get away from the so-called word magic which identifies words too closely with things. Not by mentalizing Aristotle can we amend the close connection asserted by him to exist between words and things, but by including in our thinking an objective conception of psychological adjustment.

BEHAVIORISM AND LANGUAGE

The dissatisfaction engendered among psychologists by the spiritualistic or mentalistic tradition is a matter of common knowledge, as well as the suggested behavioristic substitute. Nevertheless, in order to complete our survey of the development of psychological theories underlying language studies we must briefly discuss the behavioristic phase of psychological history.

In order to make psychology scientific the behaviorist has thrown overboard the psychic aspect of psychological dualism

⁶ Wundt's connection with anthropology sums up to an attempt to explain human development as the outcome of psychic conditions. Nowhere does he allow for fundamental anthropological influences upon psychological phenomena.

and left the organic or physiological phase. So far as language is concerned, the behaviorist has reduced the whole phenomenon of speech to physiological happenings. Not only is speech not the expression of mental states, but the mental states themselves are reduced to organic action of muscles and neural tissues. Thought is variously described by the behaviorist as subvocal speech—the action of laryngeal mechanisms, or the operation of the whole anatomico-physiological organism.

While this form of description has the merit of extruding from psychology the questionable mental, it reveals a hopeless inadequacy in coping with the problems of actual speech. True, the action of the person in performing any psychological adjustment involves nothing beyond the observable behavior of the individual as a biological organism. But the most refined analysis and description of organic functioning tells us very little about the psycholinguistic adjustment. We must include in the story the building up of linguistic behavior configurations in intimate interaction with stimulus objects, as outlined in Chapter VI. To understand language properly is to pay strict account to the detailed anthropological and individual developmental happenings in the life of the person whose speech is being studied.

SYMBOL AND THOUGHT IN GRAMMATICAL HISTORY

The deeper we penetrate into linguistic studies the clearer it becomes that the symbol and thought-expression conceptions are quite as much responsible for grammatical as for general linguistic misconstructions. Not the least of these is the artificial arrangement of grammar in a fourfold compartmental division of fairly unrelated factors. This arbitrary division of speech phenomena has resulted in the darkening of many a page in the history of grammar.

So wide a gulf has been scooped out between these compartments that as a result grammatical history is replete with wars concerning the subject-matter of linguistic science. At one time and by some scholars the reality of language was located in sounds—the alleged bases of speech symbols. This is the period in which phonology became glorified. At other times the inflectional forms were stressed—namely, the complex symbols themselves—and thus morphology became the backbone of linguistics.

So far as scientific linguistics is concerned, history records that the symbolic aspect of word study was first emphasized.

Hence the early dominance of the formal side of words or speech. Convenient marks of the high points reached by those who overemphasized the morphological or lexicological aspects are provided us first by the great development of comparative morphology as represented by Bopp (1791-1867), Schleicher (1821-1868), and their followers, and secondly by the peak representing the work of the *Junggrammatiker*, who believed themselves to have discovered absolute phonetic laws.

The translation view began to make headway later, resulting in the development of syntax and semantics. The development of the former is generally associated with the name of Delbrück (1842-1922), whose publications appeared well toward the end of the nineteenth century. It is a significant item in linguistic history that Paul omitted the discussion of syntax from the first edition (1880) of his *Prinzipien der Sprachgeschichte*, to which he later did devote several chapters. Also Oertel (LSL 55) points out that a whole series of Indo-European grammars (Breitkopf u. Härtel Series) were published containing no syntax whatever. The development of syntactical studies is clearly connected with the impression made upon linguists by psychology.

Although semantics developed somewhat earlier than syntax, arising out of lexicological studies, it is today still a neglected department in grammar. Benary (1807-1860) is credited (LSL 72) with the building up of semantics as an important and independent branch of grammar upon the basis of suggestions made by his teacher Reisig as early as 1834. And yet it is still conventional not to discuss semantics as an integral part of grammar. It is a relevant suggestion here that if modern conventional grammar had not been first modeled upon inflected language texts, syntactical word order and meanings might have been developed historically earlier and regarded as equally important aspects of grammar as phonology and morphology.

SOME DIFFICULTIES OF COMPARTMENTAL GRAMMAR

Scientific work requires specialization. This is a valid plea for dividing off fields of interest and performing various dissecting operations. But specialization should aid in discovering the nature of a scientific subject-matter and not in misconstruing phenomena. Such misconstruction is undoubtedly involved in the historical inclusions and exclusions we have indicated.

But the fourfold organization of grammar carries within it difficulties of perhaps a more serious nature than the separation, overemphasis, and neglect of speech functions. These difficulties concern the question as to the very nature of these aspects and how they are related.

Syntax is generally defined as the study of sentences, whereas accidence or morphology is the study of words or word formation. But since most grammarians regard the sentence as the real element of speech, morphology becomes defined as the study of the inflection or form-change of words that indicate their places in the sentence. There is, then, really no difference between syntax and morphology.

Syntax also runs into semantics. Thus Jespersen begins his first volume of syntax⁷ with the statement that "syntax, in the sense in which it is taken in this book, looks at grammatical facts from within—that is, from the side of meaning or signification." Syntax thus contrasts with morphology, which is concerned with form, but seems to coalesce with semantics. A still more interesting phenomenon is the definition of Stahl.⁸ "Syntax ist die Lehre von der Bedeutung der Wortformen und ihrer Verbindung im und zum Satze"—which throws together three of the four grammatical aspects. This is no isolated viewpoint, since Brugmann-Thumb⁹ endorse it.

Another sort of grammatical confusion arises when the attempt is made to study phonology without regard to morphology. Can there be such a thing as phonology without complex word and sentence arrangements? Moreover, grammarians sometimes surprise us by discussing sound elements without regard to meanings, although the absurdity of this abstractionism is manifest.

One of the most striking propositions in conventional grammar is the supposed conflict between form and meaning. A singular form is plural in meaning and vice versa; present tense forms are future in meaning; accusative forms are nominative in meaning, etc., etc. In view of such propositions we are quite prepared for the remark that there is no science in the conventional grammar system or lack of system (PG 39).

We submit that many, if not all, of these general grammatical difficulties throw into contrast the difference between

⁷ *A Modern English Grammar*, Pt. 2, Vol. I, (Heidelberg), Winter, (3), 1927.

⁸ *Kritisch—historische Syntax des Griechischen Verbums der klassischen Zeit*, (Heidelberg), Winter, 1907.

⁹ *Griechische Grammatik*, (München), Beck, (4), 1913.

symbols and psychic expression, and actual language adjustments. The very fact that grammarians can hold apart the various aspects of language indicates that they start with arbitrary abstractions based upon symbols and psychic expressions. Hence the discussion of forms, materials, connections, and meanings in complete disjunction from each other. Nevertheless, these separate aspects tend to coalesce or even disappear altogether, since in spite of the grammarian's original intention to keep them apart, he is after all dealing with language behavior. This is why grammarians cannot define sharply the various separate departments of language.

This confusion in grammatical organization, as we have already remarked, is duplicated in the study of every detail of grammar. We shall find that the same intellectually disturbing factors are operative in hindering the appreciation of the nature of case, mood, parts of speech, etc.

MODIFICATIONS IN GRAMMATICAL ARRANGEMENT

Despite differences in terminology and organization, the four aspects we have been investigating seldom fail to bob up somewhere near the surface. We have seen that many grammarians contract the number of departments to three by excluding semantics. Accordingly, we cite Noreen, who sets up a threefold scheme by somewhat submerging syntax, while Porzig attempts to limit grammar to morphology and phonology.

Noreen—This writer (WBS 40 ff.) starts with the assumption that speech, like an art object, has three phases: material, form, and content. On this basis he divides grammar into three main divisions: (1) phonology (*Lautlehre*), the study of sounds or the materials of speech; (2) semology (*Bedeutungslehre*), the study of the psychic content, or meanings; and (3) morphology (*Formenlehre*), the study of word formation, inflection, and syntax.

We wish merely to call attention to the fact that although Noreen throws his grammar into a three-department plan, he not only emphasizes the four aspects mentioned, giving unusual prominence to the semantic side, but he also stresses equally the expressive and symbolic notions. Similar results are found when more elaborate systems are involved; namely, those containing more factors.

Porzig—Beginning his exposition¹⁰ with an attempt to depart radically from other students in the interpretation of syntax, Porzig asserts that the starting point of all linguistic study is the utterance (*Ausspruch*), which has three phases: (1) grammar or the outer side of the utterance—sounds, word forms, and word constructions; (2) speech psychology—how ideas and feelings condition the grammatical structure of sentences; (3) meaning study (*Bedeutungslehre*)—how utterances refer to reality. This involves two sub-aspects: one, which is ordinarily called semantics; and the other, syntax.

Now, despite surface indications, it is obvious that we have no departure here from the traditional fourfold classification. Yet this scheme of Porzig merits some discussion, first, because he does not put all these aspects of utterance under the heading of grammar, and, secondly, because his scheme symptomatizes an attempt to link up in an interesting manner modern symbol-expression doctrine with a variant of Aristotelian symbolism.

On the surface this is essentially an attempt to outflank the medieval subjectivity and return to an Aristotelian symbolism, an impossible task, as we have suggested, and especially as the attempt is made under neo-scholastic auspices. Let us see how this phenomenological motive works out.

After Brentano revived the scholastic doctrine that the fundamental aspect of all psychological phenomena consists of the intention of the mind, or its reference to an object, it was subjected to a number of emendations by those scholars under his influence—especially by Husserl. For Brentano, intention was an empirical mental process referring to psychic materials which constitute objects. Husserl, on the contrary, wanted to make his intentions pure—that is, free from such empirical mental processes. In other words, he tended toward an abstract relation of mind and object.¹¹ So far as linguistics is concerned, the result of Husserl's studies may be taken to be that words stand directly for things.

Speech, then, for Porzig, as a follower of Husserl, is fundamentally a phenomenon in which the mind refers to reality, or to some happening. This reference or intention he calls meaning (*Bedeutung*), and it appears to him as the main feature of

¹⁰ *Aufgaben der indogermanischen Syntax*.

¹¹ For a discussion of the development of this revived scholastic psychology see Titchener, E. B., *Systematic Psychology: Prolegomena*, (N.Y.), Macmillan, 1929, p. 193 ff.

speech, aside from the external factors of expression. This intention implies two aspects: an intention function, the meaning or reference act itself; and also a way in which this intention is expressed. The former provides the material for semantics, and the latter gives a subject-predicate, an accusative-dative, or an active-passive—in short, a syntactic organization—to the utterance. Such syntactic organizations or arrangements constitute sentences.

Howsoever different the ideology behind this exposition from that which influences the linguists—from whom Porzig wishes to separate himself—and howsoever complicated and many-sided this linguistic scheme, it still brings us back to the four conventional, grammatical aspects. We may add, too, that it offers us no improvement in the general description of linguistic phenomena. Porzig's phenomenological description is just as far from linguistic adjustments as the standard psychic description.

PLAN OF OUR GRAMMATICAL STUDIES

For the basic organization of the present work, we divide our study of grammatical phenomena into two parts. In the first we discuss the four general grammatical topics—namely, phonology, morphology, syntax, and semantics, though in reverse order. Then we investigate the fundamental grammatical categories, including speech parts, person, gender, case, etc.

For the purpose of achieving an immediate, general linguistic orientation we plan to point out in each chapter the present grammatical status of the problem under consideration. Then we propose an objective psychological interpretation. By following this plan we hope to contrast the conventional grammarian's emphasis of classification, definition, and redefinition of supposedly fixed forms with the psychological conception of multiplexly determined, concrete linguistic or reference adaptations.

CHAPTER IX

SEMANTICS

THREE ASPECTS OF CONVENTIONAL SEMANTICS

ALTHOUGH conventional semanticists generally regard themselves as students of one type of phenomenon—namely, the meaning of language—they really concern themselves with three kinds of materials and techniques. Semantics therefore may be regarded as word studies conducted upon three different levels.

Level of Word Usage—For the most part, students of semantics deal with simple word-usages. On this level a word is taken to mean what it stands for. The word horse stands for the animal horse. Here the semanticist thinks in terms of the ordinary usage of words by speakers, hearers, writers, and readers. He does not distinguish between spoken and heard speech and literature. Hence he emphasizes words as references. The technique he employs is the observation and recording of instances in speech and writing.

Level of Definition—Here the semanticist studies the manipulation of word-symbols. When the question arises as to the meaning of a word one must refer to the dictionary. If the word belongs to one's own language, one must find an equivalent word or phrase. This is essentially a process of reversing the work of the dictionary-maker who sets down the equivalents.

This is true for ordinary definition or equivalence. But there is another case when a translation or substitution is necessary. The foreigner finds a word in his language which corresponds to the foreign word. In both these cases a triadic relationship is involved as over against the case of simple usage, which is dyadic. On the level of simple usage, a word stands for the thing or referent directly, whereas in the case of definition a second word stands between the first word and the thing. On this level the technique is to correlate words with their synonyms.

Level of Description—The third aspect of semantics has to do with the investigation of relationships between words and what they mean. In other words, both the word and what it stands for are presumably the single subject-matter being stud-

ied. The study technique is essentially to set words and their meanings into a background of psychology or logic. Hence the semanticist does not merely observe the uses of words or how they can be equated, but interprets their nature.

The most prevalent formula for this level is that words mean what they do because of the ideas in the mind of the speaker or hearer. Much emphasis is therefore placed upon meaning as a middle term between the word-symbol and its referent. For the most part, as we have indicated, the middle term is regarded as an idea or mental state, or less frequently (by behaviorists) as a bodily movement. Some linguists classifiable as logicians or symbologists concentrate upon the two coördinate end-terms without regard to the middle factors.

The descriptive level of meaning is excellently illustrated by Bloomfield (BL). This writer describes the meaning of a linguistic form as "the situation in which the speaker utters it and the response which it calls forth in the hearer" (139). Then he goes on to say that the statement of meanings is the weak point of linguistics (140), that the linguist cannot define meanings (145) on the ground that only in certain cases do we have scientific knowledge of the matter having to do with the meaning (139). Thus we know the meaning of the English word *salt* which is sodium chloride, but not *love* nor *hate*.

So far does Bloomfield stress the connection of words (vocal acts, linguistic forms) and things that the former must symbolize the intrinsic nature (whatever that may be) of the latter. Hence he runs into the dilemma of divorcing semantics from actual speech—few uttered words have anything to do with scientific analyses or understanding of things referred to—or else changing his view about meanings. It goes without saying that he takes the latter path. Although he goes so far away from actual speech situations as to exclude gestures from language (BL 144), he actually keeps close to them by working mostly with word-usage and definition. How closely he adheres to conventional word-usage and word exchange is indicated by his assertion that in practice all linguists define meanings in terms of the speaker's situation and the hearer's response, to the exclusion of the mentalistic (psychic state) or mechanistic (bodily process) middle terms (143-4). To retreat from the view of the connection of words and the scientific nature of things, Bloomfield uses the same word formula of *speaker's situation* as he formerly employed to set up that view.

CONVENTIONAL SEMANTICS BELONGS TO
THING LANGUAGE

Conventional semantics, it is clear, passes by linguistic adjustments in favor of word-study. Perhaps this explains why grammarians draw so sharp a distinction between semantics and the other phases of grammar. Semantics is set aside as the concern of lexicology. It thus becomes a discipline connected with elementary word-logic—in short, a branch of verbal symbology.

But although the overt study of meanings is set aside by grammarians in favor of morphology and syntax, it slips in to plague them at every opening. Not only do grammarians regard words as having meanings, but also affixes. Thus *er* is presumed to stand for or express agentship, *ed* past time, etc., just as in the case of fundamentals or roots.

Now as long as the grammarian confines himself to the study of isolated words or word-parts there is no objection nor difficulty. But can a grammarian so confine himself? As soon as he begins to deal even with written descriptions, assertions, or requests, his system of semantics breaks down. Words lose the fixity of things and take on the fluidity of actions. The meaning of words comes to be how they are used in specific human situations. Moreover, all grammatical definitions break down. Nouns become verbs, plurals become singulars, and, in general, symbology gives way to performance. In numerous instances words are dropped altogether, as when *with reference to* is called a preposition. That conventional semantics belongs to thing-language is hardly to be doubted when we observe the highly variable conditions found in actual speech or conversation, for here the conventional semantic conceptions fail to apply altogether.

A striking illustration of the inapplicability of conventional semantics to grammatical situations is found in the work of Ogden and Richards (MM). These authors approach the problem of semantics from the standpoint of the bad influence of words and word-usage upon thought. Accordingly they step into the ranks of the endless column of thinkers (Plato, Aristotle, Occam, Bacon, Hobbes, Locke, Leibniz, Mill, etc.), who have been interested in the correspondence of words and facts. The result is that they are immediately thrown into a study of word-symbolism.

At once they face a dilemma. On the one hand, the evil influence of words upon thought is traceable to what they call word magic. They find that much wrong thinking is rooted in the fact that words are taken to be fixed correlates of existences or referents. But, on the other, since they are symbolists, they are exasperated because the same terms or words are used with altogether different connotations. The term *beauty* they find has no less than sixteen meanings or referents, while so far as the use of the term *meaning* itself is concerned, there is no standard usage among philosophers.

What should these writers conclude from this situation? Simply that they are dealing with distinct kinds of phenomena. At one extreme there are words which constitute adjustmental actions referring to phenomena. Here obviously there cannot be any tight connection between words and things. *You little angel* and *you little devil* may be entirely equivalent forms of adaptation to a given stimulus object. As Erdmann¹ points out, it is an error to say that a whale is erroneously called a fish, especially in speaking German (*Walfisch*). At the other extreme are word-symbols, which should be used rigidly to stand for certain definite referents.

As symbolists, Ogden and Richards do not, however, come to such a conclusion. Instead, they plunge into the murky waters of meaning and emerge with the context theory. According to this theory, what a word means depends upon its connection in past experience with some other thing. "When a context has affected us in the past the recurrence of merely a part of the context will cause us to re-act in the way we reacted before"² (MM 139). Without doubt we have here an implicit appreciation of the individualistic and casual connection of reactions and stimulus objects. Now if we think in terms of reactions instead of words produced by reactions, it is clear that persons can have various reactions connected with all sorts of contexts. As a result, genuine linguistic references can be performed in a variety of ways.

But since these authors cannot allow for genuine linguistic adjustments, they harbor in their thinking a serious contradiction. On the one hand, they quite correctly set up as their first canon of symbolism "that one symbol stands for one and only one referent," but they are altogether in error in converting lan-

¹ Die Bedeutung des Wortes, 92.

² This principle is known to psychologists as Redintegration or Reinstatement. See Warren, A History of the Association Psychology, (N.Y.), Scribner, 1921.

guage entirely into symbols. Speech adjustments have nothing to do with truth or correctness of thought. It is a mistake to think that (1) speech is a series of symbols that stand for something, (2) that grammar not only holds the key to knowledge, but is "the inspiring study of the means by which truth is acquired and preserved" (MM 410),³ (3) that if one's speech is not truth eliciting it is because it is emotion (feeling) arousing.

At the basis of these errors lies the conception that speech consists of the production of symbols instead of the performance of linguistic adjustment actions. Thus despite the laudable conviction of Ogden and Richards that the word-symbols we use in reflection and scientific description should not be magical, and despite their praiseworthy espousal of the context explanation of the manner in which word-symbols acquire their connection with other words and things, they confuse symbols with speech.

CONVENTIONAL SEMANTICS AND PSYCHOLOGICAL GRAMMAR

If the term semantics refers to the kind of symbol interpretation we have been considering, it is plain that it does not concern linguistic adjustments at all. Psychological grammar can freely dispense with verbal semantics. To agree to this proposition it is necessary only to free our thinking from the influence of conventional thought-patterns. And only when we so free ourselves are we able to examine the problem of meanings in the field of living language. As an aid in discarding undesirable attitudes towards symbolic conceptions in the genuinely linguistic field, we consider both the response and the stimulus phases of speech adjustments.

Speaking and Its Interpretation—Living language behavior involves no interpretation, any more than any other action. There is no more reason to look for meanings when I am stimulated to speak to someone about something than when I jerk myself away from a burning candle. It is true, of course, that some psychologists believe that when a reactor jerks himself away from a burning candle the reaction shows what the candle means to him. Even if we accept this belief (which we do not) it does not confuse us at all, for clearly the term *meaning* here is used in a distinct and clear-cut fashion.

³ A well-known attempt to make grammar the basis of thought is found in Sheffield, *Grammar and Thinking*, (N.Y.), Putnam, 1912.

When I tell you something, my distinctly linguistic performance requires no other description than that of a specific interaction. We must differentiate between the interaction of the person with two stimulus functions or objects, and the interpretation of that interaction.

The interaction is an observed event, while the interpretation is imposed upon it by some interested spectator or observer, whether or not he is a scientist. If the observer *is* a scientist he will merely make a more careful and exact description and interpretation.

We must avoid here the confusion of an event itself with the interpretation thereof. Stylists will recognize this error as a type of pathetic fallacy. To put symbol meanings into a linguistic action is to make the mistake of thinking that because we believe the action means something—that is to say, interpret the event on the basis of our own theories or postulates—the meaning is in the event. This is tantamount to a physicist believing that his descriptive formula is the event that is symbolized.

Understanding Misunderstood—It is perhaps only necessary to point out this confusion to avoid it in the case of a speaking reaction. The situation should not be different with hearing speech. Here the writer suspects that much of the difficulty is brought about by a misunderstanding of the phenomenon of understanding.

The conventional teachings concerning language imply the existence of a common process called understanding which operates equally when the scientist understands, for instance, the nature of oxidation, and when he understands what is said to him. There is an unfortunate confusion here based upon the use of a common term, whether that term be understanding or meaning. There can hardly be greater differences between the two kinds of action. To understand or know the meaning of the oxidation process is to be elaborately oriented with respect to a phenomenon. Unless the understanding is really linguistic the scientist has made observations, manipulated his materials, and finally summed up his observations and experiments and interrelated them.

When we use the term understanding for a language reaction it refers to something altogether different. Here the term is the name for a direct referential performance which is built up as a particular way of acting through contact with people

who share this action. Suppose that the question is asked *Is this the house?* When the hearer understands the question, it is because it stimulates in him an immediate reference response, just as when an unexpected contact with a hot object stimulates him to jerk himself away from it.

SPEECH AND SPEECH SITUATIONS

What are erroneously thought to be meanings involved (actually imposed upon) in speech events are really conditions located in the specific auspices of the speech situation. The two stimuli involved themselves constitute a special kind of circumstance. Besides, every speech event is set in a unique background. This setting gives a particular character to the speech performance, both its pattern and effects. When A asks *Is this the house?* he is adjusting himself to an immediate situation in which some house has been spoken of. B, who hears this question, in order to understand it must have figured in that situation or the utterance would not be a language stimulus for him. It is important to notice that what are called meanings, in the sense that B knows what A says, involve nothing further than the conditions of the particular situation. Moreover, B's understanding response belongs only to this fleeting and perhaps trivial incident. Accordingly, such situations must not be confused with, for example, Bloomfield's "speakers' situations" (BL 74) which together with "hearers' responses . . . make up the world in which we live." The psychologist is in no sense concerned with such cosmic affairs as lead Bloomfield to say:

Actually, however, our knowledge of the world in which we live is so imperfect that we can rarely make accurate statements about the meaning of a speech-form (BL 74).

For the psychologist, dealing only with specific adjustmental situations, the meaning interpretation given to the hearer's adjustment consists merely of an appropriate interaction with the speaker's adjustment and its particular referent. Parenthetically we may remark that we are not concerned with a speech-form, but with an action of a speaker which may be a gesture of some sort.

By no means may we confuse the intrinsic speech situation with some other with which it may be connected. For example, the speaker may perform his speech behavior not merely as an adjustment to an immediate situation, but also to bring about some result. He may refer someone to something in order to

inform him, to inquire about it, to indicate that he has something to say, or to mislead the listener. Now it is undoubtedly because the observer of such a speech event wishes to organize its different aspects into a system that the notion of a meaning is engendered. Thus the observer reports that the speaker meant to convey such an idea, the hearer understood or misunderstood what the speaker meant, etc.

PSYCHOLOGY OF MEANING

Manifestly we have reasons enough for studying the general problem of meaning. In the first place, we must distinguish psychological meaning from other sorts, in order to avoid confusing the meaning of a linguistic event with meanings taken as objects of symbolic relations or with interpretations placed upon symbolic and linguistic phenomena.

Secondly, the various kinds of psychological phenomena which go under the general category of meaning may be differentiated. For example, when I say *I mean to go*, the psychological action to which I am referring (intention) is a different one from the action I perform when I perceive that the object ahead of me is a stationary car (appreciate the object's meaning). And finally, it is well to be oriented with respect to the nature of meaning from the psychological standpoint.

Traditional Meaning Conceptions—Conventional semantics is, of course, based upon the mentalistic conception of psychology. According to this conception meaning is a state of mind by means of which a word is referred to that which it denotes. The ordinary problem of meaning for traditional semanticists is how a word or a series of words connects with an idea in the mind and later arouses that idea.

This essential theme is played in a great variety of ways. For example, Ogden and Richards (MM 14) say that the symbol or word stands for the referent and symbolizes thoughts, while Stern (MCM 30, 38) prefers to say that the word expresses the mental content (meaning, thought) and names or denotes the referent. The mental content or meaning for Stern is the speaker's apprehension of the referent. A criticism of this general mentalistic conception has been made in Chapter V. In addition we may point out that even when a psychological action is substituted for the mental state, as some linguists seem to show signs of doing, the traditional conception is hardly made tenable.

One of the strongest bases for the semanticist's belief in meaning as a middle ground between a referent and a word is that a word cannot be a meaning, while words and meanings may vary independently of each other. Let us notice in the first place that this sort of thinking starts with words as signs or symbols and of course there must be something with which to relate them. Do we need anything more than a couple? Any third factor is a superimposition of an interpretation by an observer. Why should this interpretation or apprehension be regarded as anything else than an objective action? As to meanings and referents varying, cannot this be regarded as merely different ways in which persons associate words and referents? Here again the whole situation can be handled in an objective way.

Suppose, however, that the way a person interacts with a symbol does depend upon his ideas. This idea or meaning for the mentalist constitutes a mental content, while for the behaviorist it consists of a way of responding to things—an action. Now in each case we may regard the individuals as having a different idea about the word *meaning*. But this idea is never a mental content, but an objective response. Moreover, we are never obliged to confuse this idea action with another action of responding to the symbol-word and its referent. It is not necessary to repeat here the arguments against confusing the symbol situation with actual speech.

Behavioristic Meaning Conception—The behavioristic psychologist desires to rid himself effectively and completely of mental contents. Accordingly, he holds to the view to which we have referred a few pages back: namely, whatever a reactor does to an object indicates what it means to him. The reaction itself is the meaning. Certainly this conception frees itself of a very crippling attachment. But it is unsatisfactory nevertheless, since it does not allow for a distinctive kind of response which we frequently perform and which rightfully may claim the name meaning.

Organismic Meaning—Before proceeding to a discussion of what we regard as a satisfactory description of a meaning reaction we must differentiate between meaning proper and the reaction of intention, which, in the popular mind, shares the same name. When the statement is made that someone intends to deceive me, that intention reaction obviously is quite different

from a linguist's meaning reaction, but the two are seldom differentiated in linguistic study.

The technical description of a meaning reaction is any response which determines what a following reaction is to be. For example, in case of the pronunciation of a printed word the perceptual response of the word determines the form of the later vocal utterance. Thus in the type-setter's illusion, if he perceives *phenomena* as *pneumonia*, he will then press down on a different set of keys from those he would have used had he perceived the words as they were actually written. This determining perceptual response may be regarded as a typical meaning response. Frequently, but not always, meaning responses are orientative or knowing reactions (PP 1, Chap. XIII).

We may distinguish between a meaning and knowing interaction on the basis that the former emphasizes a determining effect produced on a later reaction, as in the paragraph above, while in the latter the reactor becomes aware of the *meaning* of an object. Accordingly, if we assume that in our candle illustration on page 117, we actually do have a meaning or knowing reaction, the emphasis is upon the discovery of what a thing is. If we employ the term *meaning* for both kinds of interactions the former could be distinguished as emphasizing a meaning stimulus, while the latter stresses a meaning response. The writer disapproves heartily of this procedure, but proposes it in order to clarify a difficulty.

INTERRELATION OF MEANING AND SPEECH BEHAVIOR

What is essentially speech behavior involves no unique meaning reaction. Every individual has built up innumerable simple and complicated references which operate directly when the appropriate stimulus situation is present. We have already pointed out that linguistic responses may be automatic.

Now, of course, every response to a spoken stimulus includes a perceptual reaction system which has a determining effect upon the later reaction systems in a response pattern. Just as in our type-setter illustration, the perception of the words in the copy determines the key-pressing action, so in hearing what the speaker says the prior perceiving action determines the understanding or referee act. But there is nothing here peculiar to the linguistic circumstance.

Frequently, however, speech adjustments may be interrelated with distinctive meaning or even elaborate knowledge

reactions which precede the speech behavior. In a given situation one may not say anything unless one first becomes oriented to something. A child will speak of any horse he sees from the car window, but the adult may claim the distinction of speaking only of the horse which he knows is of interest to the person who sits beside him.

There are other situations in which meaning responses are called for—namely, those determining how one should speak. Thus under certain circumstances and not others one must speak diplomatically; under other conditions one can talk freely, etc.

In answering speech there may be in addition to the simple meaning reaction concerned in perceiving also an orientation act determining the answer. But here again we must distinguish the meaning response from the speech reaction following it.

SYMBOLS AS MEANING STIMULI

Having reviewed the ways in which meanings are and are not connected with speech, we may turn to the question of meanings in symbolic situations. Here we find at once that meaning reactions are essential features of such situations. Whenever the individual interacts with a symbol he is essentially interacting with a meaning stimulus object. When we understand a symbol we have acquired a capacity to have one thing stand for another. This means learning a relationship, one which may have been established by the person in question or someone else. In psychological writings the specific process is described as building up a paired association. When the process is completed each member of the couple is capable of serving as a substitute stimulus calling out a reaction to the other member. Here the term understanding as generally used refers to the fact of appreciating that x means y , and vice versa.

The actual process is that the symbol situation calls out an association reaction to another object: namely, the thing signified, the significant. This process contrasts with that of the speech situation in which two stimulus functions simultaneously call out a referential act. The building up of reactions to substitute stimuli is a somewhat similar phenomenon to that of unintentionally reacting to a context (when that is treated in objective terms) and to the conditioned reflex situation.

SEMANTICS STUDIES VOCABULARY REFERENCE PATTERNS

We now may formulate a statement concerning semantics in the field of genuine language. When actual language adjustments are studied the term semantics really refers to specific ways in which references are made—in other words, to verbal reference patterns. For linguistic psychology, semantic meanings are nothing more nor less than actual usages—particular ways of performing language adjustments. Psychological semantics, accordingly, connects more with the first level of conventional semantics than with the other two, though we must not overlook the great differences between actual language performances and the use of words in naming or other thing-language situations. Compare the grammarian's and the psychologist's interpretations of a speech event. When one says *The house is on fire*, while referring to the burning house, the grammarian regards the words as symbols standing for the burning house through a mental content in the mind of the speaker and the hearer. On the other hand, the psychologist describes the act of a person who is stimulated by a burning house to perform such a configuration of action. Among the circumstances involved we number not only the existence of a burning house, the necessity or desire to speak of it, but also the reactional biography of the person—(there are those who will simply yell *Water, water*)—the use (performance) of English words in a certain order and with a particular kind (dialect) of pronunciation.

Whatever fixity we find in linguistic response patterns may all be attributed to various dialectal and other group conventions. That is to say, many behavior configurations, whether vocal or gestural, remain more or less constant though subject to continuous change. But, after all, these behavior patterns are specific responses of persons which are mutable for that very reason. In discussing actual language adjustments we should, of course, differentiate between relatively individualistic and conventional reaction patterns.

Semantic study consists therefore of the observation of how persons actually do perform reference responses. Such study will include as a matter of course gestural behavior as well as vocal action. We suggest that all the conventional semantic phenomena such as euphemism, borrowed words, meaning transfer, metaphors, speech figures, etc., can be studied as such individual and conventional reference patterns. It is required only

that we think in terms of action rather than the meaning value of isolated words or symbols.

SEMANTIC CHANGE

Conventional grammarians divide semantics into two departments: first, the study of word meanings, called static (or descriptive) semantics; second, transfer or changes in word meanings referred to as dynamic (etymological) semantics. The student of psychological grammar, who deals with actual adjustments, cannot, however, divide off the one from the other.

As we have seen, individuals are constantly modifying their reference configurations. There are many ways in which persons can adjust themselves linguistically to stimuli within dialectal boundaries. But we may trace out certain patterns whose changes represent general dialectal or conventional modifications.

To illustrate, at one time it may be conventional to say *My father died*, when telling someone of my father's death, but later I may only say *My father passed on*. Here again the changes in reference pattern may be conditioned by one's own change of social status, education, performance, training, or by general transformation of social conventions. We propose that semantic change be regarded as changes in vocabulary style rather than as intentional or unintentional modification of symbols in relation to referents and *meanings*.

MATTER, FORM, FUNCTION, AND MEANING

Perhaps one of the best illustrations of how psychological semantics can be applied to the problems of formal grammar lies in the consideration of the relation between matter, form, function, and meaning.

In the first place, psychological semantics suggests that every language event can be analyzed into these four aspects; and, in the second, that none of them can possibly be at war with the others. To illustrate the latter point we consider Jespersen's (PG 56) example in which a disharmony is presumed to exist between three of them. Matter as the phonetic aspect he does not mention perhaps because it has no significance in the situation.

In the clever set-up which we reproduce below, Jespersen shows seven preterit forms, all with one preterit function, but

with five different notions or meanings expressed. Are there really phenomena that can be summed up in this way? Yes—when we arbitrarily perform the procrustean operation of stretching language upon a symbolic bed. No—when we study language as referential happenings.

A. FORM	B. FUNCTION	C. NOTION
-ed (<i>handed</i>) -t (<i>fixed</i>) -d (<i>showed</i>) -t with inner change (<i>left</i>) kernel unchanged (<i>put</i>) inner change (<i>drank</i>) different kernel (<i>was</i>)	preterit	past time unreality in present time (if we <i>knew</i> ; I wish we <i>knew</i>) future time (it is time you <i>went</i> to bed) shifted present time (how did you know I <i>was</i> a Dane?) all times (men <i>were</i> deceivers ever)

Why not substitute for all this machinery a set of statements as to how persons actually adapt themselves to their adjustment stimuli? The answer is, of course, that grammarians take their actions as symbols which should have one function—namely, to bear a fixed internal one-to-one relation to notions or things. According to this view *handed* should stand for or symbolize past time.

According to psychological grammar the function of a linguistic action is what it does, and so we find that a speech action bears a relation to its adjustment stimulus that is only external, accidental, and momentary. A mother says to her child *It is time you went to bed*. What other reason for saying *went* is not a future tense instead of a preterit than that grammar is ruled by formal logic?

From the standpoint of psychological grammar the line dividing matter, form, function, and meaning is an indistinct one—if it actually exists at all. It must be made plain that it is not the psychologist who is the original proponent of the idea to do away with these artificialities. Brunot (PL) has suggested this from the standpoint of teaching grammar. The psychologist, however, can supply the intellectual background and justification.

CHAPTER X

SYNTAX

THE LOGICAL DOMINATION OF SYNTAX

IN the syntactic domain of grammar Aristotle rules more omnipotently than in any other.¹ When a grammarian declares that syntax is the study of the interrelations of words in sentences, he is reciting a lesson from formal logic. We know his next utterance will be a remark about subjects and predicates.

Not only does the logic of the technical proposition hold syntax in its grip, but also the formalism of word organization. Nowhere better than in the conventional studies of syntax can we see the ghost of the transcribed text peeping through a web of grammatical insufficiencies, while the facts of living language adjustments remain thoroughly concealed.

We must, however, credit linguists with much profound criticism of the logical domination of syntax. Many grammarians there are who (1) insist upon the one-word sentence—tantamount to a rebellion against the logic of formal propositions, (2) ridicule the conception of ellipsis to the same point, and (3) deny the necessity for a copula, which also counts against the logic of grammar.

Meriting special mention here is the attack of Kalepky² upon the subject-predicate fallacy. This grammarian declares that sentences involve no subject-predicate relation, but rather indicate the connection between a doer and what has been done, or the relation between a condition and its carrier. None of these criticisms or emendations, however, can go far as long as speech is regarded as utterance-products. There is a great gap between adjustmental action to stimuli and the relationships assumed to be expressed by the various parts of sentences.

¹ So integrated are logics and grammars that logicians are now more than ever returning the compliment of making grammar logical by transforming logic into grammar. Thus a reviewer declares that "logic, according to Carnap, (*Logische Syntax der Sprache*, (Wien) Springer, 1934) is the syntax of language, when language has been formalized with a calculus so as to exhibit the rule for the construction and transformation of linguistic expressions." Nagel, *Journal of Philosophy*, 1935, 17, 49-52.

² Neuaufbau der Grammatik, 19ff.

Unfortunately, it is not only the logical motive which encumbers syntax, but the expressive or translation motive also. Although most grammarians write as though syntax were merely the study of arrangements of words in sentences, they really think of word order as a process of expressing meanings. The translation conception is therefore very prominent in the field of syntax, as illustrated by Jespersen's suggestion (PG 39, 45) that syntax does not start with word-forms or symbols, but with inner states. Morphology, Jespersen asserts, begins with the symbol and then inquires concerning its meanings or functions, whereas syntax begins with the meaning or internal aspect (that which is translated into forms), and then asks what symbol is used in the translation.

We may well question how much such a suggestion contributes to the scientific character of grammar. Although Jespersen declares that the inner and outer (meaning and form) are only aspects of the same thing, he tells us that English has no future (50), French no superlative (49), and Finnish no dative (182). To incline toward the translation view and away from the symbolic cannot possibly clear up syntactic problems. There is no substitute for breaking through to psychological syntax—namely, the study of actual linguistic adjustments.

PSYCHOLOGICAL SYNTAX

Psychological syntax is the study of the drama of speech—what really goes on when persons speak. As we have pointed out (Chap. II), the most vividly dramatic situations are found in conversation. But no matter how rapid or slow the tempo of the verbal play as it unfolds itself, it presents to the onlooker a unique series of happenings, in which two persons, alternately or simultaneously acting as reactors and stimulators, adjust themselves to each other and to the adjustment stimulus object. Whether the drama be tragic, comic, or neither, whether the persons describe, praise, blame, or inquire about something, a series of special activities is always going on. In each case, the three protagonists are playing some of the infinite number of rôles possible for them to assume. It is the function of the psychological student of syntax to record and describe these various interrelated happenings.

Notice how this dynamic unfolding of verbal play contrasts with grammatical syntax, which might be described as the con-

struction of a puzzle picture (sentences) out of its component parts—a process involving not only dead materials, but imaginary materials as well.

FOUR ASPECTS OF PSYCHOLOGICAL SYNTAX

In order to inquire effectively into the nature of a linguistic drama it is necessary to take account of as many features of the event as we can. Not only must we describe what is happening—whether a question is being asked or answered, information imparted or simple conversational intercourse indulged in—but also the qualities of the current action. This means that we must study the nature of the specific behavior configurations of speakers and listeners. Such configurations reflect in an intimate way the psychological background and present circumstances of the interacting persons. Their vocabulary, gestures, intonation, and accent mirror their characters, present moods, or affective conditions.

These in turn are definitely conditioned by the interactional settings under which the speakers and hearers are in interactional contact.

In order to include all these aspects in our study we shall enumerate what the four syntactic aspects contribute to the total linguistic drama. These four aspects are, of course, the two stimuli, the response configurations of the speaking and hearing persons, and the interactional setting.

THE CONTRIBUTION OF THE FOUR ASPECTS

The Adjustment Stimulus—Certainly what is being spoken of contributes unique and important qualities to the linguistic situation. The referent determines primarily what it is we are going to say, and how dramatic our speech will be. Consider first the nature of the object. If it is some simple natural event, our speech will most likely be a description of its qualities in a dull monotony of tone. If, on the contrary, the event or thing spoken of is important and striking, our drama takes on more intense characteristics. In that case we notice both the exciting movements and stirring gestures of the speaker and the enraptured attention and interest of the hearer. As an extreme illustration we cite the intimate and vivacious conversation of lovers.

It is a frequent rule that when the adjustment stimulus happens to be either the speaker, the hearer, or both, pale

descriptive reference is replaced by vivid articulations and gestures which can only be understood by those involved in the immediate situation. No conventional grammar could possibly do justice to the lack of orderly vocalization and the nuances and flavor of such speech behavior.

Our own casual observations are sufficient to suggest the great differences between linguistic dramas. Consider two individuals discussing promises unfulfilled and acts unperformed. Notice the contrast between the behavior situations of imploring for forgiveness, of accusing and denying a charge, and giving or receiving a compliment.

The Auxiliary Stimulus—Now turn to the influence of the auxiliary stimulus upon the linguistic drama. What references we make, and how, depend upon the person or thing spoken to. As we have seen, when the auxiliary stimulus function inheres in the speaker, we have expressive rather than communicative speech. The identity of the auxiliary stimulus determines how much is said or needs to be said. Moreover, a speaker may be talking more to the listener than about the normal adjustment stimulus.³

Often the auxiliary stimulus determines whether the speech reference is a mere pointing reaction or an elaborate vocal behavior. When speech is an interaction between two intimately related individuals the chances are that it will be informal. A look or a nod may take the place of much vocal intercourse. This is true especially if the two persons have also been in close mutual contact with the adjustment stimulus. On the other hand, the very intimacy of the protagonists in the speech situation is frequently a factor making for extensive talk.

Furthermore, the general social relationship of the interacting persons exerts a telling influence upon their speech. If the speaker considers the listener inferior, the pattern of his behavior may be overbearing. To his superiors and those of whom he asks favors, he may speak in condescending and humble terms. The loved one finds him more than tractable and yielding; hence his gestures and verbal acts are gracious and dignified.

While performing more formal references also, we suit our actions to the persons with whom we converse. The language system in which our references are framed—assuming that we

³ In such a case we may have to rename the stimuli, so that the persons spoken to will be called the adjustment stimulus and the object spoken of the auxiliary stimulus.

have command of more than one—is adapted to some particular listener. We do not speak English to one who understands only Italian. Our vocabulary is also adapted to the linguistic capacity of the hearer. When discussing the problem of justice with a child we speak differently from the way we do to an adult. The extent to which the speaker is influenced by the person spoken to, depends, of course, upon the amount of human experience that has been shared by the two individuals. For example, how differently one speaks of a foreign country to one who has also been there, as compared with one who has not. In sum, both the individual and conventional phases of our adjustments match the individual with whom we speak. In this fact we find the impetus to differentiate between individual and social psychological syntax.

Speaker's Response Configuration—In the case of actual speech, perhaps more than in literary language, style is the man. It makes a great difference who is speaking. In other words, there is much individual syntax. Notice how the speaker's linguistic equipment affects his type of vocabulary, how much or how little his speech conforms to accepted standards, the ratio of gestures to articulate behavior, etc.

In addition, many conditioning factors reside in the habits of the speaker—his general linguistic sociability and volubility, for instance. Nor should specific behavior conditions of the moment, such as moods, feelings, and general excitation, be left out of the reckoning.

Linguistic Interactional Setting—Linguistic behavior never occurs in a vacuum. The environing conditions which play a large part in determining the details of speech can be roughly divided into two sorts—psychological and social. Psychological conditions comprise the motivation of the person: what objects, conditions, events, and persons stimulate him to speak. Such factors as the presence of danger, the need to get some work done, or the desire to escape from doing the work oneself are samples of primarily psychological conditions which definitely influence one's linguistic adjustments.

In the same way, striking, beautiful, or baffling circumstances determine one's mode of speech, its precision and definiteness. Of course, these factors are all inseverably interconnected with the other three speech factors. It is well to observe at this point that such specific psychological conditions are

especially connected with interjectional language. When one finds oneself in a dangerous situation or in a greatly exciting circumstance one speaks interjectionally rather than in terms (behavior terms, of course) of the analytic qualities of things or persons.

Now consider the social or conventional circumstances which determine the form and manner of linguistic adjustment. Just as one's thoughts, manners, and other behavior are conditioned by the group in which one happens to live, so one's speech reactions are likewise modified. Thus the number and type of *parts of speech* used vary according to the linguistic structure of one's group. This condition goes deeper. There is really a hierarchical set of influences upon individual speech exercised by dialectal, colloquial, professional, and occupational groups.

THE PROBLEM OF SYNTACTIC UNITS

Whether linguists regard symbols (words) as the primary phenomena of grammar or merely as the vehicles or carriers of thought, they must face the question of syntactic units. In the first place, there are words that stand alone; and, secondly, there are many different numbers of words in the various syntactic combinations.

Now as soon as we approach the problem of syntactic units we find ourselves in the midst of the vexing problem of sentences. And here we must pay tribute to those linguists who have approached, even though at a distance and haltingly, the scientific description of speech syntax. We refer, of course, to those grammarians who have come out of the battle of speech units with the victorious assertion that the sentence is the unit of speech and that such units may consist of single words. This tribute is deserved, because it signalizes the ability of grammarians to profit by actual observation of speech behavior, despite a heavy burden of Dionysius Thrax (second century B.C.) and Appolonius Dyskolos (second century A.D.).

But what is a sentence? This, it seems, is difficult for grammarians to agree upon. We have already called attention to the work of Ries, who enumerates no less than 140 definitions (WS). We need not repeat that the inability of grammarians to agree upon the nature of a sentence goes back to the fact that their work is primarily based upon the conception of thing-language, and, secondarily, upon the two resulting misconcep-

tions we have so fully treated: namely, symbolism and expression. Each of the great number of sentence definitions will be found to consist of some specialized way of stating one or both of these concepts, or an attempt to shy clear of their unsatisfactory consequences.

Expression Motive—Both Wundt and Paul emphasize psychic material, which for them requires translation into word symbols. They differ only in their ideas of the technique by which this is accomplished. Whereas Wundt (S 2, 248) regards the sentence as the linguistic expression or symbol for the translation of synthesized or combined mental states, Paul (PS 110) regards the words of a sentence as the symbols for the separation or analysis of mental states.

Symbol Motive—To exemplify the stress of the symbol we cite the definition of E. G. O. Müller⁴—“autonomous word structure”—which ignores expression and any relation to thing spoken of. Both of these additions are made by Ries (WS 182), who also inclines toward spoken words. “A sentence is the smallest grammatically formed speech unit which brings its content to expression with a view to its relation to reality.”

Notice that the formulations which stress complex sentence organization cannot do justice to the one-word sentence, except as the grammarian claims that a word is or is not a sentence because of intention and function. Thus, Ries (WS 182) excludes from sentences interjectional and vocative forms (*Gebilde*), though he admits a short or incomplete sentence (*Kurzatz*) because it can be easily completed.

Hearer Motive—Among the attempts to obviate the difficulties inherent in the one-word utterance may be mentioned the definitions of the purposivists such as Wegener, Bühler, Kretschmer, and Gardiner. The hearer or purposive motive provides an alternative to the validation of incomplete and formless utterances by relying upon the intention and the function of the speaker's words. The purposivists rely upon the speaker's influence upon the hearer. This point is clear in the case of Gardiner, who defines a sentence as “a word or set of words followed by a pause and revealing an intelligible purpose” (GSL 98).

We cannot refrain from asking what is meant by a pause

⁴ *Zeitschrift für deutsche Unterricht*, 1895, 9, 182.

in this definition. How can we determine what this pause is and when it occurs? If the pause marks the unit of speech, then each word of the slow speaker, who frequently pauses between words, is a sentence. We are reminded here of Jespersen's remark (PG 334) that "it is perfectly possible to draw a line between what constitutes one, and what constitutes two sentences." No doubt Gardiner really understands by pause the end of a sentence as indicated by a punctuation mark. But this is begging the whole question. On the other hand, what is the sentence when the speaker continues a long harangue without a pause? No doubt, here, Gardiner would resort to intelligible purpose. Is this, however, any more definite? When the speaker says *Ouch! What?* or *No*, what intelligible purpose is revealed? Even if there is a hearer, what influence is exerted upon him? The intelligible purpose is no more than an arbitrary attribution to any utterance.

Other Motives—Among the other numerous specialized motives dominating sentence definition we need merely mention that (1) in addition to ideas or judgments there are also expressed desires, feelings, and willings, and (2) sounds or actions are mentioned as well as words.

It is undoubtedly a necessary step toward the understanding of syntax as well as of other linguistic phenomena to arrive first at a valid conception of speech units. This attempt is the small nugget so deeply buried in a great matrix of worthless ore. We submit, however, that this attempt is doomed to miscarry as long as a sentence is regarded as made up in some form of word-things or vocal action products.

To perfect our observation of speech and its analysis into units we suggest that all language (words and word combinations) be looked upon as actual behavior, so that the sentence, if it is regarded as a unit of speech, may consist exclusively even of a mere wave of the hand.

THE PSYCHOLOGICAL SENTENCE

For the psychologist the sentence definitely marks off a unit interaction, a single linguistic response to a dual stimulation. To know when we have one sentence and not two or more we merely isolate a single linguistic behavior segment. Although in practice it may sometimes be very difficult to know when we are observing a single linguistic adjustment, we are never at a loss

for a satisfactory conception of the nature of a sentence or speech unit.

To describe a sentence in detail we must study it as we do any other kind of phenomenon. Is or is it not primarily articulate? How many words from the standpoint of a dictionary are involved? What kind and number of vocal and non-vocal gestures does the adjustment include? Since many human activities are set in complex situations we must expect that a number of unit actions will be interrelated. To analyze out these speech-units we must attempt to discover the separate stimuli (especially the adjustment type) that may be isolated—say, from a conversational or other language situation.

SENTENCES AS SPEECH PATTERNING

As we have seen in Chapter VI, complex psychological adjustments constitute patterns. Speech adjustments, like other kinds, may or may not be complex. When a speech adjustment consists of a single gesture or word, it comprises a single reaction system; whereas, clauses, phrases, and sentences are patterns—that is, combinations of reaction systems.⁵ Superficially the most distinctive of these response patterns is, of course, word order. We must at once add to this, however, intonation, accent, and other vocal gestures, as well as voice quality and non-vocal gestures of every variety.

Furthermore, it is to be distinctly understood that the simplicity or complexity of an adjustment may be independent of what is said or the circumstances under which the reactions are performed. Thus the simple imperative word *go* or the interrogative *what* is just as eloquent and linguistically complete as the more elaborate *You must leave here at once, I beg of you to depart this very moment, or I wish you would tell me at once what he said to you.* From a psychological standpoint the simpler adjustments are entirely satisfactory and complete if the person has adapted himself to the particular situation of the moment.

As a general rule the linguistic adjustment pattern varies with the formality of the situation and the cultural standards of the group to which the speaker belongs. In the more intimate circumstances of speech these influences are set aside. Here we find the substitution of the single reaction system of *uh-hu* as the answer to the question *Are you planning to go with us to-*

⁵ For description of reaction systems and patterns see Chapter VI.

morrow? for the more elaborate pattern *Yes, I am planning to go with you tomorrow.* The latter form of adjustment constitutes to a great extent a repetition of the auxiliary stimulus action of the questioning stimulator.

This last language reaction pattern suggests an important point. As the action is presented we are assuming that the adjustment stimulus is the event of the second speaker's plan to go with the first speaker (or his party) at the time in question. But the same reaction pattern may constitute an adjustment to other stimuli, for example, the question *Are you "planning" to go with us tomorrow?* and *Are you planning to go with us "tomorrow"?*

PRIMACY OF SENTENCES

As our exposition has amply indicated, the sentence is to be taken as the unit of speech. Accordingly, the first application of the psychological study of the sentence is the clearing up of the problem of the primacy of sentence or word. Since we are not in any sense concerned with words—either as transcribed forms or speech products—but with linguistic reactions, the question of primacy disappears altogether, except as we turn to the question of speech development in individuals. Whenever we have a genuine linguistic adjustment, the unit is always a sentence. The early word reactions of children are merely juvenile forms of performing linguistic adjustments.

SENTENCES VERSUS PROPOSITIONS

If we use the term sentence for an actual linguistic adjustment we can set aside all grammatical specifications made for sentences on the basis of the logical proposition. It is a significant fact that although many recent writers appreciate the ineptitudes and difficulties of the logical death-grip upon grammatical description, they cannot rid themselves of it. In spite of many interpretative twists and turns they are unable to shake off from their thinking the hold of the proposition. Hence speech pattern is confused with logic, words are stressed instead of actions, numbers and types of utterances are interpreted on a propositional basis, words and word combinations are treated as coördinate, subordinate, etc.; language is still regarded as expression of thoughts or ideas, and such old concepts as copula and ellipsis are retained in modified form instead of rejected altogether.

The nemesis of subject-predicate thinking influences the liberal grammarian who admits a one-word sentence to ask: What is the subject in a one-word expression? Thus Sechehaye,⁶ who discusses one-term sentences of children, asks: What is the subject of which the single expression is the predicate? His answer is that the circumstances constitute the subject. Now surely this is a violent stretching of a fact to fit the propositional tradition.

Why subjects and predicates? Let us simply interpret the verbal or other action of the child or adult as a particular kind of adjustment to the coördinate stimulus object. This adjustment naturally may take on characteristics of a personal or social character. Certainly grammarians must notice the lack of relationship between their definition of a sentence as a subject-predicate combination when, in the case of a question, mere intonation gives an altogether different kind of adjustment. *The man is here* can only be fitted into the conventional propositional system when the symbols represent writing and not actual adjustment.

A similar viewpoint is expressed by Gardiner (GSL 260), who regards the subject and predicate as the thing meant and verbal response respectively. This view is undoubtedly based upon the idea that the subject is what you talk about, while the predicate is what is said about it. But Jespersen (PG 146) points out that in such a sentence as *John promised Mary a gold ring*, it may be said there are four things spoken of: (1) John, (2) Mary, (3) promise, and (4) ring. When we admit four subjects and probably an equal number of predicates, have we left any significance in the conception of subject and predicate?

SUBJECT AND OBJECT

Probably nowhere in the domain of syntax is the artificiality of conventional concepts and classification so well exhibited as in the discussions of subject and object. In one sense this classification is only an extension of the subject-predicate division of sentences, though, in another, there seems to be some appreciation of the reference to happenings.

As usual, the grammarian starts off with a favorable example. In the sentence *John strikes James*, it seems perfectly proper to speak of John as subject and James as object. This

⁶ *Essai sur la structure logique de la phrase*, (Paris), Champion, 1926.

example appears proper because there is a close correlation between the reference-utterance and the event of John striking James. A plausible definition is now worked out to the effect that the subject is the actor and the object the acted upon. But the grammarian does not abide by references; he thinks in terms of the relations of words in grammatical (transcribed) sentences.

Hence difficulties appear at once. Sweet (CP) has pointed out that in such a sentence as *John sees James* the definition won't work, while in *John is afraid of James* the subject and object relation is completely reversed. Then, too, the grammarian (PG 159) is bothered by the object of result. *John built a house* is regarded as quite different from *John eats an apple*.

But what is more serious for him is the absence of an object, as in the presence of the so-called intransitive verbs: *John sings well*, *John drinks between meals*. The extreme case, of course, is the one-word sentence in which the definition breaks down altogether.

The subject-object characterization meets with further difficulties in sentences of (1) condition, *John lost consciousness*; (2) the reflexive, *John injured his back*; (3) the reciprocal, *John meets James*; (4) the double (direct and indirect) object sentences, *John gave James a watch*; and finally, (5) the passive, *James is struck by John*. In many of the instances given, as well as in the (Greek) middle voice, the subject-object interpretation is far removed from a correlation with events.

But the plot thickens when we consider the absence of a subject. So far, we have been indicating the difficulties with the object. Certainly in a one-word sentence we have difficulty in finding either subject or predicate. We must conclude, then, that it is quite a futile performance to analyze sentences into subject and object.

To correct this situation we must turn from the artificial organization of words to the study of reference adjustments to stimuli. In general, then, we classify references on the basis of the particular pattern and the conditions influencing that pattern. I may or may not have some definite reason for performing such equivalent responses to the same stimulus situation as *John strikes Jack*, or *Jack is struck by John*. Perhaps the invention by grammarians of the logical and psychological subject, predicate, and object signifies their recognition of the

difference between linguistic adjustments and sentence or utterance analysis.

GRAMMATICAL RANKING

The various phenomena which grammarians call ranking or the structural organization of sentences admirably exhibit the difference between thing-language and genuine speech adjustments. The conception of sentence-ranking implies that sentences consist of words as smaller units, or of word combinations (clauses). In the case of clauses which are really sentences, the grammarian speaks of subordination, coördination, etc. Here we have rankings within rankings.

Word-Ranking—As an example of word-ranking we may consider Jespersen's three-rank conception (PG Chap. VII). His fundamental idea is:

that there is one word of supreme importance to which the others are joined as subordinates. This chief word is defined (qualified, modified) by another word which in its turn may be defined (qualified, modified) by a third word, etc.

These words in their order he refers to as primary, secondary, and tertiary. Further he asserts that there may be two or more coördinate primaries, secondaries, or tertiaries.

The further elaboration of this process provides Jespersen with a distinction between junction and nexus. The former seems to be a rather unsatisfactory form of word subordination—*the barking dog*—while the latter is an acceptable or complete sentence—*the dog barks*.

Such an arbitrary and artificial process of ranking words obviously has its roots in some sort of propositional basis. Operating here is the subject-predicate, subject-object motives as in the conventional speech-parts discussion. Notice that words constitute the starting point, their logical meaning providing the basis for their position and connection in the combination.

Fundamentally, what determines the primacy of a word? In an actual utterance why should a substantive be more important than a verb? Why in the sentence *You had better bow to the inevitable* is *inevitable* primary? Can abstractionism go further? Again we ask: How can we justify the conception of words limiting words? Surely here the so-called logical motive shows itself naked and unashamed. A fine illustration is the statement that *red* in *red-rose* limits the word *rose* to the special

class of *red roses*. But does this word limitation play any part in actual speech?

In concrete linguistic adjustments are there such word rankings? In the utterance *The red-rose is wilted* what possible significance can there be in saying that one word limits another word to a certain class? Actually, the speaker is referring here to a particular kind of event, and this pattern of response is optional with the utterance *that one*, especially when the speaker is answering the question *Which rose is wilted?* Naturally, he may also just as well point to the rose in question. We must ask: Why overlook all the concrete facts in this situation which will supply us with the answer to the question why the speaker performs a particular utterance reaction?

We cannot but conclude that all such word-ranking schemes throw grammatical studies clear off the path of actual speech phenomena into the field of word abstractions. Indeed, Noreen, who devoted considerable space to this problem of ranks, frankly deals with it as a logical arrangement of idea-expression. The same may be said of Sweet, Behaghel, Sütterlin, Brugmann, etc., but Jespersen no less overtly agrees when he says that there may be one-member word nexuses, since the other member is always present to the mind (PG 142).

Clause Ranking—When we turn from word to clause ranking we find that a descent has been made to sheer word organization in written forms. The question here is: How are subject-predicate combinations arranged with respect to each other in units of written composition? Here grammarians work out rankings of coördination and subordination without regard to the adjustmental character of the utterances.

To study sentence-ranking from the standpoint of psychological adjustments means to clear up at once some of the difficulties of the subject. For example, when one says *He is in the house and she is on the porch*, where is the necessity to call this a complex coördinate sentence, except for the influence of the arbitrary arrangement of words according to subject-predicate relations? Actually the speaker is referring to persons who are located in different places. This is the case when we have before us either a conventional paratactic or a hypotactic sentence. There is no doubt that the adjustmental standpoint enables us to clear up the question of the difference between a sentence, a phrase, and a clause.

THE SYNTAX OF THE HEARER

Concerning the place of the hearer in sentence-making, grammarians disagree violently. On the one hand, those who stress the formal character of word organization assert that sentences are solely the product of the speaker and entirely independent of the hearer.

According to Ries (WS 44) it was probably Wegener who first indicated the importance of the hearer as a factor in the construction of a sentence. Since that time such students as have emphasized the psychological aspects of speech (for example, Dittrich)⁷ or its purposive character (for example, Gardiner) have been considerably interested in the effect of sentences upon the listener.

Here is a typical case of linguistic controversy in which each side generalizes on the basis of certain considerations, with an inconclusive total result for the solution of the problem at issue.

Ries neglects the listener because he observes correctly that whether or not the listener understands the speaker makes no difference to the speaker's sentence organization. Gardiner, on the other hand, asks if the learned professor has ever reflected upon the nature of a sale or the technique of courtship. Ries is thinking directly in terms of formal sentence structure and probably indirectly of actual speech, in which a foreigner may speak without any understanding on the part of his hearer. Gardiner and the purposivists generally stress the purposive character of every utterance.

Objective psychology can throw some light upon the controversy. On the side of Ries, it is undoubtedly true that speakers can adjust themselves linguistically without regard to the hearer's adjustment. The hearer merely serves as an auxiliary stimulus. In this sense the hearer is an essential aspect of speech. Now Gardiner and his group think in terms of the situation in which the hearer is not only such a stimulator, but also in two senses a linguistic reactor. First, he hears the request, and, secondly he grants it.

Ries actually does admit the hearer in the sense that the speaker so far considers his auditor as to speak a common language and also to choose words and form his sentences with his hearer in view. Furthermore, Ries admits into his classification of sentence-types will expressions, which can hardly be said to occur always independently of the hearer.

⁷ *Grundzüge der Sprachpsychologie*, (Halle), Niemeyer, 1, 1903.

THE COPULA PROBLEM

Although logic for a long time has imposed the copula upon syntax there have been so many objections by grammarians that this problem no longer requires a major operation. The copula conception, of course, is really no more inept than many still rigidly held by students of grammar, but there are a number of conditions which make it untenable. In the first place, there are too many syntactically complete utterances which do not include such an element. Then, too, grammarians can never really forget that the copula cannot be ascribed to many languages, since some are not keen on verbs at all. Moreover, even English, which employs the copula so much in formal sentences, once did not include it as a necessary factor in its sentence form.

This does not mean that the copula is without its defenders. An interesting example is Gardiner (GSL 223), who asserts among other things that the copula backs an utterance by the speaker's authority or makes a statement more explicit. Thus he believes that the utterance *Lovely, that song* is not as effective or representative as *That song is lovely*. Surely for a writer who stresses speech phenomena this is a thorough capitulation to the formalism of grammatical logic.

The psychological student of grammar offers the suggestion that when the copula forms a part of a speech adjustment it is nothing but a syntactic or stylistic feature. One may perform innumerable speech adjustments without copulas. In writing, the copula is frequently used in deference to the institutional demands of one's speech system, when it is a conventional feature of that system. But the copula is never an indispensable factor of any linguistic behavior. It is clear that whatever the individual does in performing his referential activity constitutes the sum and substance of the language act. It is altogether unnecessary then to involve oneself in a discussion of propositions which are the exclusive sources of copulas.

THE FINITE VERB

Powerful evidence of the great hold that logic or external form has upon grammarians is revealed in the matter of the finite verb. Even grammarians who are willing to give up the copula as a necessary or desirable factor in a sentence still adhere rigidly to the general finite verb element. We again use Jespersen as an example. Because he is so forward-looking a

grammarian, he quotes approvingly the dictum of the Chinese grammarians that verbs are living, while nouns are lifeless, but adds that it is really word combinations that are alive or dead. Jespersen, of course, allows for non-verbal sentences. But nexuses like *the rose is red* appeal to him as more lively than the junction *the red rose*. Here is a patent instance in which Jespersen writes under the influence of logic and the conventions of formal written material, although he himself regards these influences as detrimental to grammatical study (p. 8).

If we think in terms of human behavior, we cannot say any speech adjustment is less lively than any other. All speech behavior is supremely alive—spontaneous adaptations to stimulus situations. Only when we deal with word-things may we regard some words or word-combinations as associated with life. Once more, we emphasize the fact that grammarians do not allow for answering speech, since they never think in terms of conversation. All speech is alive, though as we have already indicated (Chap. II) some is more intense than others.

A nexus, Jespersen believes, always contains two ideas: the secondary term adds something to the first, while in a junction the second term merely qualifies or restricts the first. We grant that somehow there is truth in this view, though we must depart from words and their connections. Jespersen is here committing the psychological fallacy of ascribing to words or responses the characteristics of stimulus events. Events, of course, are more lively than things, but the adaptations to these events may be equally lively. No matter how exciting and moving an event may be, we can just as effectively adapt ourselves to it linguistically by one word or even a gesture—to say nothing of a junction—as well as by a nexus.

THE CONCEPTION OF ELLIPSIS

Another fruitful field for the application of the psychology of speech to grammatical questions is that of the ellipsis problem. Although grammarians are fully aware of the ineptitudes of the ellipsis dodge, they still are without a general principle with which to lay this spectre. They merely observe the actual fact that persons speak in ways different from those that involve what are conventionally called complete sentences. The effectiveness of such speech obviates the need for the conception of ellipsis.

Here again, it is surprising that the conventional grammarian ignores the speech activities of the answering person. When we take account of answers—necessarily correlated with questions—there seems to be no need for repeating what the questioner has said. Accordingly, the fragmentary utterance is not only complete, but especially effective. When the answerer says *No*, it is highly supererogatory to say that this is an elliptic proposition with most of the elements of the proposition assumed.

TYPES OF UTTERANCES

The question as to how many kinds or types of utterances there are was variously answered by grammarians depending upon how close they stood under the shadow of logic. The older grammarians started out with the declarative sentence and grudgingly added as few as possible. A typical list included, in addition to declaration, interrogations and exclamations. The more modern versions of this list might read (1) statement, (2) questions, (3) desires, and (4) exclamations.

With the development of the expression influence the classes reached large numbers. A typical example is the list of Brugmann⁸ including eight main classes: (1) exclamation, (2) desire, (3) invitation, (4) concession, (5) threat, (6) wording off, (7) statement, and (8) question, with many subclasses under each. A similar list is that of Noreen (WBS 276 ff.), who starts with the two classes interjectional and communicative with the following classes under each:

<i>Interjectional</i>	<i>Communicative</i>
impulsive	exclamatory
repulsive	narrative
compulsive	voluntative
	elocutive
	interrogative

The subclasses are themselves further subdivided many times.

Grammarians are not generally sympathetic to these elaborate classifications, even though they accept the principle of mental-states expression. One of the most recent lists is that of Gardiner (GSL 186 ff.), who insists upon four: (1) exclamations, (2) statements, (3) questions, and (4) requests. He claims that this list is based upon the prominence of speaker,

⁸ *Verschiedenheiten der Satzgestaltung nach Massgabe der Seelischen Grundfunktionen*, Sachs. Gesellschaft der Wissenschaften, *Phil.-hist.-Klasse*, 70, (Leipzig), 1918.

things spoken of, and the listener. Exclamatory sentences stress the speaker, statements the things, while questions and requests stress the listener.

Gardiner's list compares with Bühler's:⁹ *Kundgabe* = proclamatory, *Auslösung* = evocative, and *Darstellung* = depictive sentences, and especially with Kretschmer's¹⁰ *Gefühl* = feeling, *Aufforderung* = demand, and *Aussage* = statement, sentences. He insists, however, that requests eliciting action from the listener must be distinguished from questions which elicit information.

Despite Gardiner's claim that he is the only one to date to analyze a single act of speech with fullness or exactitude (GSL 6), he is obviously quite heavily under the influence of grammatical formalism. He is thinking in terms of the organization of words. If a genuine act of speech is in question, how can one say that statements stress more the thing, or that exclamations stress more the person? Many speakers make statements because they like to talk or display their erudition. Why should we say the exclamation stresses more the speaker than the rose or the acrobatic feat? Again, why cannot the speaker be the listener of a second before who says *The sunset is gorgeous* to please the listener who was just the speaker? Does not the utterance *You committed the crime* stress both the thing and the listener? Even if this stress of the four factors seems to work, does it serve as an adequate criterion for the organization and differentiation of utterances? This question is all the more cogent since the enumeration of these factors does not suggest an actual speech situation, while, on the other hand, the way Gardiner handles them serves to obliterate the actual dramatic circumstances which characterize speech. In this fourfold sentence classification there is more than a suggestion that the words of language have conquered the sentences of speech.

In addition to the threefold sentence classification mentioned above, we may also refer to Jespersen's (PG 302) twofold division of all sentences into those in which the speaker does or does not want to exert an influence on the will of the hearer.

Admitting that all sentence classifications are arbitrary, and, furthermore, that when they are regarded as formal utterances

⁹ *Kritische Musterung der neuen Theorien des Satzes, Indogermanisches Jahrbuch, 1919, 6.* In his most recent book, *Sprachtheorie*, (Jena), Fischer, 1934, Bühler changes his terminology. *Kundgabe* becomes *Ausdruck*, and *Auslösung* becomes *Appell* (28).

¹⁰ *Sprache*, in Gercke und Norden, *Einleitung in die Altertumswissenschaft*, I, pt. 6. (Leipzig), Trübner, 1923.

or transcriptions they should be limited, we may still assert that, on the one hand, no purpose of understanding is achieved by such arbitrary enumerations, while, on the other, the study of actual adjustments is sidetracked. The only classification the psychological linguist can adopt is based upon speech situations—one that takes into account answers or, in general, the actions of the second speaker as well as the first. Nor can we exclude accusations, denials, consolations, etc. We may well regard the heaping up of sentence classes—for example, those by Brugmann and Noreen—as authentic tributes paid to the conception of specific speech patterns, howsoever subjective the basis of these classifications. The shift from the subjective to a more objective viewpoint would only add to the clarification and correction of the classification.

CHAPTER XI

MORPHOLOGY

MORPHOLOGY AS WORD ARCHITECTURE

IN his morphological studies the grammarian gets farthest away from actual language adjustments. For in this field he is preoccupied with things in their purest form—whether he regards such things as speech products or printed words. This follows from the fact that the inevitable variations in syntactic patterns force grammarians to emphasize style rather than words, while even the semantic (or meaning) character of word-symbols carries beyond the sheer forms. When we come to phonology, we find that even the most formal grammatical studies must keep within sight of actual language performances.¹

That morphology constitutes the study of word-forms demonstrates the grammarian's preoccupation with word architecture. The architectural arrangement of letters, syllables, and words is an impossible undertaking unless we concern ourselves with word-objects. This abstractionism is, of course, derived primarily from the analysis of transcribed word-things. When, for example, the English grammarian asserts that *ly* is the general adverbial suffix, or *ing* the general suffix of participles, he is overlooking the omission of such descriptive factors from the actual speech of persons.

SAPIR'S WORD STUDY

One of the most interesting of recent word-studies is that of Sapir (SL Chap. II). This writer assumes that the word and not the sound is the element of speech because only the former has the meaning requisite for linguistic phenomena. He adopts an algebraic symbol A for a unit, independent word-form (radical). A compound word such as *typewriter* or *blackbird* is represented by the formula $A + B$. Presumably there are words represented by the formula $A + B + C$, etc. When a word such as *sing* is capable of enlargement by some such affixative incre-

¹ Those linguists who take account of pitch modulation and phonetic modification suggest a bridge between sheer form and the speech character of words.

ment as *s*, *er*, or *ing*, the formula reads $A + [b]$, the brackets here indicating that the incremental value cannot stand alone. Similarly, when the so-called radical cannot stand alone we have the formula $[A] + [B]$ or $[A] + b$. The number of these formulae can be increased by taking into account various languages. Thus Sapir cites the Paiute word *wii-to-kuchum-punkurügani-yugwi-va-ntü-m[ü]*, translated *they who are going to set up and cut with a knife a black cow (or bull)*, with the formula $[F] + [E] + C + d + A + B + [g]' + [h] + [1] + [0]$. The $[0]$ increment, according to Sapir, conveys an unexpressed relational idea of subjectivity.² It is such symbols—regarded as necessary to represent what the speaker says—that form a connecting link between word architecture and linguistic adjustments.

This form of word analysis Sapir applies to the sentence *The farmer kills the duckling*. He asserts that there are thirteen semantemes—word-element symbols, each of which stands for a concept. Three of these are radical and concrete (refer to things—*farmer*, *duckling*, and *action—kill*), two derivational (a genitive element—*er*, and diminutive—*ing*), and eight relational (two articles, declarative mode, subjectivity, objectivity, two singular numbers, and present tense).

Clearly such symbols and analyses have little if anything to do with living language. Certainly they do not help us to understand speech adjustments. It is safe to say that whatever plausibility this particular dissection may have is clearly given it by the study of inflectional text material.

BLOOMFIELD'S WORD STUDY

No linguist for obvious reasons can get away from a discussion of sounds, forms, and meanings. Consequently word studies may favor one or more of these phenomena or be impartial to all. In a definite sense Sapir's word study is motivated from above, from concepts, and not from below, from sounds. By comparison, Bloomfield's analysis begins with basic sounds (phonemes) and moves upward through sound combinations (morphemes) to linguistic forms. Although the emphasis is initially placed upon the actual construction of words, Bloomfield finds it necessary to consider position or relation (grammatical function) and meaning. The accompanying table indi-

² This conception of a zero element is derived from the Hindu grammarians who believed it necessary to indicate that such a word as *sheep plural* requires to be distinguished from *sheep singular* on the analogy of horse-horses. See Bloomfield (BL 209).

cates the analytical procedure and the terminology employed. The reader will notice the three hierarchical steps or classes: phememe, glosseme, and linguistic form.

Meaning ← Lexicon ← Form as Meaning → Grammar → Meaning
 Element Class Element

Lexical Meaning ←	Lexical Form ←	Linguistic Form Linguistic Meaning	Grammatical Form →	Grammatical Meaning
Sememe ←	Morpheme ←	Glosseme (Form) Noeme (Meaning)	Tagmeme →	Episememe
None ←	Phoneme ←	Phememe (Meaningless)	Taxeme →	None

Although language for Bloomfield consists of actions, of signals, he asserts that linguistic science must begin with sounds rather than meanings (BL 162). In actual practice, then, he places the emphasis of linguistic science upon things instead of behavior. Morphology for him, accordingly, includes the construction of words and parts of words. Does this type of word study lead to speech-behavior description or text analysis?

LEXICOLOGY AND GRAMMAR

We may conclude that linguists are always more influenced by dictionaries than by grammars. Or, to put the matter more accurately, they are moved to base grammar or speech description upon the dictionary rather than upon analysis of actual speech adjustments.

It might be argued that only by taking fixed forms can the linguist find stable materials with which to work. But here the question arises as to whether linguistic science is the study of artifacts or actual speech happenings. It is admitted, of course, that to a certain extent every scientist must do some amount of violence to the phenomena he studies, in order to bring them within his investigative control. But he always recognizes that the formulations and descriptions he arrives at are artifacts, not that the artifacts he creates are the phenomena in which he is interested. He can never escape the problem of how well his formulations match those phenomena.

To illustrate the artificialities of word study consider the English statement *The mountain is high*, which is erroneously said to contain a present tense verb as compared with Chinese or Russian. To call *is* a present tense verb is to set up an artifact. The actual fact dealt with is a referential pattern, which differs when made by Chinese, Russians, and English speakers respectively. If we regard the word *is* as a fixed morphological unit we are in great danger of unwittingly assuming that speech consists of invariable forms for each situation (wrongly, meaning), whereas actual speech adjustments are variable adjustment patterns to particular speech situations. This variation in speech adjustment the grammarian takes cognizance of when he discusses word choice or substitution (BL Chap. XV).

The conventional grammarian's entire discussion of word-compounding exemplifies the contrast between speech behavior and the analysis of dictionary elements. When the speaker refers to *strawberries* it is certainly the extreme of abstractionism to say that he compounds *straw* and *berries* because he also says *raspberries* and *straw*. What is to prevent us from saying that the *straw* of *strawberry* is the same morphologic element as the *straw* of *distraught* except for the appearance of the written words? Similarly, on the basis of a like compounding process why should we not say that the *cran* of *cranberry* is the same as the *cran* of *crank*? Are not the *cans* of *I can*, *can that noise*, *the peaches are in the can*, and *ashcan* merely descriptively possible abstractions absolutely different from referential actions?

Bloomfield (BL 160) considers the question whether the character of forms can be determined by the meaning. For example, he says the *straw* in *strawberry* and in *strawflower* is phonetically the same, but we cannot say the meanings are the same. Here we have another example of the insufficiency of the word-thing conception. The difficulty Bloomfield says is owing to the lack of clear-cut distinctions in the world of things. Behind this statement is the assumption that words or morphemes are symbols for things, so that a one-one correspondence should exist between them. Now we submit that this difficulty cannot arise when we think in terms of linguistic pattern. From the standpoint of actual speech adjustments we have here historically developed ways of performing various referential adjustments. It is not scientifically significant that we can abstract out of speech similar sound-structures. Actually, of course, the

vocal act *strawberry* may be very different from the act *straw*. Here the phenomena of secondary phonemes and phonetic modification (sandhi) are to be taken into account.

A final example of the difference between word and linguistic behavior study we find in the various morphological *irregularities*. In what sense is the replacement of *s* by *z* in the plural of *house* an irregularity? Only because a certain kind of arbitrary selection of material has been made. The grammarian, for example, compares *house* with *glass*, *crease*, *curse*, and *dance* and finds this irregularity. But why not add *mouse* to the list when another irregularity appears? Are these really irregularities? These three types of references merely constitute different patterns of linguistic adjustment. And even this view is valid only when we think in terms of formal words. The consideration of another famous irregularity—namely, the *boy: boys; ox: oxen* method of forming plurals brings up a similar question. Were there no alternative interpretation we might have to think of this *en* plural as an irregularity. But the linguistic pattern conception is such an alternative. Besides, there are other irregularities—for example, *fox: foxes*, and *sheep: sheep*. Why should we place so much emphasis upon numerical incidence? The force of this procedure is altogether lost when we turn from word-things to linguistic patterning or how individuals actually perform their adjustments.³

WHAT IS A WORD?

We come then to the fundamental question of the nature of words. Linguists have frequently and sufficiently indicated the tremendous difficulty involved in determining what a word is. Jespersen (PG 95) declares that, "isolated words, as we find them in dictionaries and philological treatises, are abstractions which in that form have little to do with living speech." To illustrate his point he quotes *a maze* and *amaze*, *insight* and *incite*. Sturtevant (LC 11) offers *an iceman* and *a nice man*, and *he's not a tall man* and *he's not at all bad*.

Such illustrations as these may be regarded as merely striking examples from textual materials. On the other hand, when we study actual speech, we have sufficient proof that living language does not consist of word-units. It is really impossible to put into word form what speakers actually say. To transcribe as *give me* or *did you*, when actually *gimme* or *didja* is

³ On the problem of linguistic irregularities see Bloomfield (BL 238).

uttered, is to overlook entirely linguistic events. Consider, too, that we omit all reference here to gestures. We may well conclude that from the psychological standpoint words are formalized symbols and not actual speech phenomena.

SYLLABLES AS LINGUISTIC UNITS

The great difficulty in determining the nature of a word has stimulated linguists to make the syllable into the linguistic unit. Thus Sturtevant (LC 11) declares, "of the linguistic units smaller than a phrase, the only one which is perceptibly marked off in speech is the syllable." Unfortunately this writer, as well as later ones, is unable to offer a satisfactory statement of what a syllable is. Graff (LL 53-70) quotes a number of theories of the syllable, none of which is useful.

Syllables, more than words, are abstractions, and, when not based upon isolated sounds derived from pronunciation rhythms, are clearly letter combinations. Even from the standpoint of word things it is difficult to regard such non-semantic sound units as the units of speech.

MORPHOLOGY CREATES LINGUISTIC ARTIFICIALITIES

From the standpoint of living language we must conclude that conventional morphology consists primarily of creating a series of artificial abstractions. The psychologist must constantly insist upon the distinction between adjustments and static words. These adjustments usually constitute complicated patterns as we have already seen, but sometimes they are limited to single reaction systems (Chap. VI). When these language adjustments are vocal we have an approximation to what the linguist calls a word. But then we must distinguish between a response and a reaction product. All of the apparatus of radicals and their incremental or supplementary accessories may be regarded as descriptive categories imposed upon, and not derived from, speech. Words should be looked upon with as much suspicion as those original roots which are now condemned as the useless inventions of Schleicher and other philologists of his day.

Notice that we do not object to such word analysis on the ground that the speaker is unaware of words as he speaks. Such a criticism would resemble the denial of pituitary action because the secreting organism does not know of it. Nor do

we mean to point out merely that the speaker does not put words together as he speaks. Our point is, rather, that to describe linguistic adjustments in terms of isolated words is to misinterpret linguistic phenomena by making them into a series of artifacts.

At best we may grant that words are tools for the comparison of different methods of referring to things. They may be regarded as pedagogical devices for indicating differences between languages, but those differences can be demonstrated just as well without such labored constructions.

THE REALITY OF WORDS

Whether or not linguists notice the contrast between word-things and actual speech, they have not escaped the question whether isolated words have any speech reality.

So far as the writer knows, the reality of the word has been questioned only because linguists are impressed with the primacy of the sentence. For example, Ries (WS 60) declares that sounds, words, and word groups are artificial units or abstractions, since only the sentence is a linguistic unit. A similar view is expressed by Wellander,⁴ Graff (LL 95, 101, 121), and others. The observation of actual speech undoubtedly confirms this view. Sütterlin⁵ asserts that when the uneducated Frenchman utters the expression *il a aimé*, he does not know whether he speaks one word or three.

Those linguists who believe in the reality of words do so because of an inclination toward thing-language either as exclusively comprising linguistic phenomena, or as coördinate with vocal speech. As an example of the latter we cite Gardiner (GSL 121), who insists that words are the units of language, while sentences are units only of speech. He quotes Sapir (SL 34) to the effect that a naïve Indian who knows what is wanted can isolate words, though not radical or grammatical elements. Sapir's testimony does not, however, so much prove that words in linguistic adjustments are realities as that Indians are capable of the simple analyzing process required for the purpose in hand. That this is so is manifest from the consideration that irrespective of how erudite one might be, it is frequently impossible to say what is one or two words. Consider such examples as *today, breakfast*, German *Grossmacht*. Jespersen

⁴ Studien zum Bedeutungswandel im Deutschen.

⁵ Das Wesen der Sprachlichen Gebilde, (Heidelberg), Winter, 1902, p. 11.

shows that what were once two words have now become one—for example, *breakfast* and *vouchsafe* (cf. PG 92 ff.).

Vendreyes (VL 58) reminds us that we commonly say in French *wimsyae* and *wimmzel* for *oui monsieur, oui mademoiselle*. Are there two or four words here? This illustrates what happens in every language. Surely the consideration of actual speech behavior should settle the question concerning the artificiality of word analysis and set in sharp contrast language things and speech adjustments.

HOW WORDS ARE DERIVED

The lack of connection between word-study and the investigation of living language is impressed upon us when we inquire how we derive the concept of the thing-word as a unit. The psychologist points to at least three processes by means of which this is accomplished.

Text-Analysis—We have already discussed the manipulation of word-things as in analyzing a text. It consists essentially of isolating from word combinations elements which find different places in the organization of text. The materials of a book in this way can be separated into word units.

Even in text studies, however, we meet with grave difficulties. Is the French utterance *Je ne l'ai pas vu* a sentence of seven words, a single-word sentence, or just a word? Such difficulties are greatly multiplied when we study Turkish or Amerindian texts. The entire conception of compound words suggests the arbitrary nature of word isolation. The reputed greater power of some languages to form compounds as against others is without doubt a matter of general linguistic adaptation rather than a fact concerning the architectural construction of a word edifice.

Naming—Word units are also derived from the psychological process of naming things. To name something is to attach a label to it. Such labels when pronounced give support to the idea of the reality of words as units of speech. Does the fact of pronunciation, however, actually offer such support? There really is no difference between a pronounced and an unpronounced label. The fact of vocally referring to an integer or other symbol—that is to say, naming it—hardly puts it into the system of linguistic adjustments. The same proposition

may be made even if there is no transcription for the name or a visual symbol to represent it.

That the naming activity is the basis for the word unit conception is evidenced by the fact that the whole general conception of word units is closely integrated with the idea that all language consists of names. Although most grammarians expressly connect names only with things, the symbolic background of this view clearly makes all words into names for acts, relations, etc.

Behavior Analysis—The third source of word units is the vivisection of a reference activity. Words may actually be derived from an analysis of specific speech references. In this case it is impossible to predict what the elements will be until the actual reference behavior is observed. We are reminded once more that the language reference need not be in vocal form at all. Hamlet says *No nor woman neither, though by your smiling you seem to say so*. Smiling gestures need not be, though they may be, speech adjustments.

Obviously the difficulties here are infinitely greater than in the case of textual analysis. In the latter, trouble arises in transcribing speech, but in the case of behavior analysis the difficulty lies in dissecting a complicated reference action.

The speaker at one time says *The wood is heavy*, at another, *The wood is burning*. The linguist reifies the actions by transcription or some other method and then presumes to analyze the utterances into parts. This analysis, however, may be sadly misleading. Nothing really can be made of the utterances unless one knows what the speaker is doing in the way of referring to things. The analysis then turns out really to be textual analysis, otherwise one cannot cut up an action. This is evidenced by the utterance *He would if he could*. The *would* of this utterance is phonetically the same as the *wood* of the former utterance, but it is never called the same word in an analysis.

How do we know whether *bear* (a burden) is the same word as *bear* (animal)? The answer is, of course, by studying the speaker in his adjustmental behavior. Now what he is really doing is referring to his own sad human state *I must bear this burden*, or to an exciting incident *The bear has escaped*.

The process here is to analyze an action on the basis of the adjustmental stimuli involved. In all these cases notice that

there is no warrant for saying that words are units of language. When there are word units they are things and it is only by illegitimately making sections of speech into things that we can make such statements.

MORPHOLOGY AS CULTURAL SPEECH STYLE

The term *morphology* as applied to actual speech refers to style or form of adaptation. As we have already seen, language adjustments are polarized between personal adaptations to stimuli and the conventionalities of an idiom or dialect. When a Frenchman adjusts himself to the same adjustment stimulus as an American, his reaction pattern is obviously different. The variations are describable not only in terms of morphology, but in general phonetic and gestural character. Here are numerous social, psychological, and cultural phenomena that have been formalized into lexical abstractions.

The student of psychological language, however, will never overlook the great differences between what individual speakers actually do in the way of language adjustments and what is recorded in the grammar book. For him, local dialectal and idiomatic speech patterns are immeasurably more important than ultra-conventional forms of literary language. It is a pertinent question whether we should allow any of the results of word analysis, such as roots and their inflectional increments, to be regarded as genuine speech phenomena.⁶

APPLICATIONS OF SPEECH-STYLE CONCEPTION

As a test of the validity of the speech-style conception we may inquire into its applicability to speech studies. Let us then ask: What advantage can be derived from the use of this conception in three different situations?

Original Language Study—Malinowski (MM) has vividly portrayed what happens when an anthropologist brings to the study of a new language a bias of morphological forms. He informs us, though not using our terminology, how far one is from knowing (using) a language even when well equipped with word forms and their relation to the word equivalents of other languages. We may interpret Malinowski as insisting that to know a foreign language (be able to adjust oneself linguistically in

⁶It is important to take account here of the admission of morphologists that all languages partake in some measure of the patterning processes of all others.

that manner) one must be able to adapt oneself by responses similar to those of the native speaker.

When we resort to word-thing translation, there is great danger of misinterpreting the nature of a group's speech. This is what frequently happens when the language student practices what we might call linguistic literality. For example, Graff (LL 192) writes, "In Herero 'I am greater than he' *Ami omunene pu ye*, which is literally, 'I am great next to him.'" Now this sort of translation clearly involves considerable misinterpretation of the nature of the Herero language. Foreign speech is translated into one's own idiom, which in turn has previously been translated into professional abstractions. The capitalization of *Ami* is symptomatic of the literal technique of handling speech.

There is a sort of linguistic egocentricity at the basis of the literal translation technique. We are inclined to think about other languages in terms of our own language habits. Thus, instead of attempting to describe what speakers actually do, we merely juggle static speech symbols. For the most part, translation is thought of in terms of equivalent words or word combinations. This gives rise to all sorts of descriptive peculiarities. For example, shall we translate French *J'ai été chez vous* into English *I was at your house*, or *I have been to (with) you*? Can we translate German by putting the non-finite part of verbs at the end of the sentence? Such questions really do not arise when we think in terms of linguistic reactions to stimuli. Psychologically speaking, the rule of translation is to discover what kind of language adjustment the person is making from the standpoint of the adjustment stimulus, then to indicate the corresponding ways in which this activity is performed in different language systems. More: one is obliged to take into account the alternative ways of performing such action within a single language system.

The Comparison of Languages—When a linguist declares that English has no future tense or that French lacks a superlative, he is thinking in terms of morphological forms. At the same time he is misguided by the linguistic egocentricity we have mentioned to make false language comparisons. When we compare languages on the basis of actual speech adjustments we find that the presence or absence of certain morphological forms is merely a matter of different cultural speech patterns. Within a particular language system the individual adapts him-

self in one way rather than in another. He utters certain words rather than others, performs one type of gestural behavior instead of another.

The speech-style conception, therefore, prevents us from so misconstruing language comparisons as to find great superiorities and inferiorities in different language systems. To illustrate this process we quote the following statement:

There are numerous languages, especially on the American continent, which have not gone beyond the naming of objects. . . . Thus one cannot at this stage speak of white or of runs but only of such objects as white rabbit or running rabbit, or at best of white thing or of running thing.¹

Are not such differences in speech entirely a matter of language patterning? It is certainly incorrect to insist that the American Indians have a language inferior to that of the Europeans who pattern their responses otherwise. It is as though one should say that the Italian, who says *voglio* instead of *I will*, speaks an inferior language, betraying a lack of intellectual capacity to separate the *I* and the *will*.

Interpretation of Linguistic Evolution—As our third suggestion for the application of the speech-style conception we consider its service in the interpretation of linguistic evolution. Linguists assume a development from the holophrastic language of the American Indians, say, to an analytic type of speech patterning, with a mid-point located perhaps in the inflectional morphology of classical language. Obviously, all sorts of changes in linguistic patterning can be traced out in detail, but there is no possibility of discovering a unilinear evolution of morphological pattern from any other type.

When a Chinook speaker says *i-n-i-a-l-u-d-am* (*I came to give it to her*), or a Fox speaker *eh-kiwi-n-a-m-oh-t-ati-wa-chi-(l)* (*then they together kept (him) in flight from them*), he is merely performing a culturally determined mode of adaptation in all respects similar to that of the Spanish or Chinese speaker. This morphologic pattern no doubt is as highly evolved as the English. Indeed, were it not for the morphologic-construction theory, it would never appear to us as a more primitive way of speaking.

¹ Bloomfield, *An Introduction to the Study of Language*, (N.Y.), Holt, 1914, 63 ff.

CHAPTER XII

PHONOLOGY

SOUNDS AS THE MATERIALS OF SPEECH

As we go from semantics to phonology it would seem that we approach closer and closer to concrete speech activity. Actually, aside from the suggestion of vocal action, we find a tremendous artificiality. The constantly repeated statement of linguists that sound is the material of speech implies that sounds are stones, which bit by bit are cemented together to produce speech mosaics. Thus any conventional grammar offers a limited series of vowels and consonants presumed to make up a language. Can abstractionism go further?

Phonology is decidedly influenced by the alphabet. The various ingenious analyses of speech sounds are stimulated by the symbols employed to transcribe vocal speech. Whether the phonetician is primarily interested in speech production or speech qualities, he treats sounds as isolated, differentiable elements which can be represented by unique symbols, much as the chemist symbolizes his atoms. On this basis the linguist occupies himself either with written characters or with conceptual sounds, but not with actual speech utterances.

To a certain extent the speech-materials conception is made inevitable by the exigencies of description. How else, one might ask, can vocal speech be described except by translating vocal behavior into visual symbols? True enough we cannot always re-enact speech behavior in order to refer to it. But, on the other hand, our descriptions must tally with actually occurring phenomena.

PHONETIC ABSTRACTIONISM

The letter has killed the spirit. It is not a far-fetched suggestion that the preoccupation with letter symbols has misled grammarians to murder a living action in order to dissect out of it fixed sounds. Are speech reactions made up of such sounds put together? Nothing is more appropriate here than the poet's words:

Wer will was Lebendiges erkennen und beschreiben,
Sucht erst den Geist heraus zu treiben,
Dann hat er die Teile in seiner Hand,
Fehlt, leider! Nur das geistige Band.

Taking our departure from actual speech, we proceed to sum up some of the numerous objections to phonetic abstractionism.

In the first place, the conception of language materials is based upon false premises. Phonological studies presuppose that speech consists exclusively of auditory vocal phenomena. No room is allowed for gestural language, even though ordinary conversation involves much behavior which is visually presented to the auditor.

Nor are vocal gestures regarded as more than phases of conventional words. The specific stress, accent, and intonation of particular individuals are given scant recognition. However, the conception of secondary phonemes (BL 90 ff.), sound modulation, and sandhi modification signifies a tacit appreciation of adjustmental speech.

After all, do sounds maintain themselves in any fixed and additive manner? Rather, are they not modified by their contexts? While phoneticians know that the *t* of *tune* is different from the *t* of *sting*, and that the *r*'s in *river* are different, this knowledge does not play an important part in their descriptions. Grammarians similarly neglect the fact that sounds vary with time and circumstance, so that Meader declares: "It may be seriously questioned whether one ever makes the same group of speech movements twice in a lifetime" (MPL 218). Different individuals perform still different sound actions at given times from those performed by the same individuals at various times. Variability in pronunciation occurs because of the general variability in the total adjustmental pattern when a speaker adapts himself to a given type of psychological situation.

Another criticism of the conventional speech-materials conception is implied in the question: What sounds make up a language? Does any English grammar really inform us concerning the sounds actually used by individuals? Does not the utterance *Ilproblygo* more accurately represent the action than the grammarian's *I shall (will) probably go*?

Bloomfield (BL 90) states that "the number of *simple primary phonemes* in different languages runs from about 15 to 50," and that Chicago Standard English has 32 (85, 90). Such a statement naturally reduces a language to very abstract com-

mon denominators. The psychologist, however, is interested in questioning the entire concept of a *standard* language from the standpoint of speech adjustments. To discount the innumerable dialectal and individual variations within speech communities is to place very sharp limitations upon actually occurring events. Writers frequently compare the great variations between actual speech and the so-called standard utterances of good usage. As an example, consider the speech of Shaw's heroine in *Pygmalion* with Standard English.

Ow, eez ye-oo a san, is e? Wal, fewd dan y'de-ooty bawmz a mother should, eed now bettern to spawl a pore gel's flahrzn than ran awy athaht pyin.

Oh, he's your son, is he? Well, if you'd done your duty by him as a mother should, he'd know better than to spoil a poor girl's flowers and then run away without paying.

Wilson¹ relates that when the preacher Spurgeon was once asked how to distinguish a Baptist from an Episcopalian he said:

A Baptist reads from his Bible the text, "Ee that has eears to 'ear, let him 'ear." But an Episcopalian intones it, "He that has yaws to yaw, let him yaw."

In the same article the writer quotes Shaw as follows:

All the members of the B.B.C. committee speak presentably; that is, they are all eligible, as far as their speech is concerned, for the judicial bench, the cathedral pulpit, or the throne. No two of them pronounce the same word in the English language alike.

Phonological as well as other grammatical studies must take into account what the Germans call *Vulgär-Sprachen* and *Umgangssprachen*, since generalizations made on the basis of standard or learned speech are only partial descriptions.

PHONOLOGY AND PHONETICS

As so often happens in the scientific world, it was the laudable aim to be exact in the description of speech that led to the misinterpretation resident in the speech materials conception. The development of precise sound studies has crystallized the extreme phonetic abstractions.

The obviously complex phenomenon describable as the utterance of a single word may be analyzed into several phases. First, there is the physiological process of producing the sound—the action of diaphragm, lungs, larynx, mouth, tongue, teeth,

¹ *New York Times*, February 25, 1934.

etc. Secondly, sounds can be studied from the acoustic or physical standpoint. Physical vibrations may be stressed or the acoustic qualities such as pitch, loudness or intensity, and timbre differences.

It is not surprising, therefore, that linguists have declared such studies to be but remotely satisfactory, since there is the perennial belief that sounds in themselves are not linguistic, but merely symbols or carriers of meaning. In this connection we refer to Sapir's² contrast of the *wh* sound as a by-product of the act of blowing out a candle and as part of the verbal utterance *when, whiskey, wheel*

Troubetzkoy,³ centers the opposition between phonology and phonetics about the definition of the term *phoneme*. Winteler⁴ he credits with distinguishing as early as 1876 between phonic elements which have capacity to express semantic and grammatical differences and those which have not. Later, Sweet passed on a similar distinction to his pupils, especially Jespersen, but neither of these scholars really made much of it. Nor did De Saussure, who first suggested the term *phoneme*. Although the latter distinguished between material sounds and incorporeal linguistic significance, he still regarded phonology—the science of phonemes—as the study of the physiology of sounds.

It was Baudouin de Courtenay, according to Troubetzkoy, who first made a genuine separation between physical and physiological sounds and psychological phonic images—in other words gave the term *phoneme* what Troubetzkoy calls its present meaning—namely, the element of psychological language—and placed it within the field of psychophonetics instead of physiophonetics.

From an objective psychological standpoint we can appreciate the advantage of the new definition of phonemes. Certainly the idea that sounds are the materials of speech was a faulty and in-serviceable one. But how much better is the new one? How significant is it to regard speech as incorporeal psychic significance? Indeed Troubetzkoy objects to Baudouin de Courtenay's definition of the phoneme as the psychic equivalent of a sound, since sounds themselves are not purely physical. What divides off a phoneme from a sound is its differential character which gives it linguistic value. Troubetzkoy adds that

² Sound Patterns in Language, *Language*, 1925, 1, 37-51.

³ La Phonologie actuelle, in *Psychologie du Langage*, (Paris), Alcan, 1933.

⁴ Author of Die Kerenzer Mundart des Canton Glarus, (Leipzig), 1876.

the school of Baudouin de Courtenay and especially his Russian disciples have freed the phoneme from its psychic definition.

PHONOLOGY AND PSYCHOLOGY

The commendable deviation from the idea that the phoneme is a psychic phenomenon undoubtedly leads only to the conception that it is a symbol, as evidenced by Troubetzkoy's own formulation. This writer stresses the distinction between phonetics and phonology (*loc. cit.* 232) on the following basis:

The phonologist seeks to enter into the linguistic consciousness of a speech community in order to study the contents of the differential phonetic ideas composing the significance of the words of that language.

Grossièrement parlé, la phonétique recherche ce qu'on prononce en réalité en parlant une langue, et la phonologie ce qu'on s'imagine prononcer.

Troubetzkoy is interested in the fact that what is actually said changes from one moment to another and from person to person. But what one imagines oneself to be pronouncing does not change. Important for him are the facts that phonemes are symbolic parts and parcels of a concrete phonological system and that phonology can demonstrate their place in the structure.

The same thing is true of Sapir's notion of *sound patterning*. He believes that he has demonstrated:

How little the notion of speech sound is explicable in simple sensorimotor terms and how truly a complex psychology of association and pattern is implicit in the utterance of the simplest consonant or vowel (*loc. cit.* 40).

Linguistic symbolism is obviously inseparable from a mentalistic or psychic correlate. Yet these concepts of sound patterning and the inevitable relationship of all sound phenomena in a given language manifest an approach to the consideration of speech behavior as interactions with linguistic group institutions. But speech patterns are still regarded as things, though in a more dynamic relationship. As Troubetzkoy points out (246), present-day phonology is universalistic and configurational versus individualistic and atomic. If phonology is to be truly descriptive of speech, the patterns must be regarded as interactional responses and not symbolic.

PHONOLOGY AS SOUND INTERACTION PATTERNS

Once more we repeat that the specific patterns of linguistic adjustments vary tremendously. The speech response configurations differ on the basis of intimacy of speakers, kind of adjust-

ment stimuli, circumstances under which one speaks, etc. Now vocal behavior patterns constitute merely one of these many ways in which linguistic adjustments are made.

Phonology, then, for the student of behavior is the study of linguistic interactions which are primarily vocal in form. The phonologist describes what the person does, the kind of sounds he produces—their qualities, stresses, accents, etc. He takes account of the ratio of vocal utterance to hand gesturing, facial gesturing, etc. This phonological pattern is therefore a matter of individual behavior, even though it is conditioned of course by the institutions of the individual's groups (ethnic, dialectal, occupational, social, etc.). Because of this institutional influence we can find similarities in sound patternings and make statistical organizations of them, thereby obtaining an approximation to a conventional linguistic phonology. We may then speak of Dutch, Chinese, German, or French sounds. But we start with a view that allows for the so-called conformity of persons from variously chosen arbitrary standards.

Comparative phonology, it follows, consists of the comparison of the sound patterns of individual speakers who have built up their speech behavior in contact with different language habits in dialectal, ethnic, and other speech community groups.

Naturally we object neither to the analysis or dissection of speech in order to throw light upon such behavior, nor to the resulting descriptive abstractions. But such an analysis must not transform living and ever-changing linguistic responses into fixed structures built up from static materials. It is doubtless possible to analyze specific speech behavior into convenient units. The resulting units cannot, however, be regarded as that out of which connected discourse is synthesized. All classifications and comparisons must in the final analysis go back to the actual behavior of particular individuals.

PSYCHOLOGICAL AND GRAMMATICAL PHONETICS

One of the advantages of the psychological view of phonology is the light it throws upon the rivalry between the acousticians and the articulators. The differences arising between those who stress either physiological action or sound qualities are owing to the fact that each partisan arbitrarily selects an abstracted feature of the speech adjustment and regards it as the primary factor of the speech event. From a psychological standpoint

neither one of these positions can be superior to the other; in fact, both are indefensible.

Workers with sound phenomena cannot take the position of the historian of language—namely, that he is dealing with textual material. Accordingly, the student of sound takes account of the total phenomenon with which he is dealing—none other than the linguistic adjustment. In other words, what a person in a speech situation does in interaction with stimuli. Obviously it cannot be adequately described in terms of a single feature of the whole.

In studying a language event are we not doing the same thing we do when we study an act of shooting? And how much do we know about the shooting response even if we make the most meticulous study of the muscle movement constituting part of the trigger-pulling act? We might ask the same question about the intensive study of the sound produced by the discharging gun. This is not an illegitimate question, in spite of the fact that there is no instrument used in the linguistic speech production when compared with the shooting incident. We wish merely to point out that we cannot confine ourselves to the study of a single abstracted detail of what is always a very complicated event. Not a few phoneticians themselves raise doubts concerning the contribution of refined phonetic study to the understanding of speech (LL 9, 129). Is not the insistence upon the reality of sound patterns and total sound systems as over against isolated sounds a dim recognition of the part that the speaker plays in the total event? The interrelated stimulatory phenomena must of course be included to achieve an adequate description, as outlined in Chapter VI.

VOCAL INTERACTIONS AND PSYCHIC PHONOLOGY

The linguist we assume is fully aware that sounds are not the materials of speech. We have already referred to Troubetzkoy's statement that phonology as against phonetics studies what one imagines is pronounced. We may also quote Graff (LL 40): "The sounds of a language are not absolute but relative values; they are parts of a whole which exist as such in the minds of the speaking community." The recognition of the evil in the speech materials conception is good, but its exorcism is bad. This appeal to putative minds has no place in a scientific study of speech.

Since linguistic phenomena are referential interactions and not sound making actions, it is plain why there can be such variations and omissions of specific elements in the behavior pattern. To make a reference is to do something like throwing a stone. Now we can throw a stone in many ways, although some items of stone-throwing must be very carefully and exactly performed, as when we try to hit a small mark. Similarly language action can be performed in various ways, depending upon whether one talks to oneself or to some other person, whether the other individual is or is not an intimate, whether one or both persons are or are not familiar with the adjustment stimulus, etc. Contingent upon the specific linguistic situation one may or may not use few or many gestures, articulate carefully, choose particular words, etc. Indeed, no sounds need be made at all. The psychologist, in order to derive scientific descriptions, finds it necessary to put phonetic speech into a system which includes all sorts of gesturing, as in mute speech. From this standpoint it is clear that phonetic speech is an abstracted variety from a large series. At best, phonetic sounds are abstracted from such abstract speech. At worst, they are artificially created materials studied by the analytic and instrumental techniques of the physicist.

VOCAL INTERACTIONS AND PATTERN SYMBOLISM

The obvious difference between speech-material sounds and actual speech made it inevitable that linguists should attempt to correct the speech-materials conception. But none of their attempts (contrasting: (1) articulations with acoustics, (2) expressive with non-expressive sounds, and (3) psychic phonology with material phonetics) have really overcome the difficulty. Is the case any different with Sapir's contrast between sounds as carriers of meaning and as factors in other situations? Hardly, since this contrast, like the others, is founded upon the symbol-meaning idea, which does not harmonize with the facts of speech phonology. For this reason we examine in detail Sapir's differentiation between symbol-meaning and other articulated sounds.

In his paper on *Sound Patterns* Sapir offers as the "essential point of difference" between the *wh* sound of *when, whiskey*, etc., and its candle-blowing equivalent that the former belong to a "definite system of symbolically utilizable counters" (39, also 38). And again, he writes that a speech sound is "material

for symbolic expression in an appropriate linguistic context" (50).

Here, the inevitable connection which exists for linguists between sounds and meanings is brought fully to the surface. Sounds in their patterned relations are regarded as symbols. Moreover, their symbolic character is presumed to give them their specifically linguistic connotation over and beyond their purely phonetic value.

Upon what, we ask, is this symbolic conception founded? In part, of course, upon the general linguistic tradition that speech phenomena are symbolic. We have already sufficiently discussed this notion (Chaps. V, VI). So far as sounds in particular are concerned, Sapir derives support for his belief from the fact that linguistic sounds are not *physical* or purely *sensori-motor*. We may well agree that they are not, but does this make them symbolic?

Whence are sound-symbols derived? Only from logical abstractions. Are the linguistic *wh* (*wh*)istle, (*wh*)ere, etc., and other sounds called counters because they operate as actions in particular stimulus-response adjustments, or do they operate in such adjustments because they are counters? If the former is true, as we believe, their symbolic character evaporates.

We suspect that this is a case of substituting a description for a phenomenon described. To the writer it is significant that Sapir calls the candle-blowing sound *wh* a sign of the blowing or attempted blowing out of a candle. Let us consider the different characteristics of the two sounds as enumerated by Sapir.

In the first place, Sapir says the candle-blowing sound is a physical by-product of a directly functional act, whereas the linguistic *wh* has no direct functional value, but is merely a link in the construction of a symbol. This is not, of course, a distinction between the sounds at all, but a characterization of them as factors (not products) of different kinds of acts. Is there really a difference between the two sounds when taken in abstraction from the psychological situations in which they are found? When isolated in this fashion, the sounds are not only very much alike, but also share their resemblances with non-humanly originating sounds, such as those from a steam exhaust. This kind of similarity constitutes what is probably the only basis of fact for the so-called imitative sounds of speech. We suggest tentatively, therefore, that the differences in the acts in which the sounds are diverse are really differences

in interactions or adjustments, and not in the sounds themselves.

Secondly, Sapir calls the candle-blowing *wh* a sign for an act of single function, because each act of blowing out a candle is functionally equivalent. The linguistic *wh*, on the other hand, is a counter in a variety of functional symbols. He goes on to say that a series of candle-blowing sounds has an absolute functional and contextual adherence. Here Sapir is really making conditions for his own purposes, since there is no justification for fixing this candle-blowing *wh* as a sign for an act of single function. Does not this sound occur when you blow smoke, when you blow dust, and in many other situations? On the other hand, when one deals with a sound as a fixed symbol, it is also a sign for a single function. The *wh* of wheel is fixed in that setting, as over against the *wh* of whistle. Actually, of course, we are not dealing with fixed sounds or signs in either case, but with acts, each of which is an adjustmental response in a particular situation.

Thirdly, Sapir declares that the two sounds in question are different both acoustically and in intensity. Here again it is only by fixing the linguistic *wh* on the basis of its letter symbols that we cannot ascribe to it as much variability in quality and intensity as to the candle-blowing *wh*. We might argue that the linguistic action can be much more variable than the candle-blowing when we consider that the same reference can be made by an altogether different kind of reaction system. Instead of saying *When are you going?* one can say *Are you going now or later?* The extreme case here is the performance of metaphor and euphemism reactions.

Fourthly, it is asserted that the speech sound *wh* has a large number of associations with other sounds, while the other *wh* has not. Does this mean anything more than that each sound or act is torn out of a different form of psychological adjustment situation?

Sapir's final point somewhat reverses his position in the second and fourth points, in that he makes his speech sound *wh* one of a definitely limited number of sounds. Here it takes on the same sort of fixity that he ascribed in the second and fourth points to the candle-blowing sound. This merely means to say that actually the activity in which this sound is a factor occurs only in a specific set of adjustments.

We must conclude that all the characterizations of the two sounds—really acts—and the differences between them are based

upon actual adjustments. Since, as we have already frequently pointed out, all acts are interactions, they must be described in terms of stimulus situations and settings. The character of the stimulus object and its function and the circumstances surrounding the acting individual determine what he does. One of the important differentiations between the two situations—namely, blowing out a candle and saying *when, whistle*, etc., is that in the former case there is a double stimulation, while in the latter there is only one. The psychological aloofness of the *wh*, which Sapir ascribes to it, from each of the other sounds with which it forms a system is owing entirely to its constituting a distinctive phase of speech adjustment pattern.

Our criticism of the symbolic conception in no wise contradicts Sapir's really fundamental point concerning the patterning of speech sounds. In fact, we insist that the adjustment conception brings into relief the complex and unique patterning of language systems. In other words, conventional language—the conversational type at least—consists largely of actions which represent behavior built up in particular social-psychological and anthropic situations, and are therefore describable in terms of particular dialectal or Standard language formulae.

THE PSYCHOLOGY OF SOUND SYMBOLISM

Language-thing conceptions are inextricably interrelated with symbol ideas. But how do sounds take on their symbolic character? Is there a natural relationship between words and the things they represent? Do the sounds of words imitate the things spoken of? Are there certain words peculiarly fitting to *express* certain ideas or things? Each of these questions has been affirmatively answered in linguistic history.

Natural Symbolism—The first question can be traced at least as far back as Plato's *Cratylus*. In this early period we find only a generalized discussion, lacking a basis both in the comparison of different languages and a critical appreciation of the detailed facts of any one.

But today Jespersen asserts (JL 402):

The vowel *i*, especially in its narrow or thin variety, is particularly appropriate to express what is small, weak, or insignificant, or, on the other hand, refined or dainty.

Although he says the vowel is merely appropriate, he goes on to quote so many instances from many languages that there is danger of the adjective becoming transformed into natural.

Is not a heavy burden placed on the vowel? The *i* seems to do its work even if it is connected with such different consonants as *q*, *k*, *l* or *m*. Again, the *i* vowel is not only appropriate to express the qualities mentioned, but is also *symbolical* of short time and nearness as contrasted with *a* and *u*, which symbolize what is farther off.

In 1929 Sapir⁵ published a study purporting to show that certain sounds naturally symbolize qualities—for example, the vowel *i* French (*fini*) symbolized smallness, *a* German (*Mann*) largeness. Later one of his students⁶ by the use of a statistical technique confirmed the earlier results and also discovered symbolic sounds for darkness and lightness. As explanatory suggestions for the objective symbolical character of sounds these writers quoted the position of the tongue in articulation, resonance within the mouth, etc.

Without questioning whether the exceptions might break down the naturalness of such correlations, do the statistical results demonstrate anything besides the building up of association habits? Is there such a thing as Sapir's "unconscious or intuitive logic which is not necessarily based on experience with stimuli in their normal factual aspects"? If the *influence of speech or factual language factors* need not be invoked to explain these symbolisms, as Sapir believes, then can we connect these results with speech? Furthermore, why should we invoke such natural symbolism to explain why we symbolize smallness by the *i* of *little*, when we have a similar sound in *thick* and *big*?

Moreover, does not the symbolism of particular sounds conflict with general sound patterns? Or is it possible to say that patterning belongs only to language systems and not to concrete utterances? And finally, assume that we do find associations of sounds with qualities of objects, how can we connect this fact with speech? Who would argue a natural relationship between the sounds of white and black because they are so closely tied up in word associations?

Imitative Symbolism—Humboldt⁸ gives a very good statement of what he calls imitative symbolism. Language:

⁵ A Study in Phonetic Symbolism, *Journal of Experimental Psychology*, 1929, 12, 225-239.

⁶ Newman, Further Studies in Phonetic Symbolism, *American Journal of Psychology*, 1933, 45, 53-75.

⁷ Incidentally a study, based upon Sapir's work, by Bentley and Varon (An Accessory Study of "Phonetic Symbolism," *American Journal of Psychology*, 1933, 45, 76-83), led the authors to conclude that sufficient evidence was lacking that sounds have objective symbolic character.

⁸ Ueber die Verschiedenheit des Menschlichen Sprachbaues, (Berlin), (Pott ed.), Calvary, 1880, 93.

. . . chooses sounds for the objects to be designated, which partly in themselves and partly in comparison with others produce on the ear a similar impression to that which objects produce on the mind, as *stehen, stätig, starr*, the impression of firmness, Sanskrit *li* to melt, diverge, to deliquesce, *nicht, nagen, sheid* the impression of sharp severance. In this way objects producing similar impressions are provided with words of essentially similar sounds as *Wind, Wolke, wirren, Wunsch*, in which all the vacillating, restless, for the mind confusedly interpreting movement is expressed by the in itself thrumming and hollow *u* hardened *w*.

Humboldt regards this sort of denotation, which for him rests upon a definite significance of each single letter and combination of letters, as an exceedingly influential, if not exclusive, domination of primitive word denotation. Also, he believes that this kind of denotation must result in a certain similarity of denotation in all the languages of mankind. On the other hand, he utters the warning that one must not regard this as a constitutive principle, for that might lead to great danger.

This conception of Humboldt's has given rise to various polemics. For example, Madvig suggests that we need only compare four of the words Humboldt quotes with the four corresponding words in the very nearest sister language, Danish *blæse, vind, sky, ønske*, to see how wrong this principle is (JL 396). Nyrop writes:

Those who believe in the natural signification of words do not take into consideration that the same name can designate several objects, that the same object can be called by several names, and that the significations of words are constantly changing and often become the vehicles of very different ideas, sometimes entirely opposite; nor do they pay attention to the very important fact that objects receive new names in foreign languages and that the same group of phonemes take a different sense according to the language in which it is found (GH 400).

He goes on to ask further "How to explain (by means of natural signification) the difference in sense between *murus, nurus, durus, purus*, etc.?" (GH 401).

That all such theories of imitative symbolism are based upon arbitrarily selected examples is of no mean significance. The fallacy of selection is all too prominent. Unrelated words are explained away by means which, upon close examination, explain away the selected instances also.

There is likewise a fallacy in the attempt to establish imitative symbolism by showing that different language systems express similar things by similar sounds. Here it is frequently overlooked that the similarity of words or sound patterns are

directly owing to similarities in development of the language concerned. There is, of course, then no merit in the point that in different language systems similar sound patterns represent a particular kind of object.

Even within the same language the identical phonetic word can denote various referents (wood-would, seen-scene) and the same objects or actions can be denoted by different words. Witness the phenomena of metaphor, euphemism, and word changes.

The discussions of various linguists convince us that different writers are interested in different phenomena. For example, Jespersen appears to defend Humboldt against the criticisms of Madvig and Nyrop concerning the natural imitation of language; yet he really has no firm belief in the existence of such a phenomenon. He himself objects to the idea that sound symbolism has an influence upon linguistic origins. Thus, in criticizing De Saussure, who says that some sounds may have a suggestive ring but have not always had it, Jespersen claims linguistic science is more preoccupied with what words have come from than with what they have come to be (SL 410). Again, he points out that every language contains numerous words which are indifferent to or may even jar with symbolism. He indicates the various changes that take place, with the result that some words lose their expressiveness and others become more expressive.

In the opinion of the psychologist all these beliefs and counter beliefs point to only one conclusion—namely, that no symbolism, whether natural or arbitrary, is involved at all. Rather, the properly selected instances show merely that some of our vocal speech adjustments are in a sense imitative, whether intentional or not. In other words, when a speaker refers to a linguistic stimulus object it is possible to find resemblances in what he does and what the stimulus object is like.

Observe a vivid speaker describing a recent combat. His speech is adjustmental, active performance. He moves toward, strikes, and points to the overcome opponent. In a way, most linguistic adjustment of children is such dramatic living over of the action of the stimulus objects. With the development of more subtle ways of referring to things the adjustments become transposed into more stilted and localized action.

In general, such *imitative* actions are concerned with descriptive references. Within these limits it is quite plausible that sound imitations of sound objects should take place. But whether

we stress symbols or imitation we are not dealing here with sound symbols for sound objects, but with simulating adjustments. Referring to a colored person as chocolate or to the slow speaker as a limping conversationalist is in principle the same sort of phenomenon. Sound similarities are only aspects of the correspondence of reference and referent. It is only a linguistic prejudice that stresses auditorially presented referents to the exclusion of visual, tactual, and other kinds.

A convincing item against the imitative symbolism conception is found in the so-called phenomenon of direct reported speech. When a person refers to another's speech adjustment, he may do so directly by repeating the action of that other person. Why should we say that the word acts that he performs are imitative symbolisms of the words of the other person? When we demand an exact reference in order to know what has previously happened in a linguistic event we demand in effect as close a repetition of the original happening as we can possibly get. Let us call this an imitative adjustment, but why symbolism?

Natural Fitness—In the thirteenth section of his *Vita Nuova*, Dante tells how he was harassed by four thoughts, the third of which was that:

The name of love is so sweet in the hearing that it would not seem possible for its effects to be other than sweet; seeing that the name must needs be like unto the named; as it is written: *Nomina sunt consequentia rerum*.

Allowing for the poet's license, the question whether any sound or word is more suitable or more adequate for referential adjustment must be given a decidedly negative answer.⁹ How can we overlook metaphors and other figures of speech? When we examine squarely whether any individual or social language patterning is by nature more effective or more subtle for linguistic adjustment purposes, there is only one answer: No.

But why then do some expressions appear more suitable or at least preferable? Why indeed except for wont and use? The only fact here is a connection built up by familiarity. Frenchmen cannot find *habit* suitable for pronouncing the English word *habit*, but *abit*; Germans find *tin* just as suitable as *thin* to refer to thin; the Menominee find *t* and *d* equally suit-

⁹ Note that we do not repeat here our criticism of the improper isolation of sounds or words.

able for the same purposes; the Dutchman regards *g* and *k* as of the same potency.

In strictly psychological language, the Frenchman endows the English word *habit* with the stimulus function which elicits the response *abit*; the Menominee endows *bađ* with the stimulus function of *bat* and vice versa. These are all matters of psychological development. After associations are established it is only to be expected that certain actions will fit or be adapted for certain objects.

But is not this like the fitness of familiarity which makes *hat* more *symbolic* than *Hut* for an English speaker? We can observe the same phenomenon in the musical problem of consonance and dissonance. The musically consonant is the culturally familiar and assimilated rather than any natural blending or superior quality of sounds.

The adequacy of sounds or words reduces itself to the sheer fact that certain persons and groups have built up various ways of doing things linguistically and that ever afterwards these ways seem to be the best and most natural. The same facts of familiarity and association explain why the speakers of certain languages regard their own tongues as musical, while the speech of others seems harsh, guttural, or otherwise esthetically inferior.

Rejecting the notion of natural symbolism or adequacy we account for the development of such associations in the same way the anthropologist explains the origin of institutions. The problem of the existence of certain sounds in a language is the same as the question: How has monotheism or polytheism arisen, monogamy or polygamy, capitalism or communism? All vocal patterning is similarly an historical development without regard to any functional advantage or disadvantage on the part of the speaker. There is no more adequacy in particular sounds or words than there is in special forms for aspects, gender, tense, or dual number.

THE PSYCHOLOGY OF SOUND CHANGES

Although all conventional studies of sound-change and sound-change laws are founded upon the assumption that sounds are linguistic things, the history of those studies shows a definite progression toward the idea of linguistic adjustments. The development of sound-change investigations shows a successive preoccupation with letters, sounds, syllables, words, and—by

implication, at least—speech adjustments. In this fact we may perhaps find some support for a psychological interpretation of phonology.

It is remarkable how little one of the first students of historical sound changes—namely, Grimm—was actually concerned with speech behavior. Theoretically, Grimm was profoundly interested in the way persons of particular language communities spoke. And yet so great was the influence upon him of Savigny's conception of history and probably Rask's theory of the relation between history and language that he studied literary materials exclusively. He wrote: "Historical grammarians need pay but little attention to the *bunte wirrwar mundartlicher lautverhältnisse*" (LSL 30). His famous and epoch-making *Deutsche Grammatik* in its phonological division is concerned with *Buchstaben* rather than with *Laute*.

Grimm's law really emphasizes letter mutations, as though they were autonomous substances. This fact is well illustrated by the form of the mutation theory. The statement that Indo-European voiceless stops, *p, t, k*, become in primitive Germanic the voiceless spirants, *f, th, h*, certainly implies a preoccupation with independent thing units.

Since, after all, speech must in some sense be recognized as adjustments, we find that as early as 1837 Rudolf von Raumer (1815-1876) pointed out the need to study actually produced sounds instead of letters.

We shall hardly reach our goal if we are satisfied to have found certain letters in one dialect in the place of certain others in another dialect. We must penetrate into the nature of the sounds for which these letters stand in order to find out how one may have developed from the other. For since the transformation of words does not rest upon the signs with which they are spelled or upon their similarities, but upon the spoken sounds, it follows that phonetic investigations must go hand in hand with all clear etymology.¹⁰

The whole early idea of law, conceived as it was in terms of mechanical phenomena, points strongly to linguistic things as materials for speech. As we know, this speech-thing conception became elaborated to the point that language was regarded as an organic thing such as a plant or animal species, while the processes of language development were looked upon as similar to organic evolution. On the side of the *laws* governing the development of language we have the theory developed

¹⁰ *Gesammelte sprachwissenschaftliche Schriften*, (Frankfurt am Main, Erlangen), Heyder und Zimmer, 1863, 9.

by Scherer (1841-1886), Leskien (1840-1916), and others that the phonetic laws have no exceptions. The wars arising from the introduction of this exceptionless law show the extent to which abstractionistic principles have been carried (LL 240).

Although the ordinary historian of linguistics regards the *law* of Grassmann (1809-1877) as confirming the establishment of absolute phonetic changes, we may look upon it as a step away from the letter or sound-thing conception of phonology. When it was found that the initial voiced stops *b*, *d*, *g*, of Germanic are paralleled by the same sounds in Sanskrit and not by *bh*, *dh*, and *gh*, as Grimm would have it, and in Greek by *p*, *t*, *k*, and not by *ph*, *th*, *kh* (BL 349), Grassmann set up his law of deaspiration (1862), which according to Graff runs as follows: "If in Greek or Indic two consecutive syllables begin with an aspirate, one of the two, usually the first, loses its aspiration" (LL 239). Notwithstanding that the language-thing conception is not in the least departed from, we see that at least syllables are involved and not mere isolated sounds.

Verner's law (1875) goes still farther in the direction of speech adjustments. When Verner (1846-1896) explained that the *d* exception to the rule that Indo-European *t* should be *th* in Germanic (compare Latin *pater*, Gothic *fader*), he was interpreted as aiding in the establishment of an absolute sound-change law, but what he did may be otherwise interpreted. When we state the *law*: "The voiceless spirants of primitive Germanic origin (*f*, *þ*, *h*, *s*) become voiced (*ǰ*, *ð*, *g*, *z*) when the Indo-European accent did not immediately precede" (LL 239), we see that changes involve words and even more than words, and not merely syllables or sounds.

The limits to which the linguistic-thing conception carried language scholars are not only illustrated by the impossible law of exceptionless application, but also by the insistence upon a self-contained sound-change process abstracted from all concrete happenings. Accordingly, they refused to allow analogy any place at all in the modification of linguistic phenomena. Analogy, the neo-grammarians (as the supporters of the exceptionless laws were called) asserted, is psychological (presumably not causal) and not capable of participating in such an absolute process as phonetic change.

When we turn to more recent discussions and explanations of sound change, borrowing, and language mixture, we come fully to linguistic adjustments. No matter how abstract these

changes may be said to be, in conformity with the general isolational tradition of language studies, it is after all the forms of linguistic reference that are really being discussed.

In the first place, even the neo-grammarians were tending towards descriptions of actual speech, and in this respect were far away from the original letter-change conception. Secondly, the various specific *causes* that have been proposed to explain sound changes, such as climate, modification of speech organs, differences in pronunciation, historical and cultural conditions, genealogical succession, imitation, economy of labor, temper, heredity, or what not, look toward language adjustments. Howsoever far such causal theories depart from actual speech changes, they still suggest that the phenomena to be explained are complex concrete speech happenings. In addition, linguists today do not try completely to separate specific sound changes from semantic modification, variations in general phonetic pattern, changes in accent, stress, etc.

For the psychologist it is clear that modifications in phonemes are in the last analysis changes in vocal action patterns. Whatever formulations we have of phonemic change are only indications of changes in the speech of persons—ways they have modified their linguistic adjustments. In this connection the view of Spitta Bey,¹¹ to the effect that the speech forms of Egyptian Arabic are not yet fixed—he quotes the natives as saying that “our language is according to the will of the individual”—when taken as a universal characteristic of all speakers, is more faithful to actual language phenomena than the views of the adherents to sound laws.

The student of actual linguistic behavior cannot help asking: What after all do phonetic laws contribute to our understanding of human speech? That human speech changes is the tritest of observations; but can such abstractions of abstractions as conventional sound laws really represent any actually occurring phenomena? Now despite the great gulf between actual speech patterns—think how impossible it is to say how any word is actually pronounced even in a small language community¹²—and such rigid formulations as phonetic laws, the tracing out of linguistic changes is a valuable enterprise, provided, of

¹¹ Dirr, *Grammatik der vulgär arabischen Sprache*, (Wien, Pest, Leipzig), Hartleben, 1893.

¹² So that Grimm could reject the “chaotic mass of dialectal sounds” in favor of inflectional fragments, word formations, and syntactic circumstances.

course, it keeps somewhere within the range of speech phenomena.

It is an interesting speculation why linguistic scientists go so far from their actual data as to build an impossible barrier between themselves and natural scientists. Possibly it is because, on the one hand, they give up their original quest and, instead of maintaining an interest in human behavior of the speech type, are content to deal with letters;¹³ and, on the other, they do not check their results with experiment or utilitarian application.

There still remains the question of how languages change. We face the same problem in all modifications of human phenomena. Undoubtedly, these conditions are legion—not excluding the general variability of individual speech performances—and it would be a travesty upon science if it shirked the responsibility of attempting to discover them in favor of some simple *law*. Suggested here is the treatment of language as a phase of larger historical and anthropological occurrences, instead of as an isolated self-sufficient phenomenon. Perhaps the conception of linguistic adjustment may be a useful tool in the search for these conditions.

EXPERIMENTAL PHONETICS

Recent techniques of vocal recordings (oscillograph, sound film) show the interfusion of the various sound curves constituting words (see citations under Gemelli and Scripture in Selected References). This indicates the need to consider speech products as patterns. Gemelli states on the basis of such work that "in reality there are neither syllables, nor words, nor phrases; there is a succession of various movements with which sounds, having a significance, correspond." Gemelli, of course, thinks of sounds and movements as manifestations and determinations of spiritual powers which give them their unity.¹⁴ In consequence his view stands at the opposite pole from objective psychology, which looks upon not only the intrinsic organization of speech, but also its origin and operation, as concrete phenomena of linguistic interbehavior.

¹³ In dealing with living English, for example, what linguist would turn from pronunciation to standard spelling?

¹⁴ Gemelli, A., *I Risultati Dei Più Recenti Studi Sul Linguaggio In Relazione Con Le Dottrine Realiste E Con Le Dottrine Idealiste Sulla Natura E Sulla Funzione Del Linguaggio*, (Milano), Vita e Pensiero, 1935.

PART III

CHAPTER XIII

THE PROBLEM OF SPEECH PARTS

LOGICAL CATEGORIES VERSUS PSYCHOLOGICAL ADJUSTMENTS

WORD-THINGS, symbols, and logical classes (categories) meet at a common point in conventional speech-parts theory. The logical-class feature, however, stands pre-eminent, since the conception of categories has historically served to perpetuate both of the others.

Speech-parts may be traced back to Aristotle's ten categories: namely, substance, quantity, quality, relation, place, time (when), position, state, action, and affection (passivity) (*De Categoriae*, 1b, 25). These categories consisted of word-symbols representing the various aspects of being or reality.

We cannot therefore accept the viewpoint of Trendelenburg (LU 1,371) and Mauthner (BKS 3, 4) that Aristotle derived his categories from Greek speech parts. Since Aristotle clearly distinguished between speech and science (thought), categories and speech parts belonged to two distinct disciplines. Speech he believed had only two parts: noun and verb (*De Interpretatione*, 2, 3), or at most, four: noun, verb, conjunction, and article, if the *Poetica* (20) is taken into account.

But if speech parts have been derived from Aristotle's logic instead of his linguistics, they have not been accepted without modification. The post-Aristotelian subjectivists transformed these categories into signs of mental states.¹ This procedure was in line with the subjectivistic tradition that thought constitutes activities of individual minds. Though in more recent times grammarians have tenaciously clung to the notion that speech is the expression of thought, they have also come to believe that speech parts are morphological or functional units in sentences or utterances.² In either case the view is preserved

¹Aristotle, of course, wrote: "Spoken words are the symbols of mental experience and written words are the symbols of spoken words" (*De Interpretatione*, I). But as we have seen (Chap. VIII) this means merely experience in an objective psychological sense.

²Hence the name *Satzteile*.

that speech parts are things of some sort. To define nouns as the names of things is to regard speech parts as tags, labels, or other indicators. And if nouns are names, then all other parts are names, though for different things. The very expression *speech parts* indicates static elements, which stand in sharp contrast to the dynamic behavior of actual speech.

No doubt Aristotle abstracted his categories from the Greek language—indeed, where else could he have obtained them?—but we must assume that that was because of his objective view of thought, as we have outlined it in Chapter VIII, and not because in his logical writings he was borrowing from language. In other words, Aristotle regarded science as consisting of propositions concerning happenings or the abstractions from them, and so in words he found representations or symbols for the various aspects of phenomena.

Though none of the conventional word-things or symbol views concerning speech parts can be satisfactory for psychological grammar, the Greek original which made these parts into class terms for various states and conditions of things is the superior one. For after all, though it misses the essential speech phenomenon and makes speech parts into word symbols, to regard speech parts as standing for things connects closer with the facts than the view that word symbols stand for *ideas* or for things through *ideas*.³

Now it is plain that unless speech parts can be derived from actual speech phenomena they cannot be incorporated into psychological grammar. But even the linguist has experienced great difficulty in assimilating logical categories. A consideration of this trouble will pave the way for a psychological interpretation of speech parts.

THE LINGUISTIC EMENDATION OF THE SPEECH-PARTS CONCEPTION

The grammarian's inability to set up distinguishing criteria for speech parts we have already pointed out (Chap. I). Vendreyes (VL 115 ff.) indicates that (1) what are called parts of speech are really morphemes not words, (2) some do not belong to intellectual language, (3) some do not occur in all languages, and (4) even nouns and verbs (Finno-Ugrian and

³ Ideas to be sure are different from thoughts, but it is certainly the medieval conception of words standing for thought that has fitted into modern mentalistic psychology. See Chapters I and V.

Chinese) are indistinguishable. So far as number is concerned, Jespersen (PG 91) insists there are only five word classes (some with subclasses, however), whereas most school grammars offer eight or nine. If all of Sweet's (NEG) subclasses are counted, there are seventeen. As to identifying criteria, those who cleave most tenaciously to word-symbols believe that one speech part can at the same time be another⁴ or converted into another (NEG 38) while others, who incline somewhat toward action, deny the possibility of such a conversion (PG 62).

Because of this unsatisfactory situation it is easy to understand the violent attacks that Brunot (PL) makes upon the whole conception in preparation for doing away with speech parts entirely.

Linguists, however, hesitate to dispense with such time-honored grammatical paraphernalia. They propose to retain speech parts, but with radical emendations. For example, Sapir writes (SL 125): "No logical scheme of the parts of speech—their number, nature, and necessary confines—is of the slightest interest to the linguist." And yet he proposes to reform them. How? By removing them from the domain of vocabulary to the realm of syntax. Vendreyes, who has written so heavy an indictment against speech parts, proposes a similar remedy. Both of these writers hold that there are only two parts of speech—namely, nouns and verbs—on the ground that the former are subjects (that of which something is said), and the latter predicates (that which is said). These, it is asserted, cannot be dispensed with.⁵ It is interesting to note that this emendation of the speech parts conception takes us back to Aristotle, although with his usual acumen that philosopher noted that speech is not always made up of noun and verb; it may be without a verb, like the definition of man (*De Poetica*, 20). Suppose that I am asked whether it was the tall man or the short man who was here. I reply *The tall man*. Assuming that the word *man* is the noun or subject, where is the verb predicate? In order then to have a predicate some other part of speech is essential—say an adjective. It is hardly feasible there-

⁴ Cf. Owen, Hybrid Parts of Speech, *Transactions of the Wisconsin Academy of Sciences, Arts, and Letters*, 1908, 16, 108-252.

⁵ More recently, Gardiner (GSL 106) has expressed a similar idea. This author asserts that speech parts belong to the domain of language and not to speech. Although the reform of speech parts is undoubtedly proposed on the basis of formal propositions, we must not overlook the possibility that the writers referred to may be looking forward to actual speech adjustments.

fore to reduce the number to merely two. Even if the dodge of predicate adjectives and apposition is resorted to, there is still left the question of interjectional acts or even non-vocal behavior.

As long as one does not abandon the entire conception the various other parts of speech have just as much place in language as nouns and verbs. Nor can we accept the idea that all speech parts should be present in every linguistic event. Moreover, it is certainly true that some language systems include parts of speech that do not occur in others.

In Chapter II we pointed out that to make speech consist of subjects and predicates is to confuse speech adjustments with logical propositions. On the other hand, if we mean by subject an actual thing of which we speak and by predicates what we say of it, then surely no speech part is necessary. How could one make a noun and verb out of a gesture or an uttered word?

THE PSYCHOLOGICAL EMENDATION OF THE SPEECH-PARTS CONCEPTION

The psychologist rejects the notion that nouns, adjectives, etc., are symbols or word-classes in favor of the idea that they are descriptive factors derived from actual adjustments. As Meader (MPL 263) reminds us, the grammatical categories are not a part of language, but statements about language. In detail, the objective psychologist makes his reinterpretation of speech parts in terms of the three variables of a speech adjustment: (1) the response, (2) the adjustment stimulus, and (3) the auxiliary stimulus. To these we add, of course, (4) the characteristics of the speaker and (5) the human circumstances which always have a significant influence upon interactions. With these five factors in mind we are equipped to study the nature and operation of speech parts.

Simple Reference—The number of speech parts analyzable out of an adjustment depends upon the elaboration of the reference pattern. A language reaction may be so sheer a reference as to consist of only a simple gesture, an act of pointing or a simple vocal act, as in the case of saying *Telephone, Door bell*. Such a deictic adjustment, which merely refers to (calls attention to, points out, exclaims, or asks about) some particular object, person, or event, consists of only one part of speech. This is true even if the response comprises a pattern—namely,

a series of reaction systems. Saying *That is the man who fell off the house* in answer to the question *Who is that?*⁶ is an example. Though this utterance comprises a complex behavior pattern it is linguistically really a simple response.

Complex Reference—A linguistically complex adjustment we call discursive speech, such as referring to the details of an object or event. From such an adjustment a number of speech parts may be analyzed, but it does not follow that only complex objects or events are correlated with speech reactions capable of analysis into many speech parts. This essential psychological rule we have discovered in the discussion of stimulus functions in Chapter VI.

Whether we will find one, few, or many speech parts cannot be foretold in advance, since it all depends upon an actual situation. But in general we may assert that answers to questions are frequently simple, involving only one or few such parts, whether they be substantive, adjectival, prepositional, or any other. When A replies *red* to the question whether the hat was red or blue, his single word answer is an adjectival response.

SPEECH PARTS PRIMARILY RELATED TO ADJUSTMENT STIMULUS

Speech parts as a rule are interrelated with adjustment stimuli. It is only natural that the thing spoken of should exert a great influence upon the number and type of speech parts, since most speech emphasizes adjustment-stimulus objects. This does not mean that we overlook the influence of the auxiliary stimulus, the speaker himself, and other factors, but rather that we attempt to correlate the essentially referential and stylistic features of adjustments (Chap. VII) with those factors most nearly related to them in a speech event.

Substantives—The term substantive describes what is essentially a reference to the adjustment stimulus object. In a simple speech behavior the substantive may of course be the whole language act—that is, we may speak of a thing without referring to its properties, behavior condition, etc.

Substantive adjustments may consist of a single reaction system or a response pattern. In the former case, a gesture or

⁶ Perhaps it is supererogatory to point out that one of the linguistic examples offered may be confused with conventional sentences. For us the vocal act of saying *That is the man who fell off the house* is only a unitary identifying vocal gesture.

a single vocal utterance (sound or word) refers either to a single object or a complex happening. When a complex happening is a stimulus for a simple response the latter may be called holophrastic.

The response pattern also may be a reaction to a single object or happening. The utterance *A very bad day* may refer to the sheer fact of rain, while the same action may refer both to the fact that it is raining and its consequences. The grammarian to whom it may appear strange to say that such a complex utterance as *That is the man*, or *there goes the man*, is a substantive, need only be reminded of his large subjects: (*The man who daily goes into the field*) *is here*, or large predicates: *He (goes into the field)*. Moreover, some linguists agree that "even a whole sentence may become a substantive" (VL 132).

In contrast to conventional symbolism, substantive reactions are not exclusively responses to things (trees, houses, etc.). They are also responses to events (the capsizing of a boat, a war), situations (the military preparedness of a nation), or circumstances which may involve a large number of persons, objects, and relations. The only way we can determine to what thing the speaker is reacting is by actual observation.

The term substantive also identifies references to the qualities of things. Nor is this all. A substantive may name the adjustment to actions or motions. When the individual points out the running, jumping, or sitting activity of some person or animal the term substantive covers his referential response just as much as when he speaks of the person or animal. A very important set of substantive reference acts are those by which the speaker responds to acts of his own or those of the hearer. These are illustrated by such speech behavior as *Yes! I did that* (speaker's act of doing); *I believe it was well done* (speaker's act of believing); *Did you see or do that?* (hearer's act of seeing or doing); *Do you really believe he did?* (hearer's act of believing).

Persons, too, may be the adjustment stimuli for linguistic behavior. Thus what the grammarian calls a pronoun when the speaker says *I did it*, *He did it*, *They did it*, is really a substantive in our sense. Naturally it makes no difference whether the conventional vocal reaction refers to an actual person or to a personified thing.

And finally, substantives may be adjustments to the most remote and abstract things. Such objects need not even exist.

It is only necessary that they should be able by proxy to stimulate persons to refer to, discuss, or otherwise respond to them linguistically.

Adjectives—References to the qualities of things spoken of are adjectives. At once we think of the qualities of objects, though the properties of motions, acts, events, persons, and circumstances must also be included.

To avoid misunderstanding we add that any adjectival reference to a stimulus implies a more elaborate adaptation than the purely substantive. As soon as a speaker goes beyond the mere pointing out of a referent, to specify its characteristics or qualities, his reference becomes more complex.

Since an adjective is not a word which modifies another word called a noun, or a symbol expressing a quality or the idea of a quality, many of the conventional grammatical adverbs are likewise to be classed as adjectives.

Naturally it makes no difference to what sort of quality of a thing, person, act, or event the speaker refers. It is quite possible to distinguish the differences between these qualities no matter how they vary. The properties referred to may be natural, derived, or attributed, social or moral, permanent or temporary. These adjectival references may of course be either naïve or sophisticated speech actions and require no philosophic or scientific basis as the grammarians who build upon Aristotelian categories assume.

Verbs—Verbal speech consists of references to actions, whether of persons or things, individuals or groups, single things or many, or combinations of these. By actions we mean behavior in the widest sense. To act means not only to do something, but to undergo experiences. It includes not only doing things such as eating, striking, or speaking, but also undergoing processes such as changing, growing, deteriorating, dying, as well as experiencing states or conditions like sleeping, hating, suffering, standing, hungering, and acting to produce actions in others, such as appealing to, displeasing, or exasperating someone. In brief, every type of conventional grammatical word, when it refers to behavior of things or persons in any of these senses, is a verbal utterance.⁷

Not a few grammarians have hit upon essentially referential facts in their descriptions. Thus they frequently employ the

⁷ Here is justification for Sweet's designation of verbs as phenomena words.

figures that verbs impart life to speech, that they are sentence-making words (though every word should be called a sentence-making word). This is only to acknowledge that one does not refer extensively to things without speaking of what they do. Despite the frequency of verbless sentences (when they are genuine linguistic utterances, of course) what a thing does is a very important feature of linguistic reference. Recall that Aristotle differentiated between verbs and nouns on the basis of a time element in the former, a fact which the German grammarians celebrate by calling verbs *Zeitwörter*. And finally, when grammarians ascribe to verbs so-called person, mood, and voice characteristics, they admit the referential character of verbal speech behavior.

Referential responses to action are verbal even when they include grammatically infinite words. A grammatical form like *talk* is not only ambiguous (noun or verb), but it need not be regarded as speech at all. When we observe the action of a person saying *He is to talk tonight*, there is no question that this act involves verbal language. As it happens, too, our illustration constitutes a reference to a prospective or general action, just as would be the case if the speaker said *He will talk*. The decision as to what kind of language any referential act is depends entirely upon what the speaker is doing.

Similarly, the participles. As opposed to the grammatical view that such speech parts partake both of the character of adjectives and nouns, the psychologist sees in them responses to continuous or incompleting action (*He is going*)⁸ or completed action (*He has gone*). Participles are no more adjectives than infinitives or substantives.

Adverbs—Adverbs have been among the most difficult phenomena for the grammarian to handle. Either they have been regarded as modifiers of words or sentences or altogether denied a distinctive place among the other parts of speech.

As language behavior, adverbs may be described as conventional ways in which the speaker refers to the conditions and circumstances of the adjustment stimulus object, the how and wherefore of things. *His life ebbed away slowly, He spent his money wastefully, He attempted to desert, therefore he was shot.* As our examples indicate, the conditions and circumstances of persons, things, or events are adverbially referred to. If our

⁸ From a psychological standpoint speech action (going) can be an adjective when the question is one of describing whether he is standing or going.

suggestion has any merit, the only genuine instances of adverbial language that traditional grammars offer are those dealing with manner and cause.

As we should expect, adverbial and verbal speech have decided points of contact. In our linguistic reactions to the world we are no more able to keep our references pure than we can keep phenomena themselves absolutely distinct. In the world of nature the condition of a thing is not always an absolutely different phenomenon from an action that it does. Accordingly such actions as we have already spoken of as processes will sometimes require verbal and sometimes adverbial reference.

The same thing may be said concerning adverbial and adjectival speech. It is not always easy to distinguish between the qualities and conditions of things. Nevertheless we have here no tremendous difficulty, since we are always interested in a referential action and never in a form of word. As long as we know the nature of the adjustment stimulus we can always keep references to the qualities and properties of things distinct from the conditions under which they exist or occur.

Prepositions—Speech references to all sorts of relations constitute prepositional language. Aside from space and time relations we speak of value and intensity relations of things, and the social and economic relations of individuals. On this principle many of the conventional adjectival and adverbial references of the grammar books must therefore be classified as prepositional speech factors.

SPEECH PARTS AND THE AUXILIARY STIMULUS

From the nature of the auxiliary stimulus we may conclude that it conditions primarily the style and pattern of utterance and not its intrinsic character.

Interpersonal speech, consisting of elaborate vocal conduct, naturally contains a large frequency distribution of speech parts depending upon the presence or absence of descriptions, inquiries, or answers. On the whole, descriptive or narrational speech is the most elaborate, while inquiring speech is less liable than others to contain elements classifiable into speech parts. The number of analyzable elements is, of course, greatly influenced by the person of whom one makes the inquiry. When my informant is an expert on automobiles, my inquiry may be

replete with references to things, properties, and actions of such machines and their parts.

Answering speech may or may not abound with analyzable elements. To answer *red, the white one, his, yes, no, humph,* leaves us little to analyze.

SPEECH PARTS AND THE SPEAKER

In actual speech, more than in writing, is style the man.⁹ One individual may habitually substantize verbs or verbalize substantives. Another inclines toward prepositions, while still others prefer possessives, etc.

Although individuals are always subject to the language conventions of their speech communities, still the number and kind of parts of speech analyzable out of their behavior depends upon their individual speech habits. Thus the person who speaks a picturesque, metaphorical language throws much of his behavior into adjectival forms in preference to some other kind.

Individuals who are habitually gestural in their conduct incline toward motions rather than words and minimize the number and variety of speech parts. An extreme case is the gesture-speaking foreigner who employs few speech parts.

Again, the number of analyzable speech parts depends upon the speaker's volubility. A man of few words may merely vocally point to things or events. Thus prepositions, adverbs, and other acts concerned in the refinement of talk have a small place in the situation. Whether the speaker is a keen or experienced observer, an intelligent or educated person, a social or unsocial individual, a child or an adult, markedly alters his language.

Conjunctions—The personality factor probably connects closer with conjunctions than other formal speech parts. When the grammarian asserts that conjunctions are connective speech-elements, he is thereby pointing out the difference between strictly referential behavior and the style in which it goes on. When speech is discrete, as in conventional word-utterances, it can be more conjunctival or include more connective forms than when it is continuous. When referents stimulate enumerative remarks or cumulative descriptive references, speech behavior is apt to be discrete and conjunctive. *He came*

⁹ But no one, of course, will confuse the style mentioned here, which may be social or conventional as well as personal, with ordinary grammatical style or etiquette. (See Chap. III.)

with his stick and demanded that what he wished be done or else he threatened to do his worst. Language habits, determining whether one speaks in short staccato utterances or long drawn-out sentences, also influence the number of conjunctival speech elements.

LINGUISTIC CIRCUMSTANCES

Environing conditions can be roughly divided into three sorts, depending upon whether they affect primarily the speaker, the auxiliary and adjustment stimuli, or both equally.

First, we consider the motivation of the speaker. Whether or not he speaks at all or what he says depends upon conditions affecting his dignity, pride, or perhaps the desire to avoid doing something. Again, there are circumstances which awe, baffle, or inspire him, such as the presence of men in authority, a puzzling situation, or a beautiful vista.

In the second place, taboos or interdictions concerning the things of which we speak affect our references to them. Whether our speech is facilitated or hindered may also be due to the kind of person to whom we speak.

And thirdly, the speaker and his two stimuli may both be surrounded by natural (dangerous) or social (inhibiting or facilitating) circumstances. In the presence of one's equals, of those politically friendly, or of those under hostile surroundings, we speak quite differently.

Interjections—Because of the vocal-gestural character of some interjections and their non-syntactic character grammarians have attempted to minimize their importance as language phenomena and even to get rid of them altogether. Let us briefly glance at the grammarian's different criteria for interjectional speech—criteria, of course, based upon word-things.

When we say *Look! Hush! Hark!* we are definitely referring the referee to an action that we wish him to do. Since only one word is involved grammarians tend to separate such imperative interjections from ordinary imperative utterances like *Go and get the book.* But this is hardly a valid criterion. When the witness is asked *Did you walk up to this man and deliberately strike him?* and he replies *No*, he performs a much more elaborate and important adjustment than an interjectional response, though he utters only one word.

Likewise we reject a large amount of expletive and oath be-

havior, not because it is not interjectional, but because it is not genuine language. Here we take issue with the grammarian in that he makes interjections for the most part sheer, involuntary, emotional expressions. Are we obliged to regard a person as speaking merely because he is performing vocal utterances? He may be no more speaking than the man pacing up and down his study is going some place.

After eliminating these unacceptable items of the interjectional field do we have anything left? By all means. We have a series of references to one's own attitude toward things and events—in other words, an affective or feeling evaluation of certain referents. Indeed this feeling element grammarians have always recognized in interjectional behavior. The best examples are such acts as saying *Good!* when one is told of some happening, or *Shame!* when seeing boys mistreat an animal. We speak interjectionally when wrought up or emphatic in our conduct. *Not on your life! Never will I consent! Though he slay me, yet will I believe in him!* are examples of complex interjectional action. The descriptive or communicative feature is of no particular moment as compared with the expressive. For this reason interjectional language is probably more gestural than other sorts, but at the same time just as bistimulational.

THE FIVE FACTORS INTERRELATED

Since the five factors of any speech event are inevitably interrelated, there can be no mutually exclusive connection of one type of speech part with one particular factor. In other words, while conjunctions, as more stylistic than strictly adjustmental, are most closely connected with the speaker phase, it is undoubtedly true that they are also influenced in number and form by the adjustment and auxiliary stimuli and the setting.

Pronouns—Pronouns admirably illustrate the interrelation of these five factors and incidentally demonstrate how the psychological description of speech parts sets aside some grammatical difficulties. Pronouns have traditionally been regarded as substitutes for nouns. But Jespersen (PG 82) objects. He asks whether it is proper to say *I see you* stands instead of *Otto Jespersen sees Mary Brown*, in view of the fact that the writer of *Bellum Gallicum* used the word *Caesar* instead of *I*. Furthermore, he declares that it is not easy to see what the nouns *who* and *nobody* stand for.

Jespersen's criticism has point only when speech parts are regarded as word symbols. In terms of actual adjustments, Sweet, whom Jespersen specifically attacks, is right in saying pronouns substitute for nouns for the sake of brevity and to avoid repetition. Pronouns, then, from a psychological standpoint are stylistic variants influenced by all the different factors in speech situations. When we abandon the word-symbol view, many of the so-called pronouns are really nouns. *Nobody* in *Nobody has called* and *Who* in *Who will do this?* are examples.

Pronouns may likewise be regarded as specialized references to adjustment stimuli. For example, when I say *I did it*, I make an adjustment to myself as actor. This characterization of pronouns is the opposite given by Noreen (WBS 257 ff.), for example, who asserts that pronouns are variable elements. Thinking in terms of word symbols instead of linguistic adjustments Noreen and other grammarians believe that the same word *I* stands for a different person when John Smith rather than John Jones says *I did it*.

HOW MANY SPEECH PARTS?

The psychological student of language cannot arbitrarily limit the number of speech parts, but must accept as many as can be isolated from actual speech behavior. This point may be illustrated by the consideration of numbers or numerals, articles, affirmation and denial, and other reference types.

Numerals—It seems decidedly objectionable to put numerals into the pronoun class, especially when they have to be further classified as noun-and-adjective-numerals (Sweet, Jespersen). The most flagrant use of the form or word-thing conception is to call *one* in *One may not do so* a pronoun. When we think in terms of actual referential adjustments, the utterance *One may not do so* is clearly a unit reference to a forbidden action as referent, and hence a noun. Again, we question whether *three* in *three men* is an adjective. Instead of the word-thing rule that *three* qualifies the word *men*, is there anything here but a simple reference to three persons instead of one? The utterance *three men* is therefore a noun.

There still remains a class of numerals exemplified by the so-called definite and indefinite quantifier, as in the utterances, *Many-few-thousands-hundreds-all-some-no-zero-people were there*. *People* constitutes the adjustment stimulus, while the assertion of numbers simply quantifies the referent.

Articles—Grammarians object to making a separate speech-part class for articles, because there are only two, or because from the word-thing standpoint they are merely adjective or noun qualifiers. Neither of these reasons is cogent. Articles, when they are found, are different adjustmental features from other phases of utterances.

Articles are mainly stylistic. This means that they are dispensable, and as patterns occur only in certain language systems. Articles, then, are secondary speech parts, since they are not as essential in conventional speech as are nouns, adjectives, and verbs.

Reply Speech—Affirmation and negation are distinctive speech adjustments whether they consist of simple (*yes, no*) or complex utterances (*I shall not do that*). In no sense may answering references be confused with sheer referee language. Affirmation and denial adjustments can be linked with both referee and referor utterances.

The Copula—Anyone upholding our criterion of a verb must face the question whether copulas are verbs. The ready answer is that conventional linking-verbs or copulas are not verbs at all. When saying *He is dead*, the word response *is* does not refer to any action or phenomenon of the person. Nor can we call it a verb on the ground that it has a predicative function, for this would make it an adjective as much as a verb. Similarly, it is incorrect to call copulas verbs because they build sentences (even when this means referential behavior) since this would be true of every linguistic item.

Are copulas then not speech parts? We believe they are. When we consider such examples of speech as *He is here* the *is* or copula comprises, however, merely a stylistic speech factor, or a vocal gestural form of behavior. It only represents a conventional manner of speaking, but is not itself a referential item. The institutional (historical and comparative) grammarian informs us that in English copulas are definite stylistic developments, while other language communities—notably Russian—ordinarily dispense with them.

What we have said so far applies to the conventional word-thing copulas, whether vocal or written. When we turn to linguistic adjustments, words like *is* or *are* may serve various kinds of adjustmental functions. For example, in the behavior pattern *He is black*, *is* in conjunction with *black* operates only as a

qualifier or reference to quality. In this case we regard the act as having no significance apart from its conventional connection with *dead* in the behavior pattern *He is dead*. The speaker, we take it, merely refers to a certain person as having (*sic*) a certain property. In the same sense, what is called a copula may be a phase of prepositional speech, as in *John is before me*. In this same sense *is* and *are* are genuine linguistic verbal acts, as in the utterances *He is frightened*, *He is going at once*.

Other Speech Parts—As an illustration of other speech parts consider *it* of *It thunders*. Sweet (NEG 75) calls *it* an unmeaning or grammatically empty subject-word. When we describe speech behavior instead of enumerating fundamental logical categories we may on the contrary regard this word as a definite stylistic phase of an utterance. It is undoubtedly necessary to include many other speech parts if we are to cover linguistic phenomena adequately.

SPEECH PARTS AND LANGUAGE SYSTEMS

When we take account of stylistic as well as purely referential aspects of speech behavior we find that the number and types of speech parts analyzable out of an individual's utterances depend upon his speech community. In the matter of speech parts the individual is influenced by dialectal, colloquial, professional, and occupational groups.

Thus is raised the question: Are the utterances of the speakers of all languages analyzable into the same number of speech parts? Curiously enough, whether we adhere to the absolute-category theory or the linguistic-adjustment notion we give an affirmative answer. For different reasons, of course. The absolute-categorists say yes because they believe all language systems necessarily have the same supreme categories, even though they must resort to the ellipsis dodge to demonstrate the fact. The linguistic-adjustment theory, on the other hand, implies that the speaker of any language can perform any linguistic adjustment that the speaker of any other language system can (Chap. VII). On the other hand, some language systems lack certain speech parts because the great variations in linguistic style permit the speakers of these languages to perform their linguistic references without the use of particular elements. Here we find a basis for the assertion that the languages of the Indo-European family are peculiar in having many

parts of speech, whereas the Semitic and American Indian languages have a smaller number.

APPLICATIONS OF THE PSYCHOLOGICAL SPEECH-PARTS CONCEPTION

As a final suggestion concerning the place of psychology in the speech-parts field we apply the linguistic-adjustment conception to the problems of (1) classification, (2) the existence of compounds, (3) dialectal analysis, and (4) the relation between speech-parts and syntax.

Classification—We have already raised the question how to distinguish one speech part from another. For example, Sweet (NEG 131) says: "In some cases adjectives are used as complete adverbs without any change of form, as in *to drink deep, to work hard.*" Likewise, Curme (CEG 24) writes: "When we use *where* and a preposition (*at, to, or from*) *where* ceases to be an adverb and becomes a noun." And the same author declares: "As an adjective the participle can be used as a noun" (296). Such troublesome conversions can be avoided by considering what kind of referential adjustments are involved instead of regarding speech parts as protean symbols. The psychologist has no trouble classifying such word-utterances as *love, round, stone, fast, etc.*

Working with specific psychological adjustments we can avoid such a difficulty as that of Jespersen, who declares, on the one hand, that there is "an essential identity of prepositions and conjunctions" (PG 89), while, on the other, he denies that substantives can be confused with adjectives.

In classifying speech parts the psychologist bases his identification upon the discovery of what object or situation harbors the adjustment-stimulus function. This discovery is facilitated by the fact that much of our speech behavior is interconnected. For example, answering speech can be analyzed because questions isolate stimulus objects. Such questions serve as clues to the identification of speech as substantive, verbal, etc. By the same means we are enabled to say whether an utterance is holophrastic or analytic.

Compound Speech Parts—Are secondary prepositions formed from the declinable parts of speech—for example, *across* from the noun *cross*? Those who say yes treat language as things

which can be put together and taken apart. When dealing with actual behavior it is not feasible to say that actions are constituted of parts in this manner. On the contrary, we must think in terms of varying patterns of behavior. It is quite possible to isolate out of language behavior elements which we describe as *a* and *cross*, but then we have only an arbitrary handling of visually or auditorially presented things as against the procedure of describing actual phenomena.

Variations in concrete linguistic patterns may be illustrated by such examples as Latin *amo, ego amo*; or Italian *voglio, Io voglio*. Is it not wrong to call the first of the alternate utterance forms a compound? It is only when we think in terms of word-things that we say that the Italian speaker joins together two elements which constitute the equivalent of English *I want*.

Dialectal Speech Parts—Finally we call attention to the fact that since the psychologist is committed to the principle of describing actual speech rather than crystallized textual materials, he not only makes allowances for all sorts of pattern-variations in a so-called standard or conventional speech system, but also allows for all kinds of dialectal and personal characteristics. Though it is impossible for the grammarian to say what parts of speech such utterances as *gimme* and *yubetcha* are, the psychologist has no trouble in dealing with them at all.

SPEECH PARTS AND SYNTAX

As descriptive elements of speech adjustments speech parts can only be analyzed out of speech interactions. This does away entirely with two departments of speech-parts, one dealing with isolated words, the other with word-combinations or sentences. Obviously the two departments result only from a preoccupation with word-things.

CHAPTER XIV

PERSON

GRAMMARIANS AGREE UPON PERSON

LOVERS of peace and order may be gratified by the general tone of agreement concerning the nature and number of grammatical persons. Most grammarians agree that there are three persons, and that these should be defined as follows: first person denotes person speaking; second person, person spoken to; and third person, person or thing spoken of.

The few dissenters hardly do more than call for a fourth person, although not the same one. Rask (Cf. PG 220) thinks that in *He beats him*, *him* is a different person from even *himself* in *He beats himself*. The point is, apparently, that the pronoun *him* functions in a different degree of indication from *he* or *himself*. Thalbitzer (AI 1021 ff.), on the other hand, working with Eskimo material, makes the reflexive the fourth person. By reflexive he means "the form expressing that the subject of the sentence is possessor."

THE FACTUAL BASIS FOR PERSON AGREEMENT

It is to the credit of grammarians that discussions of person incline more toward the factual than is true of most linguistic subjects. Language is handled as a tripartite phenomenon. Thus we find a distinct correspondence between the statements of the conventional grammarian and some of the facts of actual speech as the organismic psychologist analyzes them. This is true despite the slip implied in the ordinary assertion that the spoken of must be a person.

THE GRAMMARIAN RETREATS

Just as soon, however, as the grammarian aligns himself with the psychologist he feels uncomfortable. For example, what shall he do with the impersonal pronoun *it* and the impersonal verb utterance *It is raining*? It is difficult for him to tolerate the statement that impersonal verbs are always put in

the third person. To escape, the grammarian resorts to his beloved dodge of distinguishing between grammar and facts.

Obviously, references do not closely coincide with their referents. But what shall we make of this fact? The conventional grammarian chooses the interpretation that word-things do not accurately symbolize or correspond to the things symbolized. The psychologist, on the contrary, looks upon this situation as an illustration of how variable referential adjustments may be.

To establish his distinction the grammarian asserts that grammatical person has nothing to do with personality (PG 212). This assertion is both false and true. True in the sense that we do not ordinarily refer to abstract personality, nor do we always refer to persons. False because we frequently do refer to persons, and, whenever we deal with a human speaker, first person references absolutely are directed toward human personalities.

As an illustration of his point Jespersen cites the utterances *The horse runs* and *The sun shines*. These are grammatically in the third person but without persons. Where is the difficulty? Does not the ordinary definition say that third person utterances constitute adjustments to persons or things spoken of? In psychological terms a person utterance is primarily an adjustment to a referent. Again it is suggested that person has nothing to do with personality because "if in a fable we make the horse say 'I run' or the sun say 'I shine,' both sentences are in the first person." The conclusion is then reached that person has to do only with words and not with persons. Fables naturally are concerned with imaginary speech, but animals can speak (though not verbally) and certainly they can be spoken to. When we keep in mind that we are dealing with references, however, we may well say that the three persons constitute descriptions of speech stressing the three inevitable linguistic factors.

If we assume that the three persons have only to do with word-forms, then the correspondence of grammatical person with the tripartite character of speech is destroyed. If grammatical person really has nothing to do with persons, how can we assert that grammarians realize the nature of speech phenomena? That the conventional grammarian cannot really escape the concrete facts of speech adjustments by the above subterfuge becomes plain when we consider the two interrogative pronouns *who* and *what*. Despite the grammarian's aver-

sion from calling *who* a personal pronoun, on the ground that it would be awkward, *who* is undoubtedly a distinctive reference to persons. Similarly, when we distinguish between *essen* and *fressen* and *eat* and *feed*, we are far from doing away completely with real personal references.

The actual reason for refusing to call *who* a personal pronoun is that it is conventionally called interrogative. But this is nothing to the point. Not to admit that *who* in English is a conventional reference to a person because it is called a relative pronoun is like refusing to admit that the literary Georges (Eliot, Sand) were not women because they used masculine names.

When, however, Jespersen comes to the problem of number in pronouns he really gives up the view that person has nothing to do with personality, since he cannot stay long by his assertion that he is dealing only with word forms. Thus, when he faces the question of the pronoun *we*, he comes back to personality. Because first person means speaker, he declares it unthinkable that it should be anything but singular.

Even when a body of men, in response to "Who will join me?" answer "We all will," it means in the mouth of each speaker nothing but "I will and all the others will (I presume)" (PG 192).

Does not this quotation surely indicate that Jespersen regards the utterance as a reference to persons? Do we not have here an illustration of the grammarian's procedure of shifting his viewpoint when actual facts make it necessary?

It is gratifying to the psychologist that the grammarian sometimes inclines toward a genuine behaviorial position in resorting to concrete facts of context and situation to explain linguistic happenings. To illustrate: The question arises whether a certain language does not provide a more effective means of communication, as when Brinton¹ compares the *lamentable confusion* in English as compared with any Amerindian language with respect to such a sentence as *John told Robert's son that he must help him*. Brinton says you can make nothing out of this sentence, since, depending upon the persons referred to by *he* and *him*, you can have any one of six meanings. On the other hand, the Chippeway language, for instance, has three pronouns of the third person, which designate the near and remote antecedents with the most lucid accuracy. Jesper-

¹ *Essays of an Americanist*, (Philadelphia), Porter and Coates, 1890, 324.

sen (PG 220) quotes Uhlenbeck to the effect that in Chippeway the first mention of a third person (*obviativus*) is marked by the suffix *n*, and the next after that (*subobviativus*) by the suffix *ini*. Without such elaboration of forms, Jespersen suggests, speech can be clear if only one attends to context, stress, and situation. Is this not a transparent acceptance of the adjustment theory of speech?

SYMBOLS AGAIN

We soon find, however, that beyond this realization of the adjustmental nature of language there is the usual unsatisfactory treatment. The grammarian immediately turns away from his observation of a speaking individual, a person spoken to, and a person or object spoken of, to the analysis of words. Proceeding on the basis that words (pronouns or other forms) represent the different persons, he sets himself the task of working out a correspondence between persons and morphological forms. As a result, not only is the value of the original definitions dissipated, but the ordinary grammatical exposition is full of confusion. Thus appears once more the eternal conflict between a reaction to two stimuli and the symbolization of things by words.

ANOMALIES OF PERSON

Jespersen provides us with an excellent illustration of this confusion. When one says *I am ill*, the grammar book makes *I* first person, and yet it denotes the person spoken of.

Again, when one says *You are ill*, there is a conflict between person spoken to and spoken of. Still greater difficulties are apparent when the secretary informs the club that *He (himself) has sent out the notices*. Would any grammarian say *he* was in the first person? Notice the complete breakdown of the definitions.

We have already referred to the trouble engendered by the pronoun *we*. According to the usual definition the first person should be only singular, and yet *we* is plural. Boas (AI 39) gives a peculiar reason why there can be no first person plural:

A true first person plural is impossible because there can never be more than one self. . . . Logically our three persons are based on the two concepts of self and not-self, the second of which is subdivided, according to the needs of speech, into the two concepts of person addressed and person spoken of.

Aside from the fact that language has nothing to do with this or any other kind of logic, Boas's statement merely refers to the fact that any particular self is one self. When we deal with adjustments, why cannot two persons speak, giving us a genuine first person plural?

Now either the conventional definition is worthless or *we* is not in the first person. To the writer it seems clear that there is a definite conflict here between the reference made by a speaker and the symbolization of words. Neither *we* nor any other *word* stands for the speaker, as our entire psychological study of grammar clearly shows. *We* can naturally be a first person singular if some mortal should again refer to himself as *We, the czar of all the Russias*, or when a scholar refers to himself in this way in his lectures or writing. Then, of course, there is the conventional *exclusive plural* of Tagalog, Samoan, and many African language systems.

That there is always a speaker is a fact that belongs to the province of linguistic phenomena. But the speaker, even in uttering conventional response patterns, need not be referring to himself. When the speaker says *I* or *We went home* he may be referring only to an event in which he indeed participated, but he is not referring to himself as speaker. He is, however, referring to himself as speaker when he speaks of his speaking (*I said it, I repeat my words*), or his illness (*I am ill*). On the other hand, according to the referential conception of person, we should call *it* at least part of a first person utterance when we say *It was we who did it*.

THE FALLACY OF SELECTED EXAMPLES

The confusions concerning person are certainly in part accounted for by the fallacy of selected examples. *I* and especially *me* are frequently references to myself as speaker, not because of the symbolic character of these language forms, but by virtue of the fact that persons speak that way. When a child or an adult says *he* when referring to himself, that still should not change the person, no more than the wife transforms her sex when she asserts that *She is the man of the house*.

THE ORDINARY GRAMMATICAL SOLUTION

Grammarians suggest a principle of dualism or trialism in symbolic notation. Thus in the statement *I am ill*, *I* is regarded

both as first and third persons. This is a superficial saving of the definition which depends upon the principle that a symbol can have several meanings. But does this type of solution provide us with a scientific tool to handle linguistic events? The point is that at will we can make any word-symbol *mean* anything we like. Instead, why not attempt to discover what the speaker is actually doing in the way of linguistic adjustment? When the speaker says *I am ill*, does he refer to himself as speaker as well as person spoken of? There is really only a single adjustment here. A is not referring to himself as speaker, but only to the fact that he rather than B is the sick man. The chances are great that if A were referring to his own saying that he were sick he would declare *I tell you I am ill*. While from a psychological standpoint it is perfectly possible for A to refer to any phenomenon in any way (vocal speech, gestures, etc.), in each case we find a single stimulus-response interaction, as proposed in Chapter VI. Notice that in uttering *I am ill* A may be referring to one of his actions, so that his utterance is a simple substantive response without any pronominal element at all. From a psychological standpoint there is probably no such event as a double reference, although, as we have seen (Chap. VI), a stimulus function can reside in a number of objects.

JESPERSEN'S NEGATIVE THIRD PERSON

Jespersen's solution of the person difficulties merits special consideration. He corrects the ordinary definition of third person by making it negative. For him third person simply indicates neither first nor second person—that is, in third person one does not refer to the speaker or person spoken to. The least troublesome aspect of Jespersen's correction is that his definition is negative.

It is only natural for Jespersen to make *you* second and *we* first person. But what about *you*, when I speak of what my hearer and others have done, or *we*, when I refer to myself and others? We have already seen how Jespersen attempts to save the time-honored definition of three persons—each presumably different from the others—by making person references into symbols and forms, and further by making the forms stand for what he wants to make them represent. But among other difficulties this makes for the denial of the plurality of *we* or

you. We turn now to the psychological handling of speech in order to see if there is any way to clear up *person* problems.

THE PSYCHOLOGY OF PERSON

For the linguistic psychologist the problem of person must be handled purely on the basis of the tripartite nature of linguistic events. Since language consists of an interaction with two stimulus functions, the question arises: What is the dynamic organization of the variables in such events? A convenient scheme is to locate the stimulus functions. When I tell you *I am ill*, you are my auxiliary stimulus—that is to say, I am partially stimulated by you to refer to my indisposition. As we have already seen, the auxiliary stimulus function, as the name indicates, may be regarded as a more incidental factor in the whole event than either the response or the adjustment stimulus object (referent). This means that speakers are relatively more determined by the things in which adjustment stimulus functions inhere than by other factors of the speech event. This way of looking at speech gives us a definite principle by means of which we can differentiate at least seven persons, as the accompanying table indicates.

Person	Locus of Stimulus Function
1 When Adjustment Stimulus resides in.....	Rr
2 When Adjustment Stimulus resides in.....	Re
3 When Adjustment Stimulus resides in.....	Rt
4 When Adjustment Stimulus resides in.....	Rr+Re
5 When Adjustment Stimulus resides in.....	Rr+Rt
6 When Adjustment Stimulus resides in.....	Re+Rt
7 When Adjustment Stimulus resides in.....	Rr+Re+Rt

(1) In psychological first person utterances the adjustment stimulus object coincides with the referor or speaker. Examples: *I am ill*, *That man was I*, *I flatter myself*, or *I* or *me* in answer to the question *Who is there?* In general, when a speaker speaks of himself.

(2) The second person utterance is that in which the adjustment and auxiliary stimulus functions coincidentally inhere or reside in the same person, object, or situation. Examples: *You did that yourself*, *You* in answer to the question *To whom were you speaking?* or *Yes*, as reply to *Did you mean me?*

(3) Since third person utterances are the most frequent and typical, no special examples are necessary. It may be well, however, to indicate their range: *He struck me*, *It came down*,

By him, in answer to *By whom was it sent? They killed themselves, They struck each other*. In general, third person utterances are illustrated by speaking to someone about something.

To a certain extent one may agree with Jespersen when he defines third person as denoting neither speaker nor spoken to. But this is only the case when we are concerned with actual linguistic adjustments and not with word-symbols, whether written or uttered.

(4) *You and I leave tonight* exemplifies a fourth person utterance, though, of course, no formal limitations may be put upon the style of adjustment. To the psychologist it is indifferent whether the speaker (referor) acts vocally, gesturally, or in any other of the numerous possible manners.

(5) When I say *John and myself did that* or *I stepped up to the man*, we have utterances of the fifth person type.

(6) Examples of sixth person adjustments are *You and John must do that*, or *The man before me and his cousin are to be arrested*, when I am addressing the man before me.

(7) Finally, when I say to someone *All of us will go*, in referring simultaneously to (a) myself, (b) the referee, and (c) some other person or persons, I am making a seventh person adjustment. In all types of person utterance it is indifferent whether one or more persons or things constitutes the locus of stimulus function inherence.

To a conventional grammarian our analysis will possibly become more palatable when we point out that there are actually formal vocal utterances to exemplify each of the seven persons. The first three are of course found in all modern European language systems. The other four may be exemplified in a language like Samoan, which employs a dual number. The fourth person is illustrated by an *I-and-thou* utterance, the fifth in the *I-and-he*, the sixth in the *them-and-they*, and the seventh in the *I-and-thou-and-he* (or they) combination.²

CAN STIMULUS FUNCTIONS ALWAYS BE LOCALIZED?

Since the psychological conception depends upon the localization of the stimulus functions, the question is in point whether as a matter of fact one can always locate these functions. De-

² Cf. Bloomfield, (BL 255). In this connection Boas (AI 139) appears to be mistaken when he asserts: "I do not know of any language expressing in a separate form the combination of the three persons, probably because this idea readily coalesces with the idea of *self* and persons spoken to."

spite their invariable presence, one may sometimes experience some practical difficulty in discovering them.

In view of the fact, however, that we have (1) a conception of linguistic behavior, a technique of analysis for linguistic phenomena, and (2) a conception of person (organization of the three linguistic variables) we have only to dissect a speech event in order to localize the stimulus functions involved. In other words, we have linguistic principles and criteria as tools. But even so we may have practical difficulty in using them. For example, it may be true for the most part that we can best perform these analyses when we ourselves are the speaker. But these practical difficulties are not any different from the difficulty a physical scientist has in determining atomic weight or any other measurement.

EVENT ANALYSIS AND WORD CLASSIFICATION

The first requirement for improving the person conception is to distinguish sharply between the different phases of a linguistic event and the mere classification of words. Now, since linguistic events do not necessarily involve a formal vocabulary, the psychological study of person is independent of the use of conventional pronouns or grammatical verbs. Any sort of referential act can be theoretically analyzed upon the basis of the criteria we have worked out.

Also, the mistake must be avoided of confusing at least second person with the vocative or address-case phenomena. Whereas person phenomena have to do with the organization of the three variables of a speech event, case, we shall find (Chap. XVI) is a phenomenon involving primarily reference style.

CHAPTER XV

GENDER

LINGUISTIC PROGRESS IN GENDER

WITH respect to gender the linguist has clearly demonstrated a progressive development. No longer does he regard gender as a phenomenon of sex reference, but rather a sheer matter of classification.

We are not overlooking the school grammarian who still regards gender words as sex references, nor the confirmed symbolist who finds a definite correspondence between each visual or vocal symbol and a significant. The symbolic view is excellently typified by Sapir (SL 101) who asserts that the sex concept is frequently symbolized in such Latin sentences as "*Illa alba femina quae venit*" and "*Illi albi homines qui veniunt.*" By making the following translations he indicates in fact that the sex concept is symbolized in each word:

That-one-feminine-doer one-feminine-white-doer feminine-doing-one-woman which-one-feminine-doer other-one-now-come; and: that-several-masculine-doer several-masculine-white-doer masculine-doing-several-man which-several-masculine-doer other-several-now-come.

Now although gender studies, despite the exceptions, display an advance beyond that apparent in other departments, there is still a great need to bring gender interpretations into harmony with speech facts. Before we turn to the intricacies of gender interpretation, however, we must briefly survey the field.

A SURVEY OF GENDER PHENOMENA

No Gender—In such an extremely analytic language as Chinese we do not expect any gender phenomena. The speakers perform specific reference reactions when adapting themselves to those things and characteristics said to be denoted by gender, such as man, woman, male or female animal, size, class, etc. Boas (IA 36) informs us that the Athabaskan and the Eskimo languages, among those on the North American continent, have no trace of noun classification.

Two Genders—The Romance languages are placed in a two-gender class—namely, masculine and feminine. Says Raoul de la Grasserie:¹ “Toute phrase sous son action fait defiler devant nous tous les objects de la nature représentés comme des hommes ou des femmes. . . .” These gender phenomena are connected primarily with the inevitable article and the suffixes of substantives. The Semitic languages constitute other examples of a two-gender system, but here pronouns and verbs also carry gender characteristics in addition to the nouns. For example, the second person pronoun is differentiated on the basis of whether a man or woman is spoken to.

Two-gender languages are also found among the Amerindians. For example, the Iroquois are said to distinguish between the noble and the mean (LL 196). The noble gender marks off men and good spirits from women, bad spirits, animals, and inanimate things. The Algonquin language divides off the animate from the inanimate, though small animals may be placed among the inanimate, and plants (corn, tobacco, apple) among the animate (Jones-Michelson, AI 761). An animate and inanimate division is also found in Andaman, the language of the Andaman Islands in the Bay of Bengal.²

Meinhof³ reports that a bipartite differentiation is likewise made in the Hamitic languages on various bases—size, importance, and sex. There are, however, many crossings over; first class plural may be in the second class and vice versa.

Three Genders—English and German may be cited as instances of three-gender languages with an inclination toward sex as the basis for division. In the former, however, the differentiation in the article has been dropped, whereas German maintains a full article differentiation and makes the adjective agree with the noun.

Three-gender systems are found of course in non-Indo-European languages—notably among the Chinook of the Columbia River. Boas (AI 36) says that they also occur in a more limited extent among the Indians of Washington and British Columbia.

Many Genders—Probably the largest number of classifications is supplied by the Bantu languages, of which, some writers

¹ De l'expression de l'idée de sexualité dans le langage, *Revue Philosophique de la France et de l'étranger*, 1904, 58, 228.

² Schmidt, *Die Stellung der Pygmäenvölker*, 121.

³ *Die Sprache der Hamiten*, 23; *Die Moderne Sprachforschung in Afrika*, 134 ff., (quoted in PG 227).

assert, there are sixteen (Jespersen PG 226) and others as many as twenty,⁴ though none of them have a sex reference. Chechen, one of the northeast Caucasian group, is said to have six genders of nouns. Only two of these, the masculine and feminine, are regarded as having conventional semantic significance, the others being purely phonetic and congruential in formal patterning.

ANOMALIES OF GENDER

When we study gender from a behaviorial and not a word-thing standpoint, we discover that it does not constitute a referential speech phenomenon. We do not, however, intend to deny merely that gender has to do with sex reference. On the contrary, we mean to point out that gender has no referential character at all. One may agree so far as two-gender language systems are concerned and when the classifications according to size and animation are pointed out. In these cases it is clear that the bases are too rational and the exceptions too numerous to allow for such an interpretation.

A masculine-feminine-neuter system, however, calls for a more thorough examination. Does such a three-gender system really distinguish between male, female, and non-sexual objects? No. Because the cultural patterning of such languages provides us with the most incongruous paradoxes, as in the familiar reference to a gun or a ship as she. Nor is it yielding the point to observe that in the Semitic languages there are such emphases upon sex in the language pattern that even the verbal forms appear to agree with the sex of the subject. The fact that the Semitic languages have no neuter certainly rules out the sex reference from the adjustmental response.

To indicate the lack of coördination between sex and gender—even in those languages (for example, German) which have a well developed gender system—we shall point to some anomalies. (1) Non-sexual objects variously made masculine or feminine: *die Sonne, der Mond*; (2) female objects, neuter gender: *das Weib, das Mädchen*; (3) male objects, feminine gender: *die Schildwache*; (4) objects that may be either male or female, feminine gender: *die Person, die Maus, die Waise*; (5) objects that may be either sex, masculine gender: *der Dienstbote, der Kunde*; (6) both sexes, neuter gender: *das*

⁴ Meinhof, *Grundzüge der Vergleichenden Grammatik der Bantu Sprachen*, 1906, 5 ff.

Pferd, das Kind; (7) male objects given a feminine gender are illustrated by (4).

Another sort of gender anomaly is the double classification in a rigid gender system, though without regard to any factual circumstances: *la livre* (pound), *le livre* (book), *la poele* (frying pan), *le poele* (stove), *die Kiefer* (fir), *der Kiefer* (jaw).

The indiscriminate character of gender is further shown by changes which take place in words. Jespersen (PG 229) informs us that German *die Mitwoche* has become *der Mittwoch* by analogy with *der Tag, der Montag*, etc. French *été* has similarly changed from feminine to masculine on account of the gender of the other season names. Vendreyes (VL 92) says that in the Middle Ages *prophète* and *pape* were feminine.

Consider, too, the gender traits in different languages. It is not an infrequent occurrence for one language to reverse the gender of another, as illustrated by the following lists:

French Feminine	German Masculine
Pierre	Stein
Pomme	Apfel
Lune	Mond
Bouche	Mund
Fleche	Schaft
French Masculine	German Feminine
Fruit	Frucht
Peché	Sünde
Moulin	Mühle
Nez	Nase
Lait	Milch
Nombre	Nummer

GENDER AS A CLASSIFICATORY PHENOMENON

Having discarded the interpretation of gender as a phenomenon of general sexual denotation, does the grammarian better himself by describing gender as classification? In other words, is there any advantage in looking upon gender phenomena as morphological, syntactic, or semantic symbols for animation, power, rationality, sex, or other classificatory items? No, for one is then still thinking in terms of word-things, which symbolize other things. There are two objections to this classificatory conception.

In the first place, gender does not constitute a means of arranging words in systems. As our survey of gender has indicated, it is not only difficult to discover the systems, but also

the criteria for their organization, or the rationale of their existence. Furthermore, the notion of discrete word-things does not match the complex adjustmental activities involved.

In the second place, the classification idea, which implies the localization of gender in particular kinds of words, nouns, adjectives, articles, verbs, etc., is erroneous. There is no doubt that gender phenomena involve the interrelationship between the various phases of utterance patterns. The conflict between the idea of word classification and utterance pattern appears prominently in the examination of gender theories.

TYPES OF GENDER THEORIES

Cultural Ascription Theory—As our first example of a gender theory we cite the conception developed by Herder (1744-1803) and Adelung (1732-1806) and later taken over by Grimm in the third volume of his German grammar. According to this theory, gender manifests the ascription by the poetic, primitive mind of personality and sex to things. This theory may be characterized as a product of the early Romantic conception, according to which cultural phenomena are regarded as the projections of group mentalities. It is to be noticed that the theory disregards neuter gender and implies that whatever gives the impression of the larger, stronger, and more active is masculine, and whatever is smaller, finer, gentler, softer, and more tender is feminine. As evidence for the theory the Romantics pointed out that the hand was made feminine (*die Hand*) and the foot masculine (*der Fuss*).

It is hardly necessary to cite the notable exceptions to this theory in order to disprove it. The obvious imaginary basis is apparent, though the suggestion that grammatical gender arises out of a civilizational background is not without its appeal.

Classifying Instinct Theory—Many linguists base gender upon a general process of classification—that is, they assume that speakers merely segregate word things into orders and classes. Jespersen goes so far as to assert that man has an instinct for classification. Those who believe in classifying—whether instinctive or not—do not rest with that conception, but go on to suggest bases for classification. For example, Byrne⁵ regards gender as “the distinction of substantive objects of thought in regard to the sense of them as independent

⁵ General Principles of the Structure of Language, 9.

or dependent sources of force, or as not sources of force." Wundt regards gender as the expression for a differentiation of things according to their worth, the masculine being a class of higher things and feminine the lower (S 2, 18 ff.). This view perhaps may be traced back to Winkler.*

Current psychologists are for the most part unalterably opposed to any sort of instinct conception, but, aside from this, only an obviously arbitrary selection of facts could lend any sort of plausibility to the bases of these classifications.

Morphological Analogy Theory—Brugmann makes Indo-European gender a matter of suffix analogy. Thus he asserts that the suffix *a* came to be generally used as a mark of feminine gender by analogy with the suffixes of certain words having definitely female significance—for example, *mama* = *mother* and *gena* = *woman*. Grammarians object seriously to this arbitrary and forced theory because there are really few original feminine words with such an ending and many without, as well as many non-feminine words with such a suffix (JL 393). There is further the objection that gender in particular and language in general are limited to word forms.

Phonetic Congruence Theory—Vendreyes (VL 94) asks: In what does Indo-European gender consist? and answers simply: The agreement of phonetic elements. When articles, adjectives, and nouns tend toward a similarity in form, there is gender in the noun, *L'aurore est belle*, *L'abîme est profond*. Wherever the agreement between word forms has dropped out, as in the cases of *L'aurore est splendide* and *L'abîme est sombre*, gender has disappeared also.

Although Vendreyes, like Brugmann, stresses words, his appreciation of the interrelations between them already suggests a notion of speech patterns which is more acceptable to the objective psychologist.

GENDER AS PHENOMENON OF SOCIAL PATTERNING

For the psychologist, gender is neither a matter of logical organization nor a phenomenon connected with words in any sense. Rather, it is a matter of the general social patterning of speech, conditioned by the cultural institutions of the groups in which the speakers reside.

* Weiteres zur Sprachgeschichte, 1 ff., 87.

We have already discussed (Chap. VII) the nature of social or anthropological institutions and their influence upon the patterning of the individual's speech. Now gender phenomena are precisely such ethnic institutions. We shall do well to look upon gender patterning of speech as essentially like the specific vocabulary, phonological, or general morphological equipment of a group which conditions the way its members speak. Just as a member of a particular human group fishes in the manner and with the equipment of his group, so a speaker adjusts himself linguistically according to the speech paterings of his community. Gender patterning takes its place among such grammatical phenomena as aspect, duality, or triality of number, inflection, and so on.

It is by no means a negligible virtue of the psychological conception that it avoids the intellectualizing of speech descriptions and the assumption that speakers are *expressing* certain ideas—for example, sex, size, etc.—by means of gender forms. To interpret gender as the individual's stylistic conformity to the cultural institutions of his group also sets aside the illegitimate assumption that uttered words constitute symbols or parts of symbols for representing particular ideas. It is certainly a questionable doctrine of Vendreyes (VL 96) that gender represents "a mental attempt to classify the exceedingly varied ideas expressed by nouns," even though he asserts that present-day speakers are merely using traditional forms developed by their remote ancestors to express their religiously and mystically motivated conception of the world.

To round out the psychological conception of gender we add that it constitutes a secondary form of linguistic patterning in the sense of being unrelated to specific referential objects. In other words, the patterning of the behavior bears no relation to the conditions of the adjustment. In this sense gender shows greater variation, as compared with vocabulary for example, between linguistic performance and the essential adjustment. All phonetic patterning (vocabulary) is, of course, arbitrary, but it does represent a particular group's technique for referring to things. Vocabulary phenomena, therefore, though remote from things, yet operate behaviorally in a definite adjustmental manner. Not so, in the case of gender. Here the response pattern involves a behavior organization without regard to adjustmental needs.

THE ORIGIN OF CULTURAL INSTITUTIONS

Granting that linguistic gender consists of individual-reference conformity to social or cultural institutions, how do such institutions arise?

Here we must bow to recondite fact. It is only a compliance with the first rules of science to admit ignorance of phenomena which have developed before observational facilities became available. Nor should we set up hypotheses without a reasonable factual basis. Cultural patterns arise, of course, through definite influences, and it need not surprise us in the least that particular patterns correspond to other civilizational features of human groups. Thus we admit that Semitic verb gender reflects an Oriental attitude of sharp sex differentiation. But need this fact be taken to indicate that, if and when a Semitic speaker says *suscho* = *your horse* instead of *susech* = *your horse*, he is at the moment actually referring to the sex of the person to whom he is speaking or that the existence of language patterns conclusively shows a single or indubitable origin?

ACTUAL SEX REFERENCES

The word *sex* is used in a great variety of ways. Whether it is employed as a term in designation or description, or consists of an action, it plays a variety of rôles in human behavior. The important point is that in many instances there is only the remotest connection between the word and actual sexual phenomena.

A fact it is that sex phenomena are not clearly differentiated in our ordinary knowledge and attitudes. We probably should not regard anything as sexual unless it has to do with actual sexual structures and functions. Those who regard woman's place as within the home do not distinguish between woman as a sexual organism and a conventional home keeper. Now despite this fact it is probably an entirely linguistic influence that is responsible for the lack of coördination between conventionally performed sex references and actual sex phenomena. The precisely analytical student of psychological phenomena must work out his descriptions of linguistic behavior by observing when, if at all, the adequate stimulus function inheres in actual sex phenomena. When the plumber orders his helper to bring him a male or female adapter, there is obviously no

sex reference, despite the fact that the person or persons who named the pipe fittings may have exhibited an analogical influence.

As a check upon our gender discussion we now turn to the subject of actual sex references, since there are many referential interactions to genuine sex phenomena. In accordance with the general rule that we must always observe what adjustment the speaker is performing, we must notice whether the adjustment is made to (1) an actual sex phenomenon, (2) a fact involving sexual organization, or (3) a general classification, based on sex differences.

Among the (1) genuine sex references we may cite such utterances as *James is lax in his sexual behavior. Many suffer from sexual repressions. Children should be taught their sexual organization and functioning.* It is hardly necessary to add that we are not placing any limitations whatever upon the mode of reference to a sexual fact. We merely intend to stress the fact that the speaker is stimulated by an actual sex phenomenon as an adjustmental stimulus object.

The (2) type of linguistic adjustment may be illustrated by the utterances: *Women are not as capable as men, Female dogs stray less than males.* The speaker in each case is pointing out a condition or consequence that has to do with real (biological) sexual facts.

Illustrative of (3) adjustments are references to the kind of people one wishes to employ: *Only women are wanted, Engage only male help.* In these instances sex differences happen to be the basis for a class which constitutes the adjustment stimulus. Whether one speaks of a man or woman or of a relationship between the two, the reference is in all respects similar to an adjustment to *mare, stallion, roe, doe,* or any other sexualized object. On the whole the (3) type of references are more like differentiating references to species than references to actual sex phenomena.

In such cases of linguistic adjustment, as in all others, the question arises: How great is the coincidence between a speaker's speech patterns and the cultural patterning of his speech community? Thus, while the speaker may say *she* when he refers to a ship, he will also say *she* when he means to refer to the sex of his adjustment stimulus.

INDIVIDUALITY OF SEX REFERENCES

Our conclusion that gender is merely a phenomenon of cultural patterning without any necessary connection with sex or any form of systematic classification is obviously drawn from a psychological standpoint. The psychologist studies gender as a phenomenon of living language in contrast to the grammarian whose gender results from a process of sophisticated categorizing.

The contrast between grammatical and psychological gender is well illustrated by those situations in which there is a lack of coordination between individual and conventional sex references. Because of the sex taboos of polite European society, physicians frequently find individuals lacking necessary speech equipment to explain their sexual difficulties or to answer questions about sex phenomena. In such cases persons must resort to their own individualized speech patterns.

These individualized sex references contrast markedly with the purely social patterns of conventional gender. Not that there do not exist within conventional linguistic communities groups of persons with full equipments of sex words and phrases. However, they have nothing to do with the gender of grammar books. Such subgroups of linguistic communities are conventional in their unconventionality in possessing a full equipment of linguistic speech patterns for interacting with actual sexual phenomena.

A remark is in order here concerning the influence upon speakers of grammatical categorizing. Though German *Mensch* constitutes a definite reference to human beings—that is, persons—a speaker may hesitate to use it about a woman (Jespersen PG 231) because the *word* has been stigmatized as masculine.

CONVENTIONAL COMMON-SEX WORDS

The contrast between psychological responses and gender is similarly illustrated by the lack of classificatory systems in such familiar situations as require common classificatory terms. Thus arises the jest that one speaks of *man* in the sense of embracing woman. Jespersen (PG 231) offers examples in the utterance *God made the country, and man made the town*, and in his reference to Miss Hitchner's line, which amused Shelley: *All, all are men—women and all!* Jespersen regards such a

lack of a proper classificatory term as a defect in the English language.

To call this circumstance lack of classificatory system is only to emphasize the word-symbol based upon the conventional tradition that each word must stand definitely for one thing. From the standpoint of behavior the references are effective and sufficient, if only the interaction with the inevitable two stimulus functions is present.

GENDER ILLUSTRATES NON-SYMBOLIC CHARACTER OF LANGUAGE

If gender is purely a matter of linguistic patterning it points to the non-symbolic character of speech. When we ask: What do gender phenomena symbolize? no satisfactory answer is forthcoming. It is plain that the students of different languages might give different answers depending upon their linguistic specialty. Some might say sex, others class, size, viability, etc. It is none the less clear that each answer must be a forced one, set up in violation of the phenomena in question.

On the other hand, to regard gender as a stylistic pattern-effect, built up by speakers of particular groups upon the basis of general institutional characteristics originating in the various life conditions of such groups, appears to be a rational solution of gender problems. Gender studies, therefore, when divorced from traditional preconceptions, not only yield evidence against the symbolic theory of speech, but lead to an interpretation adhering to actual facts.

CHAPTER XVI

CASE

THE PROBLEM OF CASE

NOWHERE in the whole domain of grammar are there so many difficulties as in the department of case. Here more than elsewhere we find fundamental disagreements concerning the essential nature of the phenomena studied. The numerous case definitions, indicating great differences in the standpoints from which the various scholars begin their studies, leave the whole subject with hardly a sign of system. In sum, Jespersen (PG 186) seems entirely justified in declaring that "case forms one of the most irrational parts of language in general."

Basic to all this chaos is the indulgence of grammarians in practically all the invalidating linguistic conceptions. From case studies may be analyzed out the influence of (1) classical language paradigms, (2) the language-thing motive, (3) the grammarian's entanglement with notions of symbolism and expressions, and (4) a general contamination of grammatical studies by extraneous philosophical conceptions.

THE INFLUENCE OF CLASSICAL GRAMMAR

How case studies have been influenced by the traditions of classical grammar we are reminded by the humorous as well as inept declensions found, for example, in old English grammars. McKerrow (EGG 148-167) exhumes the following treatment of the noun *cat*:¹

Vocative	O	} cat
Genitive	of a	
	of the	
Dative	to a	
	to the	

Of those writers who would surely look askance at such declensions there are many who are still firmly convinced of the essential similarity between English and Latin cases. These similarities refer to number or declension pattern. The search

¹ Cf. also Viëtor, W., *Der Sprachunterricht muss umkehren*, 2-19.

for either one or the other kind of similarity leads to a serious dilemma. If English, for example, has as many cases as Latin, then we are in danger of running into such declensions, and if we avoid them it is apparent that there are not the same number of cases in the two languages. Those grammarians who argue that English has almost as many cases as Latin must, to avoid the difficulties of the declension pattern, insist upon a different interpretation of case. Others assert that since English cannot have such a declension pattern as Latin it must therefore have fewer cases.

The influence of classical language study upon case theories is a special instance of the generalized technique of interpreting cases on the basis of some familiar language. Whether this language is inflectional Latin, agglutinative Finnish, analytic English or Chinese, the result turns out to be a conception of case based upon a particular type of language rather than some fundamental principle of speech.

THE THING-MOTIVE IN CASE STUDY

The thing-motive is even a more serious influence upon case study than classic language description. When language is treated as an accumulation of things with particular forms we are at once turned away from its essential nature. Accordingly, it is impossible for us to arrive at a workable conception of case or any other feature of linguistic activity.

Specifically, the thing-motive leads to the idea of the morphological modification of or addition to words, or some similar notion of static materials. It is upon the criterion of the presence or absence of such morphological changes or increment that some grammarians rest their determination of the nature and number of cases in a particular language.

To illustrate, Jespersen, who inclines toward the form criterion in grammar, entertains no manner of doubt that the Latin language possesses a dative and an ablative, and he is just as positive that English has neither.² But he must face the fact that the Latin dative and ablative sometimes have the same forms (PG 177). For example, in the sentences *Do Julio librum* and *cum Julio*, *Julio* is dative in the first and ablative in the second. He therefore resorts to the statement that the two cases are established because other words in the same position show us which is used. For instance, in the corresponding sen-

² But see his passive substantive (PG 169).

tences with *Julia* there are different forms—namely, *Do Juliae librum* and *cum Julia*. He goes on to say that this is a similar situation to that of *cut* in English which is preterit in *I cut my finger yesterday*, despite the fact that there is nothing in the form of that particular verb to show that it is not the present. The principle Jespersen uses here is that we must treat languages as wholes rather than take each separate linguistic item on its own merit (PG 51). The very need for this clever argument convinces us that the word-thing view of case has proven inadequate.

SYMBOLIC AND EXPRESSIVE INFLUENCES ON CASE

The word-thing motive in linguistics is only the root of case evils. Its full fruition emerges in the symbol and expression ideas of case. Since the view is somehow inescapable that case is a general phenomenon of language and since such morphological characteristics are not present in all forms of speech, grammarians turn to meanings. Case is regarded as meaning or thought which becomes symbolized or expressed in some other way than strict morphology—in word order, for example, or context. On this basis a separate dative and an accusative can be ascribed to the English language.

According to this theory any feature of word-things—their morphological character, relationship, or similarities—is regarded as a symbol—visual, vocal, or verbal signs standing for cases, that is, relationships. Jespersen's shift from characteristic word-forms to analogical sentences illustrates the operation of the symbol-expression motive, according to which any word or combination constitutes a symbol for the expression of what is in the mind of the speaker. Why Jespersen can shift from the word-thing to the symbol-expression motive is explained by the fact that he carries two darts in his quiver. He can work either with the (O→I) or (I→O) formula (PG 39 ff.). In the first instance he starts with form and moves towards meaning, and, in the second, he moves in the opposite direction. As he suggests, the use of two motives arises from a preoccupation with Chinese which does not provide a solid foundation of word-forms, so that the inner meaning to outer expression must be resorted to.

We have already pointed out that the symbolic-expressive conception is a liability which breaks down the credit of gram-

matical science. We need only add that such a frail linguistic structure cannot in any sense carry the weight of a case theory.

THE PHILOSOPHIC MOTIVE

With the possible exception of tense, case constitutes the most notable example of the logical domination of grammar to the detriment of both the analysis and interpretation of speech phenomena. The study of case discussions contradicts the claim of grammarians that their work is scientific—namely, starts out with a definite subject-matter described and interpreted on the basis of observational analysis. Were this really true, grammar would be safely established as a science—at least from the standpoint of purpose and intention—howsoever short it might fall in descriptive and interpretative validity.

But the most sympathetic survey of the development of grammar does not justify such a conclusion. So far as case is concerned it is impossible to overlook the fact that grammarians are dealing with abstractions derived from preconceptions of logic and not from observations. Concretely, case conceptions are dominated by the view that words or word combinations symbolize or express a certain number of abstract relations. Logical categories are emphasized rather than factors in actual events. This statement holds better for work stressing the expression of meanings than for that which emphasizes word-forms, but since the two are seldom kept strictly apart, it holds fairly well for all case study. Probably no grammarian would care to assert that word-symbols (forms) alone constitute case phenomena.

THEORIES OF CASE

In order to observe just how the different single motives or their various combinations are stressed we shall find it worth while to review some of the outstanding case theories.

Aristotle—For this ancient thinker case was a matter of signification resident either in a word or manner of utterance (*De Poetica*, 1457a, 18). A noun or verb word may carry the significance of a relation *of* or *to*, or a *number*, whether one or many. A mode of utterance, either a command or question, also signifies some kind of condition. In this theory, as is seldom the case in more modern ones, factual conditions or circumstances are regarded as symbolized. The linguistic phenome-

non is, however, looked upon as a thing which symbolizes or stands for these conditions.

Noreen—This eminent Swedish grammarian attempts to correct the unsatisfactory condition in the study of case by dividing off case proper from status. According to him the former has to do exclusively with morphological sound structures (inflection), both radical and incremental, while the latter concerns the semantic placement of adjuncts with respect to their chief elements in sentences (WBS 339 ff.). Upon this basis Noreen hopes to overcome the conflict arising between those who stress word forms and those who insist upon meanings or idea-expressions.

Concerning Noreen's case it is sufficient to say that he allows for a most elaborate equipment of morphological materials. Not only for him does case consist of classical noun inflections, but also adjectival modifications and congruences, as well as all sorts of positional arrangements of words and word increments. He makes room for prepositions and postpositions, so that every possible sort of denotational symbol or language connectivity is covered. It is not unfair to say that Noreen carries the word-thing motive to its farthest extreme.

His status conception, on the other hand, employs idea-expression just as strongly. Language comprises word symbols for expressing every idea concerning space and time relations as well as thought relations. Status then turns out to be the setting up of categories for every condition that happens or might happen. This brief statement of Noreen's theory indicates at once how far it strays from the concrete phenomena of actual language adjustments.

Wundt—It is only to be expected that the concept-expression motive would be a primary factor in Wundt's theory of case. The logic of concepts in their symbolization through word combinations or sentences are not left far behind. Accordingly, Wundt insists that there are four inevitable cases—nominative, genitive, accusative, and dative of indirect object—the cases of conceptual inner determination. These express concepts of necessary relations or conditions and every language must have just this number (S 2, 85). The logical essence of these cases can be clearly discerned in the fact that the nominative and accusative are subject-object cases. An additional special characteristic of these four cases is that the relations expressed

follow from the meaning of the words themselves and do not require suffixes or particles (prepositions) to express them.

All other cases, and they may be indefinite in number, varying with different languages, are called cases of outer determination. Among these may be cited the ablative, locative, and instrumental. These do not express essential relations, which can be symbolized by unique and autonomous words, but must have morphological increments or additional symbols (particles).

It cannot be denied that there is a glimpse of reality behind Wundt's bipartition of cases though a correction must be indicated. It were better to say perhaps that the first set of cases implies a connection of speech with certain happenings rather than that there is an inner necessity of thought to be expressed. Wundt's theory reveals an unjustified assumption that language consists of fixed expressions of intellectual or ideational elements instead of concrete adjustments to stimuli. Nevertheless it carries within it the suggestion that some of the cases are not authentic, but specialized conventions of certain tongues.

Paul—The theory of Paul, which Jespersen claims to share, stands in essential opposition to that of Wundt, in that it implies that case has to do primarily with forms. Paul writes:

Cases are only means of expression, that are not essential ingredients of every language, and which when they are present vary considerably according to the various languages and developmental levels, and one may not expect their functions to comport with constant logical or psychological relations.⁴

Obviously, case forms cannot be universal phenomena, for even if language did consist of word-things, all languages could not duplicate their structural organizations. Also, the truth of the statement that the case functions of different languages do not comport with constant logical or psychological relations is owing to the fact that cases are not forms with functions, but rather concrete psychological adjustments.

Sonnenschein (SG)—In opposition to such a view as Paul's, the present theory regards case as an invariable feature of at least all Indo-European languages. It is put forth primarily in order to support the contentions that English has a dative as well as Latin. The argument is generally based upon the idea that languages of particular families have similar structures.

⁴ *Zeitschrift für Psychologie*, 1910, 60, 114.

Essential to this theory is the view that meaning determines case. But as against Wundt, who makes case any expression of a case relation, Sonnenschein confines his meanings to those capable of connection with the historical grammars of the Indo-European languages. Meaning connects closely with reputed conventions of expression, even though there are no formal word-structures to represent the ideas expressed. Accordingly, Sonnenschein is willing to admit case-phrases—word combinations with prepositions.

Despite the fact that this theory approaches, though at long distance, a little closer to speech conditions than do the absolute-form or the general idea-expression theories, it is still far from offering a satisfactory description of case phenomena.

Blake—This writer offers what he calls a semantic theory, which purports to be a novel and pioneer enterprise in the case field. The number and nature of cases are based upon grammatical principles, speech parts and syntactic relations, and the laws of thought.⁴ The essentially semantic feature of the theory consists in distinguishing between case relationships and case forms. The phenomenon of case refers fundamentally to the former.

The semantic analysis of case yields an exceedingly large number of cases, classified on the basis of what they modify or limit. First, therefore, Blake lists independent cases which stand in relation to the whole sentences of which they are parts—for example, introductory or nominative absolute and vocative cases. Secondly, there is a series of adnominal, adpronominal, adadjectival, adverbial, adadverbial, appositive, and predicative cases.

Another feature of Blake's theory is that the adnominal cases, for example, fall into two general groups—the immaterial (non-spatial or temporal) and material (temporal and local relationships). Blake works out a series of twenty-three immaterial cases. The material cases include stative, ablative, terminal, as well as durational and spatial conditions.

It is clear at once that the semantic theory covers what are presumably the different ways in which thought organizes relationships. It has therefore much in common with the meaning conception of Sonnenschein and the idea-expression theory of Wundt and Deutschbein. It does not, on the other hand, get

⁴A Semantic Analysis of Case, in *Language Monograph*, n. 7. (Philadelphia), Linguistic Society of America, 1930.

away altogether from word-thing theories, although we must agree that it is much freer from formal word bias. It is, however, limited by the fact that Blake accepts the conventional view that case consists of relations in which nouns and pronouns stand to other words in a sentence or to sentences as wholes.

Because the semantic theory allows for many case relations there is fundamental merit in it, and on the whole it undoubtedly achieves better results than most of the other theories. Certainly it looks forward to a description of case on the basis of actual adjustments to referent phenomena. But unfortunately the conventional grammatical principle and the putative laws of thought reduce the theory to a technique for the manipulation of words-things instead of a description of actual speech phenomena.

Is it possible to draw any other conclusion than that we do not yet have a case conception adequate to the facts? Accordingly, we propose an examination of case phenomena from the standpoint of actual speech behavior.

CASE AS PHENOMENA OF LINGUISTIC BEHAVIOR

It would not be strange if, in view of the numerous unsatisfactory attempts to describe what case is, one began to doubt whether it really constitutes a genuine feature of linguistic adjustments. We suggest, however, that the term *case* describes what the speaker does when he refers to the details of a complex phenomenon or event. From a psychological standpoint case phenomena constitute referential responses to the conditions or relations of the stimulus factors in an event. Thus when I say *John is ahead of his class* I adjust myself to the relations between John and the other factors of the referent. Naturally the referential responses are not limited to word-forms or the technical details of language-thing structures.

Since formulated or grammatical speech, however, is always subject to the conventionalities of groups (see p. 84), case may be further defined as the conventional manner of performing linguistic adjustments to the conditions or relations of the constituents of referents. The conventionality of case, like that of any other feature of speech, obviously follows speech-community lines. Accordingly, we find that certain classes of speakers formalize certain characteristics of happenings in their

linguistic patterns just as the members of certain speech communities persist in specifying that the spoken to is or is not included in a reference (so-called inclusive and exclusive first person).

WORD-THING AND PSYCHOLOGICAL CASE COMPARED

The great gap separating case theories based upon word-things—which symbolize and express relational ideas—from the theory that case is concerned with referential reactions to actual events is illustrated in Wundt's three-stage language evolution (S 2, 73).

The first stage is represented by Soudanese, Papuan, and Australian languages in which case relations are mostly expressed not by definite modifications of the noun element, but by sentence arrangement and special words connected with the verb no less than with the noun.

A second more evolved stage is that in which concrete conceptual relations become centered in the structure of the noun. Here the relations expressed are local, temporal, or perceptual, rather than grammatical. In these languages the nominative, accusative, and genitive are little developed. Examples are the American Indian languages.

Wundt's third stage embraces Semitic and Indo-European languages which have had rich developments of formal noun-structure declension, but which have retrogressed somewhat to take in prepositional group techniques for expressing relational ideas.

In the theory underlying such a language evolution the emphasis is all upon how putative ideas are expressed through words, whether regarded as acts or written things. For the objective psychologist, on the other hand, the fundamental question is: What do individuals do in the way of talking to each other?

The psychologist regards it as axiomatic that any speaker can say anything that any other speaker can. No one is precluded from referring to any kind of happening. The limitations in this direction are limitations of knowledge and observation rather than of linguistic efficiency. Who can deny that when the peasant points to an event, which only the scientist can describe with verbal precision and accuracy, we have an adequate speech adjustment? To believe otherwise is to invoke some criterion other than a distinctively psychological one. It

is a prejudiced view to regard the scientific adjustment as a superior one—a kind of prejudice that eventuates in the view that a poetic reference to an event is inferior (or superior) to a scientific one. The question is: What is the purpose of the reference? But no such inquiry is legitimate within the field of psychological language behavior. All such purposes are extra-psychological and extra-linguistic.

The psychologist does not hesitate to say that every language has every case (reference) that any other language has. This is true as a matter of adjustment, not as a matter of specific convention. So far as the latter is concerned language must differ in this respect as in every other. There is no reason why speakers should conform to a set pattern in the way they habitually refer to things, any more than in the choice of specific words or sounds.

To look upon certain languages as capable of doing something other languages cannot do is to insinuate into one's thinking the idea of ultimate differences in the psychological efficiency of people. Whatever differences we actually find in the speech of different communities reduce themselves to variations in capacities and habits owing to the presence or absence of certain civilizational components. Eskimos cannot talk about rifles until the white man brings them rifles to replace harpoons. We may say then that all speech communities are at least potentially alike.

Aside from those speech differences which arise because of variations in civilizational equipment, there are also the different conventionalities in which equivalent adjustments are made. These variations likewise correspond to differences in custom. Some communities inter their dead; others burn them, etc. Every factor of speech varies from group to group, including case references.

Grammatical wars concerning case may be explained entirely on the basis that the scholars concerned never take an objective psychological position. Of all those who carry on their battles under different banners each takes some special position on the basis of formal words as expressions of ideas. Starting from a certain position, one declares that English has no dative, whereas another insists that English is as well equipped as Latin. This group adopts a somewhat more generous attitude toward the formality of the symbol. In general, those who are more liberal concerning the formality of word-

thing symbols approach closer to the phenomenon of actual speech and in consequence allow for more cases in English or Chinese than do the others.

HOW MANY CASES?

As we have already indicated, investigations of case are peculiarly concerned with the number of cases. How many cases are there? Suppose we attempt to answer this question for a particular language—say, English, what do we find? As Sonnenschein says, “English grammar has gradually advanced from the denial of the existence of any case of nouns to the recognition of four or five” (SG 7n). It all depends upon the criterion used. The strict formalist declares that there is one—the genitive or possessive, because that is the only one that shows a case relation by inflection. Those grammarians who are a bit lax in their formalism allow two—the genitive and indiscriminate common case. Since the beginning of the nineteenth century (Lindley Murray) three cases—nominative, genitive, and objective—have been ascribed to the English language. The criterion here is relation of words in a sentence. Sonnenschein, on the basis of meaning, argues that English has five cases—nominative, vocative, accusative, dative, and genitive.

Let us not be misled into thinking that there exists in grammatical history a progressive allowance. For, as we know, current grammarians agree not at all as to how many cases there are in English. Though school grammarians teach that there are three—nominative, vocative, and genitive—most grammarians give only two, though not the same two. Some allow the nominative and oblique, while others favor the subjective, or nominative (he) and objective (him) couple. Still others insist the two are the genitive and the common, the latter embracing what are known in Latin as nominative, dative, and accusative.

The difficulty of English case number is paralleled by the different estimates linguists give of the cases of other languages. For example, to Indo-European in general is ascribed seven (LGL 205). Whitney denies that the vocative is a real case, since it stands in no syntactical relation with anything else. Others give eight or nine (SG 15). Similarly, in linguistic literature Finnish is said to have 12 cases (Blake), though a frequent number given is 15 (FG 20), and Bloomfield (BL 272) raises the number to 20 or so.

CASE AND SPEECH PARTS

Do grammarians really inquire concerning the nature of case? The plethora of discussion suggests that at most they quarrel about which of the traditional views they should adopt. As we have seen, the question for them is: Shall the criterion be the word-form, the ideas expressed, or the relationship of words in sentences?

This procedure is exemplified by the way grammarians relate case with speech parts. They do not ask whether there really is such a connection, but proceed on the basis that there is and then ask with what part or parts of speech case is concerned.

That case and certain speech parts are related is an idea derived from the ancients (SG 1). As grammatical history indicates, the early Greek grammarians (Peripatetic) connected case with the substantives. Because it was only the accusative, genitive, or dative that fell or declined in form, they denied the name case to the nominative. The nominative form of noun was accorded that designation by the Stoics. This view that nouns alone express case contrasts with the view of Aristotle that case had to do with noun, verb, or whole utterances.

Those who connect case most closely with nouns are perhaps the most extreme symbolists. They make case words stand either for external or local relations, as the Stoics, or for ideas which are expressed through these symbols, as is true for Wundt.

Current grammarians, like Sonnenschein, who stress meaning or the uses of words in sentences, allow for case phenomena in connection with three speech parts—namely, nouns, pronouns, and adjectives (SG 8). Seldom is the verb connected with case.⁵

Compare the conception of case as connected with specific parts of speech with that which regards case as a linguistic phenomenon involving complete utterances or speech adaptations. In the latter instance we get rid completely of the notion that case has to do with speech parts as forms of word-symbols.

Case has nothing to do with speech parts—unless speech parts are regarded as referential responses. Case references consist of speeches concerning the goings on among the people,

⁵ But see Deutschbein (SNS 292 ff.); Keilmann, *Dativ und Akkusativ beim Verbum*, (Giessen), *Dissertation*, 1909.

things, animals, or other objects constituting our adjustment stimulus objects. It follows then that case references as aspects of linguistic adjustments are therefore connected with every type of speech part and not with particular ones.

We must add further that any distinction between case words and case phrases has no significance from the psychological standpoint. The whole question is: Does a speaker refer to some kind of event in which various interconnections of things are going on? Pointing to it, speaking one word, or uttering a flow of vocal references are all particular forms of linguistic adjustment performances.

CASE AND GENDER

The essential nature of case is clarified by comparing it with an altogether different type of grammatical phenomenon. Put case beside gender and we find that, whereas gender constitutes only a general patterning of utterances without regard to things spoken of, case has a definite referential function. The latter gives us particular speech patterns constituting interactions with particular things referred to.

All the various grammatical items may be similarly compared with respect to whether they are referential or purely patternistic. Speech-parts phenomena, as we have seen, are for the most part referential, though some are merely conventional patterning. Person is referential with a large indifference factor in behavior patterning—in other words, partially adjustmental and partially conventional. Number, we shall find, is certainly for the most part patternistic. The remainder of the items can be similarly characterized.

CASE AND PREPOSITION GROUPS

The grammatical doctors—for instance, Sonnenschein and Jespersen, disagree as to whether prepositional groups or what the latter calls *analytic cases* should be regarded as parallel to the synthetic cases which consist of word forms, whether modified (inflected) or not. The division between grammarians has its basis in the varying espousal of a formula or meaning criterion. Sonnenschein, who adopts the meaning criterion, is quite willing to allow the prepositional groups as case forms. Similarly, Deutschbein quotes as examples of the English dative *He*

came to London, This happened to him. Now from the observer's standpoint there seems to be no good reason why a prepositional compound should not be regarded as a case reference behavior pattern. Why should one insist upon a word or an incremental suffix to a word as the sole criterion for a case utterance? So far as Jespersen is concerned, a strong argument could be made for the prepositional group, since he is willing to base his grammatical system upon both the $I \rightarrow O$ (meaning to form) and $O \rightarrow I$ (form to meaning) aspects of language. Also, Jespersen is clear on the artificiality of making a grammatical unit consist only of what appears to be written as one word.

From a psychological standpoint it is obvious that the differentiation between a prepositional group and a word form is highly artificial. When we invoke the criterion of what the speaker is referring to, it is entirely indifferent what type of speech pattern he uses.

There is, however, a clear distinction to be made between strict prepositions and case references. The preposition as a referential pattern constitutes an adjustment to a relation. In other words, when the speaker is referring to place, time, succession, and other relations, we define his behavior as prepositional (p. 189). On the other hand, case references, as we have already indicated, constitute adjustments to the interrelationship of factors in an adjustment stimulus. When the speaker says *John just came home*, we have a definite case reference, since he is referring to the configuration of an event. It is a matter of no significance that, when the reference is conventional, a prepositional and case response may be descriptively alike. For example, when I say *John came to London*, I may be referring to the interrelationship of John and his coming with respect to London, though, on the other hand, I may be merely referring to the place where John is. The differentiation is made, of course, upon the basis of what kind of psychological adjustment the speaker is performing and not upon the kind of words used. We may differentiate between the psychological and grammatical procedure by indicating that whereas the grammarian forgets all about the speaker and his action and concentrates his whole study upon the words that have been uttered, the psychologist keeps the two distinct. The latter does not analyze the utterance *John came to London* as word

symbols in order to find relations between these words, but instead he studies the adjustment between the speaker and the actual referent—an adjustment which need not be performed by means of words, but by various kinds of gestures.

ENGLISH AND FINNISH

Those grammarians who have gone beyond the simple word-form conception of case undoubtedly have an advantage over those who cleave to it, for at least the former catch a glimpse of the adjustmental character of case phenomena. But they do not and cannot go far enough. An adequate view of case requires the description of speech phenomena as adjustments to actual things and conditions.

As an experimental test of the adjustmental theory of case we propose a comparison of English and Finnish, since to the former are attributed few or no cases and to the latter an exceedingly large number. If it appears reasonable that English and Finnish speakers react similarly to things, a measure of plausibility will thus be accorded the theory.

Why do grammarians give Finnish from twelve to twenty cases? The answer is that Finnish texts consist primarily of variously modified nouns. The formula constructed is that a case-form consists of a noun with a preposition (postposition); for example, *maalta* is said to correspond to the English *from land*, though the two words in Finnish are combined into one with *land* as the second half. Finnish, then, has twelve or twenty cases because the language of the Finnish speaker consists of patterns centering around the noun. Notice how Eliot describes the facts in his grammar (FG):

To understand Finnish syntax it is of the greatest importance to remember that there is no real distinction between nouns, adjectives, adverbs, prepositions, infinitives, and participles. In fact, all the words of a sentence, except the forms of a finite verb (and a few particles which have become petrified) are nouns, and as such are susceptible of declension, so that the significance of the cases has an importance extending over almost the entire grammar.

Despite the description, however, Eliot states that the adjectives are declined exactly (42) and pronouns almost exactly like nouns (53).

To facilitate our discussion we set down Eliot's scheme of Finnish cases:

Nominative—	
Partitive—	Equivalent to English <i>some bread</i> or French <i>du pain</i>
Genitive—	Combines English genitive and accusative
Inessive—	Place in which anything happens
Elative—	Place from which motion takes place
Illative—	Place into which motion takes place
Adessive—	{ Place on which motion takes place
	{ Object with which motion takes place
Ablative—	Motion from
Allative—	Motion towards
Abessive—	Absence of something
Prolative—	Motion along; for example, <i>maitse</i> = by land; <i>meritse</i> = by sea
Translative—	Change in form of existence
Essive—	State of being regarded as continuous, <i>lapsena</i> = as a child
Comitative—	Expresses with; for example, <i>lapsine</i> = with his children
Instructive—	Means by which anything is done

In addition to these fifteen cases Eliot informs us that there is a second allative, an instrumental, an accusative, and an excessive, but notice that the accusative function is said to be expressed by the genitive, that the excessive is described as expressing departure from place or state, which would make it like the ablative, and that the adessive and the instructive both are instrumental in function. Furthermore, the grammarian explains that the singular instructive is used only in poetry and that the prolative is seldom used.

Finnish cases constitute at bottom merely a series of linguistic patterns for performing adjustments carried out in other ways by speakers of other languages. But this is a fundamental principle of all speech behavior. The speaker of every linguistic community acts differently from the speaker of every other community when he performs equivalent adjustments. These differences, as we have seen, can be described on the basis of phonology, morphology, and syntax, to use conventional terms. Finnish therefore has many more cases than other languages merely on the basis of particular ways of describing textual word organizations. There is, however, no necessity to describe any linguistic behavior in terms of word-things as particular kinds of speech structures. When we do not interpret language in this way we find that Finnish has no more cases than English or any other language, nor different ones from these languages.

When we examine Finnish cases a little more thoroughly, we find that the morphological formula of roots plus suffixes will

not hold generally for the nominative and specifically not for the first of the three declensions. On the other hand, when distinctive forms are present they need not have a distinctive case function. The accusative, which undoubtedly must find a place in so large an array of cases, has the same form as the genitive; the accessive has the same function as the ablative; and similarly, the same function is ascribed to the adessive, instructive, and instrumental. Also, the comitative suffix is equivalent to a conjunction. And finally the inessive, elative, illative, and in part the adessive, are really prepositional in character.

How many distinctive cases have we left? Only the partitive, abessive, allative, prolative, translative, and essive. So far as the partitive is concerned, we must notice also that in addition to the use we have indicated, which is really a stylistic one sustaining only a remote connection with actual case phenomena, it is said (FG 134 ff.) to express motion from a place, comparison and other adjectival meanings, salutations, exclamations, etc. The abessive also may be taken out of the case list, since it is used to indicate negation or the absence of something. The allative, as the reciprocal of the ablative, the prolative, and the translative may be regarded as genuine case references.

We conclude that the number of Finnish cases is not far from that of English, since there are not above five. Certainly, far from having many more than most languages it may have less. But notice that this statement is made in the spirit of conventional grammar—upon the basis of the reduction process we have performed. It is quite another matter to estimate the case numbers upon the basis of actual references to events in which A, B, C, etc., as things or conditions interact with each other. There may be a large number of different case references performed by the speakers of any language, although these references may be summarized in a comparatively few cases (forms or patterns).

A typical classification may consist of references to the fact that:

- (1) Something is happening to A
- (2) A does something to B (+ c + d, etc.)
- (3) A does something in conjunction with B (etc.)
- (4) A changes position with respect to B (etc.)⁶

⁶The reader will notice the correspondence of the suggestion that case is a particular type of adjustment with that made in the discussion of speech parts.

When we consider that in (2) A may strike, manipulate, modify, steal something from B, etc., and that the number of references in this class is very large, we may assert again that any speaker may perform as many case references as any other. But in every instance he does it differently. Just as the sounds and their combinations (vocabulary) are different, so also are the other institutional characteristics of referential adjustments. The point is that the way references are made differ, but not the references themselves. If Finnish is described as a noun-modification style of reference it naturally differs from English, but this does not mean that it has more cases, if by case is meant event reference. It is probably that type of description, with the corresponding translation of other language expressions, which is the basis for the conventional case forms.

To assimilate this view one need only turn from abstract-thing speech to actual speech utterances. When we do so we can compare corresponding adjustments between the activities of any speakers.

CHAPTER XVII

TENSE

TENSE AS THE WORD-SYMBOL COUNTERPART OF ABSTRACT TIME

IN the field of tense the logicizing process of grammar has demonstrated its full power. Linguistic responses and the things to which they refer are transformed into the most barren of abstractions. On the one hand, time (temporal circumstances) is made into sheer points in a void, while tense is taken as word-symbols standing for these points.

Madvig's Tense Scheme—An excellent illustration of such transformation is provided by Madvig's¹ nine-tense scheme reproduced below:

Madvig's Scheme of Latin Tenses
(LSS 301)

	praesens	praeterium	futurum
(in praesenti)	scribo	scripsi	scribam
in praeterito	scribebam	scripseram	scripturus eram (fui)
in futuro	scribam	scripsero	scripturus ero

A glance reveals at once that it is nothing more than an adaptation of Latin words to a three-times-three conception of *time* division. This nine-point time-scheme Jespersen (PG 255) informs us is a common one among grammarians, though they do not fit it to actual grammatical forms. Madvig, he adds, probably meant to apply the scheme only to Latin.

Jespersen's Tense Scheme—Jespersen's twofold criticism of Madvig's scheme is based, on the one hand, upon a criticism of Madvig's notion of time and, on the other, upon a criticism of his grammar—that is, Madvig's idea of words in their syntactic relation. So far as time is concerned, Jespersen thinks that it

¹ J. N. Madvig (1804-1886), distinguished Danish Latin scholar.

is wrong to divide the present or *now* into three divisions, since a point has no divisions. Furthermore, he believes that time itself is one-dimensional, and hence must be represented by a straight line instead of a static two-directional spread.

On the side of grammar Jespersen takes the position that there is no real difference between the *scribam* boxed as *praesens in futuro* and *scribam* placed in *futurum in praesenti*, or between *scribebam* called *praesens in praeterito* and *scripsi* located as *praeterium in praesenti*. Accordingly, Jespersen produces a seven-tense system as follows:

Jespersen's Scheme of Tenses
(PG 257)

A Past				C Future		
before-past	past	after-past	present	before-future	future	after-future
Aa	Ab	Ac	B	Ca	Cb	Cc
ante-preterit	preterit	post-preterit	present	ante-future	future	post-future
			O			

Jespersen admits that this scheme does not include all possible time categories, nor all the tenses of the various languages. Accordingly, he proceeds to examine how his set-up fits various grammatical formulations. For example, he asserts that for simple past time English has one tense, the preterit—e.g., *wrote*, while Latin has two, *scripsi* and *scribebam*. For simple present time he tells us that those languages having tense distinctions in their verbs generally use the present tense. When it comes to simple future time, Jespersen finds that the grammars, which presumably represent different types of speech, contain many peculiarities. For instance, (1) present tense is used for future time, (2) future time is symbolized by volition especially in English and Danish, while (3) forms symbolizing thought, obligation, motion, possibility, etc., are as much employed in speaking of the future as pure future grammatical forms.

Notice, therefore, that even with respect to the so-called three main divisions of time there is no clear-cut one-to-one relation between a grammatical form and a definite time point. When

the subordinate divisions are examined, there are still greater discrepancies. Jespersen asserts that he knows no language which has a simple tense for after-past time and that the after-future time has chiefly a theoretic interest. This leaves a pluperfect or past perfect tense for before-past time, and the future perfect tense for before-future time, as the only definite time subdivisions.

From both the tense schemes presented and the difficulties inherent in them we must conclude that there is no value in such treatments of tense for the understanding of time references. Such schemes amply testify to the impossibility of making words or word combinations, to say nothing of speech, into symbols standing for arbitrary formulations of time flow. Is it true that even textual material consists of such cold symbols? And further, is it necessary to compress the social patterning of speech responses into such capricious schemes? Let us say nothing of these crude conceptions of time; let us overlook the complete neglect of all the relativistic time concepts of our age, with the possibility they present that time may be reversible instead of a one-dimensional flow. And there is still a shocking traduction of time and tense. Such schemes demonstrate how great is the deviation between such treatments of tense and descriptions of what speakers do when they make (perform) temporal references.

Granted that tense has to do with time references, is it in any sense true that we react linguistically to such artificial time abstractions? True enough, the physicist and other scientists talk about such things, but the physicist's time or *t* is far removed from ordinary time references—that is, from the references of the ordinary speaker. Is there even the remotest indication that the speaker who tells what happened yesterday is even slightly aware of a time flow? Does a seven or any other kind of tense system aid our understanding of temporal aspects in speech?

WORDS AND SPEECH

These artificial schemes strikingly illustrate the violence done to our study of language phenomena when we traditionally and unwittingly transform speech into stultifying symbols. The unsatisfactory consequences of dealing with tense-words rather than with speech may be summarized by contrasting the grammatical handling of time symbols with studies of actual speech behavior.

In the ordinary grammar, the emphasis is all upon the interpretation of words—that is, the indication of what words stand for in terms of abstract points of time. From the standpoint of speech the entire problem centers about what a speaker does when he makes references to time phenomena. In the latter case the question is: What sorts of temporal adjustment stimuli does the person interact with, and in terms of what sorts of behavior configurations must we describe his behavior? The failure to be alive to the differences in these two fundamental approaches to linguistic phenomena results in such chaotic thinking and writing as are found in the treatment of tense. Every grammar book shows us how adherence to word-study radically deranges the descriptions of tense.

We have already referred to the assertion that the English language has no future tense.² Is it not the insistence upon a particular symbol to stand for the future that makes the trouble here? Because the word-symbol *will* is regarded as standing for intention it seems to grammarians not to be a symbol for futurity. It is a paradox that grammarians will not on the same basis reject such words as *is*, *are*, or the several variants of *have*. In no sense are *is* and *are* less symbolic of existence or *have* of possession than is *will* symbolic of willing.

Another illustration of the effect of dealing with words rather than with behavior is afforded us by the misleading conventional paradigms. A case in point is the inclusion in the English paradigms of such present tense symbols as *go* and *write*, although we do not say *I go home*, *I write a letter*, but *I am going home*, *I am writing a letter*. It is only the unidiomatic foreigner who sometimes speaks English according to the paradigms—because he is not so much speaking English as reciting a lesson.

So much for ineptitudes of description. A similar detrimental influence upon explanation is traceable to the preoccupation with words. Consider, for example, Jespersen's explanation why simple future time is expressed in so many different ways—for instance, by the present tense, tense of volition and thought, motion, possibility, and others. This fact exists, he says, because "we do not know so much about the future as about the past, and are therefore obliged to talk about it in a more vague way." Is the future more vague than the past as a stimulus

² "English *will go* cannot be given as a pure 'future tense'" (PG 260). In (JL 275) Jespersen allows English a makeshift for a future tense.

for speech? Does not psychological observation teach us how inexact are all reports of past events? On the other hand, when I promise to meet you at noon tomorrow, am I from any concrete human standpoint any the less certain of the future than I am of the past? To deny the equality here is to confuse a technical knowledge phenomenon with a speech situation. So far as words are concerned surely we do not speak very definitely about the past when we use present forms.

Does anyone really have any difficulty in talking about events either past or future? We surmise that when Jespersen raises such questions he is really encroaching upon what he calls logic, as he suggests in the Preface to his *Philosophy of Grammar*. We need only add that what grammarians mean by logic is nothing more nor less than abstractionism and rationalization and not really logic at all. Consider, for example, Jespersen's rationalization of the use of the present for the past. He says that really present time is really past and future—that is to say, durational (PG 259). Such statements constitute only stubborn resistances to the observation of how fatal the symbolic viewpoint is in linguistics.

As another illustration we add the explanation why English has adopted the auxiliary *shall* or *will* with the simple infinitive of the verb as a future tense. To quote Curme: "In the oldest English the present tense was the usual form employed to express future time. . . . As this old means of expression is not accurate enough for higher purposes" (CEG 83) the compound tense was developed. Yet we know how utterly inaccurate the compounds and periphrastic forms are. We wonder whether the higher purposes are something beyond good conversation.

TENSE AND TIME

If it is true that grammarians mean by time the abstract points in a field-spread or an equally abstract time-flow, then it is plain that conventional tense has nothing to do with actual time. On the other hand, it is certain that no speaker really refers to any kind of abstract time. Aside from the non-existence of abstract time entities in the world of the everyday man, the ordinary speaker does not know that there are such entities at all. The man of science, of course, does deal with all sorts of time constructions—abstractions of actual time conditions or events. It is perfectly established, however, that references to

time or *t* in this departmentalized field of human effort are certainly not interconnected with grammatical tense.

It is hardly necessary to add that classical and traditional motives coöperate with the logical in influencing the work of grammarians. The grammarian's treatment of tense is doubtless fashioned by occupation with Indo-European materials and harmony between newer and older views.

Do not these combined circumstances constitute the basis for regarding a verb as a time word (*Zeitwort*)? Our primary interest, of course, is in the fact that the overemphasis of the time-aspect of verbs leads to the abstractionistic notion of time in the grammatical field. As we have pointed out (Chap. III), grammatical verbs really represent responses to the actions of things. Even though no action can be described without a time factor, this factor need be no essential part of the reference. When I say *I am going home*, I may be merely informing you of what I am going to do, and it is an act of supererogation to assert that I am at least implying that I am acting in the present instant of time. There is a difference between a technical description of an action and a casual linguistic reference to it.

As a matter of fact, however, every grammarian usually objects to making verbs time words, since he has to face the distinction between so-called finite and infinite forms. It goes against the grain to call an infinitive a time word. And to call an infinitive a verbal-noun brings up worse difficulties.

Another terminological question arises. Why has a type of word (verb) been given the general name of word (verb)? Perhaps the compelling notion of the importance of actions as adjustmental stimuli is responsible for this, and if so, the time emphasis is somewhat relinquished. Those grammarians who call the verb a sentence-forming word, a phenomenon word, or an *Aussagewort*, also pay tribute to its action-referring character and save themselves from a too great stress of time.

Let us now consider the nature of time as it operates in speech situations. At once we must point out that the time involved in linguistic situations is the unsophisticated phenomenon to which references are made. In general we might specify that there are three such referential objects. The first consists of specific moments of time which one speaks about. *I have no time* is a reference to the fact that there is no moment nor other amount of time in which to do something one is asked to do. The second is the location of happenings. *I won't come until to-*

morrow, He will leave on the 25th. The third type of unsophisticated time is that referred to when the speaker says *I will do that after I finish my paper.* In this case we have a definite order of events referred to. Perhaps we might add a fourth kind of time to the above—namely, the scientist may speak of time in the sense of a time abstraction, when he criticizes his student for calculating with *t* when *t square* should have been used. We have already indicated that this instance is entirely disconnected from grammatical tense situations, but we must make a place for it in the field of linguistic behavior.

INCONGRUITIES IN TENSE DESCRIPTION

Though grammarians say and doubtless believe that the present tense is used to express present time, they immediately indicate by example that the present tense expresses everything but present time. As McKerrow (EGG 148-167) says, "The present is used to express another meaning and something else is used to express the present." Then there is the indefinite or timeless, as well as the historical present, which the college grammarian advises his students to desist from using.

Next we must face the facts of tense without time and time without tense.

TIMELESS TENSES

A serious weakness in the abstractionistic armor of the tense conception may be localized in the fact that what are called tense words occur in utterances in which there are no time references whatever. As far back as the Greeks, time-referring utterances were distinguished from other sorts of expression. Aristotle (*De Interpretatione*, 3) differentiated between verbs and tenses of verbs on the ground of time, while tenses really indicate definite time references. Jespersen has written an elaborate section on the non-temporal use of tenses. He points out that the future tense is often used to express supposition or surmise concerning a present event, and quotes the following illustrations: *Il dormira deja, He will already be asleep, Er wird schon schlafen.* The preterit is similarly used to indicate unreality or impossibility (PG 265). All of this suggests that it is a form of intellectual blindness to allow symbolistic traditions to obscure the fact that what the grammarian calls tenses are simply speech patterns—sometimes performed as temporal ref-

erences—but which language students hypostatize into fixed symbolic forms.

Then there are the gnomic tenses: *Man is mortal, Men were deceivers ever, Rira bien qui rira le dernier*. As Jespersen (PG 54) says, here there are no real distinctions of time any more than in the first utterance there is a distinction of sex, despite the forms. A psychologist, of course, would not regard such utterances as speech, though they are definite psychological adjustments.

We may also mention here a number of tense anomalies—for example, the perfect. Sweet (NEG 98) asserts that the perfect combines past and present, while Jespersen (PG 259) regards it as a permansive or retrospective variety of the present. The so-called indefinite tenses, *Man is mortal, The sun rises in the East, Men were deceivers ever*, also provide the grammarians with great difficulties. Though Sweet calls such utterances indefinite tenses (in addition to being present tense forms), Jespersen objects on the basis doubtless that such terms are contradictory. He sticks to the conception that tenses have to do with time and steps into the trap that there is a time called eternity. Other grammarians, however, are just as certain that such tenses are timeless (PL 210, 788).

TIME WITHOUT TENSE

Just as there are tenses without time, so there are actual tense references made independently of so-called tense forms. Such references can be made with special time words—adverbs of time or even words that are called adverbs of place (*before* and *behind*). *He stood before (behind) the man. He came before I did. You are behind time*. Also included among real time utterances are *already, yet, encore, pas encore, schon*, etc.

Furthermore, grammarians themselves make clear that tense as an historical or accidental feature of verbs (formal verb forms) in certain languages is also symbolized by what are called nouns or other speech parts. For English, Jespersen gives such illustrative utterances as *ex-king, ex-roi, the late Lord Mayor*, etc. For other languages he quotes (PG 283) from Barnum³ to the effect that in the Alaska Eskimo there are the following forms:

³ Grammatical Fundamentals of the Inuit Language of Alaska, (Boston), 1901, 17.

ningla—cold, frost
 ninglithluk—preterit
 ninglikak—future

puyak—smoke
 puyuthluk—what has been smoke
 puyoqkak—what will become smoke

From Boas (AI) he gleans the information that in Athabaskan (Hupa) the prefix *neen* denotes past time in both substantives and verbs.

xontaneen—a ruined house
 xoutneen—his deceased wife

Exceedingly important here is the consideration of gesture language, which can hardly be connected with conventional word symbols. Wundt points out that gesture language, which because of its nature must follow the order of events, does not require any sort of reference other than a corresponding order of gestures (S 1, 228).

Not to be neglected either are those language situations in which there are few, if any, tenses; yet it is impossible to believe that speakers lack the means to refer to definite time stimuli. Here we cite the Semitic languages with only the perfect and imperfect, the latter doing duty—according to the formal grammarian—for both the present and future of other languages. The Slavic two-sense systems provide another example. Be it recalled also that historical grammarians regard the elaborate tense forms of modern Indo-European as developments from older aspective types of utterances. In view of this historical development we must keep before us the possibility that many tense forms are more in the nature of conventional modes of time reference than fundamental symbols.

We may perhaps find some evidence of this in the fact that “there is a group of verbal forms which were originally past tenses, but have come to have the meaning of the present tense.” Curme (CEG 62), from whom we quote, gives as examples *can, dare, may, shall, will, must, ought, and not*. Such obvious modifications in usage strongly suggest that the speech-pattern view may well predominate over the symbolic.

TEMPORAL SPEECH PATTERNS AND TIME SYMBOLS

Observe how widely grammarians differ in their ideas concerning what symbols stand for. To illustrate, Wegener (UGS 109) takes issue with those who say that Indo-European tense constitutes expressive forms symbolizing the order of interrelated happenings. He asserts that on the contrary they are

expressions for the relation of the speaker to the actions or happenings referred to. Thus he says that of two past happenings, one of which precedes the other (Latin, *veni-vidi*), the first is not symbolized by the pluperfect and the second by an aorist, but both by the aorist, since the speaker stands to both in the same temporal relation. The view bobs up that each expression or form should have its own unique time-point, though the whole conception of a coördinate set of words and time-points may be at fault.

The same implication is present whether one adopts the view of Wegener's opponents or a compromise position. In each case there is a formalistic ideology behind the conception. Because we reject such crude formalism we believe that tense phenomena are merely conventional speech habits induced by the customs of a group. Of these habits there are all sorts, including formal word-combinations as one type. Accordingly, temporal utterances are localized, flexible styles of action, which are full of possibilities for variation from person to person and subgroup to subgroup. Moreover, speakers can adjust themselves to those events in which they are or are not concerned.

To think in terms of behavior patterns enables us to avoid such difficulties as that "some languages confuse time distinctions which in others are kept distinctly apart." Is it true that a language containing both the aorist and the imperfect is more accurate than one lacking these forms? No, because in the first place the attempt to distinguish between them gives only a distinction of tempo or something similar (PG 276) and in the second place, no more efficient speech is provided by an increase of styles. The alternate use of these forms is similar to that of the varying use of the simple preterit or the perfect. In actual speech situations does it make any difference whether a German says *Waren Sie in Berlin?* as compared with the Englishman's *Have you been in Berlin?* To the Englishman with his different language habits it matters, but only because there is a suggestion of interference with his speech patterns. Nor does it make any difference to him unless he shifts from actual speech to grammatical lore. But this is wholly a matter of translating symbols. Only to a student of conventional grammar does the problem of equivalent expressions arise. The Englishman as a speaker of German or a performer of German speech-patterns merely adopts the ways of a German in this respect—as he must, for example in the case of pronunciation and idioms

—in order to speak effectively and correctly, that is, like a German. It is only in this sense that the Englishman is bothered by the Frenchman who uses no aorist or past definite in favor of the perfects, while the grammar book supplies an equal quantity of each.

TENSE, *AKTIONSART*, AND ASPECT

The psychologist can easily see why *Aktionsart* and Aspect as verb phenomena offer great difficulties to the grammarian. Unless one hews to the line of behavior one cannot readily determine the nature of each and their relationship or the connection between one or both and tense.

In consonance with the symbolizing tradition the grammarian attempts primarily to locate in word-forms specific symbols for time-points or elements. When a verb-form is present he looks for a time-point or when he regards a time-point as located he searches for a corresponding word form.

It was inevitable, however, that grammarians should notice that the so-called temporal aspect of verbs does not exhaust their symbolic nature. For the speaker is just as likely to refer to the character of an event—its initiation, iteration, continuity, discontinuity, conclusion, or non-conclusion, etc. Thus arose the concept of what Brugmann (KVG 493) called *Aktionsart*. The existence of the compound tenses forces to the front the consideration of at least time changes, if not qualitative differences, in the way events occur. Again, students of the Slavic languages were impressed with the prominence of what has been called Aspect in these languages.

But what did these terms *Aktionsart* and Aspect refer to? Somehow they did not fit in with the preconceived notion of the nature of verbs. Noreen (WBS 415) accordingly expresses a laudatory appreciation of Agrell, who in his work on the Polish verb⁴ makes a sharp distinction between the two. *Aktionsart*, Agrell defined, as the manner in which an action is carried out, while Aspect indicates that the action is completed or, as Noreen prefers, incompleted. This appreciation appears well merited, for as Noreen points out, G. Curtius equated *Aktionsart* with *Zeitart* as against *Zeitstufe* or the ordinary tense. Heyse again regards *Aktionsart* as objective time, while De la Grasserie opposes *Aktionsart* = objective time to ordinary tense as subjective time.

⁴ S. Agrell, *Aspektänderung und Aktionsartbildung beim polnischen Zeitworte*, 1908.

When we free ourselves from the trammels of the symbolic tradition we may regard both *Aktionsart* and Aspect as names for conventionalized utterances which refer to various aspects of actually occurring phenomena. The circumstances of the speaker, both personal and cultural, naturally play a part in the development and later occurrence of these conventionalized patterns of speech. In this way a speaker contributes to the speech style and emphasis that characterize the language of his community.

THE PSYCHOLOGY OF TENSE

At long last, then, we come to a formulation of tense from a psychological standpoint. Tense is a set of responses to temporal conditions. But what are temporal conditions? The inevitable answer is that they are the circumstances in which referred-to-things are related in time. Time from a psychological standpoint is, of course, the actual time dimensions of events which are happening, have happened, or will happen. In no sense does the speaker have anything to do with fixed temporal points or abstractionistic time matrices. The speaker need not know that there is a logical arrangement of time sequences nor need he have any sophistication with respect to time at all. Indeed, he may never have heard of the tense constructions of the grammarian.

For every speaker the world is full of all sorts of things and events, which are related and interrelated in various ways. The individual tells what happened, in what order or relation with reference to the person spoken to and the immediate circumstances. If he has been taught to make use of standard expressions he may do so; if not, not.

Since for the psychologist all speech constitutes bistimulatory adjustments and not symbols that stand for ideas or things, he describes tense in terms of the speaker and his conditions, the hearer (or auxiliary stimulus) and his part in the speech-adjustment situation, as well as the interrelation of both these factors with the adjustmental stimuli.

Two definite results follow. In the first place, to describe what the speaker does in his referential adjustment is to observe whether he refers to what he, something, or someone else is doing, has done, or will do, or the the order of happenings which are occurring, have occurred, or are expected to occur. Here we must draw a sharp contrast between the actual speech behavior

of an individual and the systematic abstractions of the conventional grammarian. For example, one might confuse the description we have just suggested with Sweet's differentiation of primary and secondary tense (NEG 99). By primary tense Sweet means, of course, the threefold division of abstract time—past, present, and future, as reckoned from the present time of the speaker. Secondary tense is measured not from the present time of the speaker, *when* he is speaking, but from some past or future time *of which* he is speaking. Sweet is obviously dealing with a fixed time matrix and not at all with actual referential behavior.

Secondly, when actual referential behavior is considered there are many kinds of detailed time-references. Thus the speaker can refer to a large succession of happenings. He says he will do *a* first, then *b*, then *c*, then *d*, etc. Each is a genuine feature of the adjustment stimulus, despite the lack of coincidence between such temporally located events and the staticized points of abstract time. We want to specify the tense character of an utterance when the speaker says *I expect to pay you soon, I intended to go before this, or He desired to have me leave.* No matter what he says from the standpoint of conventional words or gestures, if he refers to some temporal aspect of an adjustment stimulus, we may and sometimes must describe his behavior as tense. It follows necessarily that the psychological description of tense adheres closely to the observation of actual usage rather than to prescriptive formulations, whether based upon traditional beliefs or the dictates of some formal logic.

An example of the psychologist's position may be found in the conflict between those who declare there is no pure or real future tense in English and those who find English exceedingly prolific in future tense-utterances. Among the latter students of language we cite Fries,⁵ who indicates that not only does English not lack a future, but that the use of the auxiliaries *shall* and *will* with the infinitive does not exhaust the English future tense. He adds other combinations as follows:

- (a) the verb *to be* + prepositional infinitive. (He *is to go* with the committee.)
- (b) the verb *to be-about* + prepositional infinitive. (The man *is about to dive* from the bridge.)
- (c) the verb *to be* + *going* + prepositional infinitive. (They *are going to go* by automobile.)

⁵ The Expression of the Future, *Language*, 1927, 3, 87-95.

Fries adds also that:

The *present* form of the verb frequently refers to future time, both in subordinate clauses and in independent sentences when some other word than the verb, or the context in general, indicates the time idea. (If it rains, I cannot go.) (He returns from his trip tomorrow.)

Even further Fries goes and declares that the use of *shall* and *will* is no more entitled to be called future time than many other combinations of verbs, such as:

I desire to go	I mean to go
I want to go	I have to go
I need to go	I may go
I intend to go	I can go
I expect to go	I must go
I ought to go	I might go
I've got to go	I should go

The psychologist would add that we should pass beyond conventional word-utterances to a large variety of referential action. Since linguistic adjustments include gestures of all sorts, the number of ways to refer to the future or to any other time aspect of an event can be very large indeed. We suggest again that it is illuminating to consider answering reactions (pp. 34, 59, 123, *et passim*) which because of the speaker and situation-context or circumstances require no elaborate formal action.

CHAPTER XVIII

NUMBER

THE EXPRESSIVE MOTIVE IN GRAMMATICAL NUMBER

THE logical motive operating in the conventional grammar of case and tense gives way in grammatical number to the expressive motive. Even though the manifest symbols are lacking, the grammarian assumes that the speaker is expressing number ideas. Two considerations provide proof. First, number is imposed upon all speech, although there may be only a few symbolic features (singular and plural word forms) present. Secondly, actual number words are called adjectives, a fact which at least implies that number requires nothing more than secondary symbolization. Such an emphasis of the expression phenomenon, it may be said, does not really minimize the influence of symbolization, since we have already pointed out (Chap. V) that both are equally fundamental conceptions in grammar. The question is merely which of the two is more conspicuous in description.

THE MAGIC OF NUMBER

Always and everywhere the magical spell of number has been woven into the fabric of man's thought. This is no less true of linguistic than of other studies. Surely, speaking is not counting. And yet one might gather from reading the grammar books that every act of speech is a process of enumerating things.

Even though all speech is considered numerical, the grammarian endows enumerators (speakers) with only a few numbers. At most, grammarians think in terms of four numbers: singular (1), dual (2), trial (3), and plural (many). Even the conventional dual and trial are rare, while, even if we allow the singular to be the expression for *one*, the plural is certainly not symbolic of any particular number. Furthermore, the grammarian declares that the speaker expresses number concepts when the entire speech situation is devoid of number. We are prompted to ask: Are grammarians dealing with real number at all?

SEMANTIC AND REAL NUMBER

It is possible that grammatical numbers are only the ghosts of numbers—formal abstractions developed under the influence of the expressive theory. Certainly it is not a far-fetched idea that grammarians are really dealing with those historically recurring abstractions known as *the one* (singular) and *the many* (plural). The infrequent occurrence of the dual and trial forms suggests at once that they are definitely stylistic speech patterns.

Why should we call *man* in *The man has come* a singular? Does the speaker actually tell us or mean to tell us that one man and one man only has come? Hardly, for if, as in many cases, the question of *how many* does not play any part in the situation, there is no sense of injecting quantity, while in the contrary case the actual numbers [*five* (any number) *men have come*] are referred to. Why should the speaker refer to a number of phenomena unless number or measure is something to which he is actually adjusting himself?

WORDS, WORDS, WORDS

Conventional misconceptions of number go back to the grammarian's preoccupation with words. Dealing with words instead of adjustments, the abstractionistic (symbolic), expressive (externalization of mental states), and magical (treatment of the non-existent) motives all come to the surface.

Now if words are presumed to represent things, it seems to follow for the grammarian that words as expressing ideas of things must also express their numerical aspects. A striking corroboration of this view is afforded us by Jespersen's criticism of Noreen (PG 201). "The whole notion of number, though so important in everyday life, in Noreen's system is put away, as it were, in a corner of a lumber room."

Far from being a justified criticism, it serves to show us the significance of the number concept in grammar. Noreen quite rightly sees that it is unnecessary to stress the expression or the symbolization of number, although since he himself is concerned with words and their logical (*sic*) implication, he prefers a different statement of what words express and symbolize. As we see, upon examining his treatment of words, he does not depart from general grammatical techniques.

Noreen (WBS 386 ff.) chooses to analyze words according to the divisibility or invisibility of the things they represent. Ac-

cordingly he classifies his concrete words or glosses into the following scheme:

- I Impartitiva (words standing for things which cannot be mechanically divided into similar parts)
 - Aa. Individua—I, *Adolf Noreen, Stockholm, etc.*
 - Bb. Dividua— *Priest, man, tree, stool, etc.*
- II Partitiva (words standing for things which can be mechanically divided into more or less similar parts)
 - A. Materialia—boards, clothing, gold, vegetables
 - B. Collectiva—
 - (1) Totalitätscollectiva (words that stress the whole rather than all, large rather than many) the whole *neighborhood, the nobility, the army, etc.*
 - (2) Pluralitätscollectiva (words that stress the parts, all and each, few and many)
 - (a) Homogeneous (most plural forms) *horses*
 - (b) Heterogeneous (each unit of the whole carries an additional name). While the collective *we* includes each one of *us*, each has a separate name, *Meyer, Huber, etc.*
 - a. Exact cardinal number, *two, a pair, both, three, a dozen, etc.*
 - β. Vague cardinal numbers, *a pair, some, several, all, many, etc.*

Such a scheme contrasts most effectively with the formalized word-study of conventional grammar and the investigation of word adjustments to things as the actual occurrences of speech. For the formal type of study the number aspect is only one of several kinds of abstractions that may be treated. Words as symbols for things may well be regarded as containing number as well as divisibility, homogeneity, etc. In consequence, Jespersen, as against Noreen, is not wrong in attaching number concepts to words, but mistaken in denying that a word analyst may endow his words with any particular kind of abstraction. Our interest, here, however is to make use of this battle over abstractions to reveal the great abyss that separates all abstractions from concrete speech adjustments.

Whether in the study of number the grammarian should occupy himself with words or adjustments is a question to be decided by the results obtained. Certainly the problem of number is loaded with numerous difficulties, some of which are well illustrated by those situations in which we have number categories without number and number without number categories.

NUMBER CATEGORIES WITHOUT NUMBER

One and Many—The grammarian declares that the singular and plural are syntactic distinctions corresponding to number. But what number system has only two numbers? Or four? A curious answer is found in Jespersen's statement (PG 188) that from a logical point of view the obvious distinction between numbers is between one and more than one. The latter must accordingly be subdivided into two, three, four, etc. There is hardly any use in criticizing this view, for obviously the grammarian is using the term number in a way which can satisfy only his grammatical interests. There is no conclusion possible except that the grammatical singular and plural have no necessary connection even with mathematical number, although mathematical number undoubtedly is what the grammarian is thinking about.

The Plural of Approximation—There are grammatical expressions which are taken to imply multiples of numerical units, but which actually do not do so. Jespersen quotes such expressions as *a man in the sixties*, *the sixties of the last century*. He points out that there is here no real plural of sixty—that is, one sixty plus one sixty, but a summing of the fractions of sixty, sixty plus sixty-one, plus sixty-two, etc. And yet the word *sixties* is clearly a plural form. Now the speaker is manifestly not referring to one or more than one—in other words, no number at all.

Jespersen declares that the most important instance of the plural of approximation is *we*, though it follows that according to the grammarian's definition of person *we* is only thinkable in the singular. Still the grammarian must call *we* plural. Here again is a number category without number. In this case actually the number of persons referred to may be one, two, three, four, etc. In each instance of course what number the speaker is referring to depends upon the concrete circumstances surrounding the speech behavior.

Common Number—The grammarian deplors the absence of a common number form, a form which Jespersen defines as one disregarding the distinction between the singular and the plural. This lack unmistakably demonstrates once more the gap between number and grammatical categories. Although Jespersen declares that the *who* in *Who came?* and *Who can tell?* is a common number, he insists it would have been better if in the English

Who has come? and *Nobody prevents you, do they?* the singular could have been avoided in the first and the plural in the second utterance.

The grammarian himself admits that in the last two sentences there are number forms without number. But supposing that there were a common number form, what number would it represent? In the second sentence would the number be zero? Surely this common number would conflict with the mathematical number. As to the sentence *Who has come?* in what sense is it true that the verb *has* has a number (singular)? We have asked a similar question before without any satisfactory answer. This is merely another instance of the expression motif—namely, the grammarian assumes that the existence of a conventional form indicates that an idea existing in the mind of the speaker is expressed.

The lack of a common number form, Jespersen says, is substituted for by such clumsy devices as *a star or two, one or more stars, some word or words missing here, The property was left to her child or children*. Clearly there is no need for a number expression from the standpoint of what the speaker is referring to. It is perhaps safe to say that these utterances indicate that the speaker is ignorant of how many things, stars, words, children are involved, and therefore his speech should call for an absence of number reference. Actually the clumsy device consists of all the ordinary number forms in the English language—namely, singular and plural. Is there not evidence here that the grammarian wants to make speech conform to his preconceived notion of logic?

Mass Words—Perhaps the most paradoxical of all the grammarian's various treatments of number is found in the conception of mass words or uncountables. Mass words consist of two sorts of nouns. The material mass words denote substance independent of form, such as *silver, water, butter, gas, air*, etc. Immaterial mass words denote such things as *leisure, music, traffic, success*, etc. Why make such a division, which has no other significance than that it palpably proclaims the grammarian's preoccupation with symbolizing-words rather than with actions? From the standpoint of behavior the locus of the adjustment stimulus function makes no material difference in the general description of the speech event. That difference can only emerge in the consideration of what specific adjustment

the person is making at the time, whether he refers to such a thing or some other.

But let us overlook the dislocation of linguistic facts implied in the division and turn to the statement that mass words are quantified by such additional words as *much*, *little*, and *less*. The basis of the paradox is that in the case of what the grammarian calls mass words the speaker is presumed to refer to substances, events, objects, without any kind of numerical embroidery. But because of the patterning of the language a singular or plural form is employed. Where is the basis for saying that the substances represented are uncountable? Here we have another instance of number categories without number. The matter is very simple, however, for the speaker actually can refer to things without being concerned with quantity or measure. We wish to call attention to the fact, however, that number is no less involved here than in the case we gave at the opening of the chapter, when we asked whether the speaker who says *The man is here* is referring to number.

An interesting feature of the grammarian's discussion of mass words is the setting up of a table in which the same word does duty both as a mass and thing word. We reproduce such a table from Jespersen (PG 199):

a little more <i>cheese</i>	two big <i>cheeses</i>
it is hard as <i>iron</i>	a hot <i>iron</i> (flat-iron)
<i>cork</i> is lighter than water	I want three <i>corks</i> for these bottles
some <i>earth</i> stuck to his shoes	the <i>earth</i> is round
a parcel in brown <i>paper</i>	<i>state-papers</i>
little <i>talent</i>	few <i>talents</i>
much <i>experience</i>	many <i>experiences</i> , etc.

Why should the number concept be stressed when the situation clearly calls for a description in terms of speech adjustments?

NUMBER WITHOUT NUMBER WORDS

That grammarians employ the concept and term, number category, instead of number is perhaps evidence that they themselves realize the lack of a relationship between number phenomena and number words. This would seem to relieve grammarians of the criticisms leveled against them, since they stress a logical viewpoint. But they cannot escape the conviction that after all they are supposed to be describing speech. That they are not concerned with actual speech, however, appears from the fact that speakers refer to number without number words.

The Ordinary Plural—There are innumerable instances in which individuals refer to many different numbers of things, but use only the indiscriminate plural category. In the situation in which the speaker says *Some (many) of the delegates spoke, while others were silent* there undoubtedly are numbers of people which might be enumerated; yet no number word is used. It must be admitted of course that the speaker may be unable to count or enumerate the speakers or non-speakers, or does not care to do so, but the fact remains that it is impossible to force into the situation the conception of words standing for numbers. Here is justification for the general objection to the symbolic view of speech.

Collectives—The use of such expressions as *set, pack, bunch, herd, gang, flock, bevy, lot, etc.*, again illustrates the divergence between number and number categories. But this distinction cannot be demonstrated unless one deliberately moves away from words and their so-called semantic analysis toward actual linguistic adaptations. We must confine ourselves to the situation in which the individual is actually referring to numbers of things without specifying any number. For example, A says *You mean that someone actually came*, and B replies *There were a lot of people there*. Perhaps the fact that collective utterances are employed in both ways accounts for the division of English collective language patterns into two kinds—those with singular and plural constructions. In the former case the collective expression refers to a unit which is regarded as a composite, while in the latter the components are looked upon as units, though there is no specification of how many.

NUMBER CATEGORIES AND NUMBER REFERENCES

Nothing is so definite as quantity. Furthermore, there is not the slightest evidence that people exist who cannot enumerate things or refer to the results of such enumeration. Accordingly, it is easy to accept the proposition that whoever wishes to perform a number reference adjustment can do so. So far as the speakers of complex groups are concerned, each individual is familiar with all of the speech utterances that he may ever find necessary. There need therefore be no hesitation in drawing a sharp distinction between the employment of number categories and actual numbers. Nothing is farther apart than the performance of classification actions and actual number references.

GRAMMATICAL NUMBER AS SPEECH PATTERNS

We arrive at the conclusion that the conventional syntactic categories—singular and plural—are speech patterns determined by the cultural institutions surrounding particular speakers.

The Dual—The existence of an authentic dual or trial in a language, in addition to the singular and plural, is certain evidence of the speech-pattern character of grammatical number.¹ We may be reminded that the existence of a dual in current Bavarian dialect, Greenlandic, and other languages (English, *pair, couple*) testifies to the development of different linguistic institutions among different groups of speakers.

Institutional Changes—The numerous changes in speech style recorded in the grammatical histories of various languages similarly testify to the stylistic patterning of number forms. Such changes are prominently exhibited in the various transformations from three or higher to lower number systems, as in the partial or complete disappearance of the dual, trial, etc., in many languages. Vedic, Classical Sanskrit, Old Persian, Zend, Old Slavonic, and Greek once had a dual.

Chinese—In the Chinese linguistic pattern no place is left for number, unless the speaker definitely makes a number reference. Surely we have here nothing more than a variation in speech style, variation which can mean only one thing—namely, that grammatical number is a matter of linguistic convention.

Special Usages—Hungarian speakers use the form whole and half where others use singular and plural. Thus the Englishman says *My eyes are weak* and *His hands tremble*, while the Hungarian says *a szemem (sg) gyenge* and *reszket a keze (sg)*. For one of the members Hungarian has fél = half. *Fél szemmel = with one eye-with half eye(s)*, *fél lábára sánta, lame of one foot*. Similar evidences of the conventionality of grammatical number are found in the use of the singular for the plural in the case of English fractions—for example, *one and a half miles*. Again, where English has *the scissors*, German has *eine Schere*.

One might collect a large number of instances of language usage demonstrating the sheer conventional patterning of grammatical number. Thus Jespersen, from whom we borrow most

¹ For a summary of the distribution of the dual and trial and higher number forms, see Schmidt, *Sprachfamilien und Sprachenkreise der Erde*, (Heidelberg), Winter, 1926.

of our examples, indicates differences of usage when grammatical number is indicated in so-called secondary words. In Hungarian are found expressions corresponding to English *three house*. Jespersen quite rightly contradicts the Hungarian Simonyi who calls this illogical. This type of usage, which is very widespread, undermines the idea of actual number, since the latter really ought to apply only to nouns or so-called primary words. Illustrations from German are *zwei Fuss*, *drei Mark*, *400 Mann*, and from English *five dozen*, *three score*, *five stone*.

Wundt (S 2, 39) quotes the fact from Böthlingk² that the Yakuts do not employ a plural suffix unless the things referred to are clearly differentiated in place or other circumstance. Thus they refer to the various pieces of clothing of one person with a conventional singular reference, but use the plural when the clothing belongs to two or more individuals. In Russian *est* = *it exists* is always used in the singular, even when the subject stands in the plural.³ Such linguistic patterns are in principle similar to the variations in the English plurals *sheep*, *fish*, *oxen*, etc.

NUMBER UTTERANCES WITH NUMBER

No speaker can escape the necessity of adjusting himself to number situations. This is as true of so-called primitive speakers as of the most highly cultured. Accordingly it is not difficult to collect instances of actual references to number. As in all cases these references may be performed as individualistic responses or in a completely conventional manner.

As we have indicated, every speaker in complex society has available the whole number system with which to make known his quantitative wants or to refer to the magnitudes of collections for measures. Primitive speakers may be very much limited in this direction because of the more restricted circumstances of their lives, but the essential principle is the same.

Another class of number reactions may be located in the collectives, such as *decade*, *fortnight*, *twelvemonth*, etc. Although these utterances may be regarded as secondary from the standpoint of the strictly mathematical number system, they constitute real numbers when the individual is actually referring to an enumerative series or a magnitude. When the speaker

² O. Böthlingk, *Die Sprache der Jakuten*, 244.

³ A. S. Rappoport, *Russian Grammar*, 200.

says *I will meet you a year from today*, the utterance is a distinctly numerical one, but we must reiterate that it is not because the words *a* or *year* contain or express the meaning of *one*, but rather because the individual is adjusting himself to a situation which involves an actual number stimulus. As in every other instance of speech, the primary question is always what the speaker is doing with respect to the double stimulatory situation in which he is involved.

Further to elucidate the distinction between true number references and conventional semantic number we turn back to the utterance *we*. Recall that *we* troubles the grammarian because it is grammatically plural, and yet, since it semantically carries the meaning of speaker, it can only be singular. So far as the psychologist is concerned the whole problem reduces itself to the inference of the adjustment stimulus function. What is the speaker adjusting himself to? If he is referring to himself, as in the royal pronouncement, the number involved is one, but if he is referring to himself and others, there is a multiple number reference. Furthermore, the psychological description of what is going on is incomplete unless we add that the utterance may be completely without number.

THE PSYCHOLOGY OF NUMBER

In order to summarize the psychologist's treatment of the number problem, we must remind ourselves that a psychological phenomenon is always a concrete interaction—the performance of a response configuration as a mutual activity with the operation of a stimulus function. Now when the event is an authentic linguistic number-phenomenon, one of the two simultaneously operating stimulus functions must be localized in actual number phenomena. It makes no difference, of course, whether from any other than a psychological standpoint there is or is not a numerical difference in the objects with which the individual is in interaction. When the person sees double—that is, interacts with two things, he localizes through his behavior a twice-one number function in an object conventionally taken as only one. We have here different numbers from two different standpoints.

Number reactions therefore are analyzed out of a general number situation—that is, a psychological interaction—and not deducted from either logical or mathematical conceptions nor

from the facts of word usage. Whatever number is found in a psychological situation must be the result of what the person actually does or is observed to be doing. Moreover, the interacting individual may be disinterested in speaking of the number phenomena he is observing. When the speaker says *Time is pressing*, we must not say he is speaking in the singular—speaking of one time—unless he is actually doing so. There are four possibilities: (1) No number may be involved, as when he is merely referring to the fact that he is too busy to do something. (2) He may be referring to a certain (one) period that is pressing. (3) The utterance may be a definite many-number reference, as when he speaks of numerous occasions that call for haste. Undoubtedly there are speech situations in which both the speaker and the spoken to are vividly aware of and are interacting with the actual number of these occasions. (4) And finally, the speaker may be interacting with an actual number stimulus, but the number is indeterminate. *All the family are going* is the answer to the question *Will we have enough room for everybody?*

The psychologist suggests, therefore, that whatever meaning we ascribe to an utterance—whether it comprises what is conventionally called a number-word (one, two, three), or grammatical number categories (singular, dual, plural), or quantitative responses (*all, some, any, pinch of salt, handful, whole, part*)—must be determined upon the basis of the actual interaction in which the person is involved. By this method we can actually conclude whether he is referring to any number, no number, or any fractional part of a number. By no means should we be influenced by the speech part of a word. It is undeniable that the general effect of word-conception has inclined grammarians to connect number primarily with nouns and pronouns. When we turn away from words to adjustments, this grammatical fallacy is automatically eliminated.

CHAPTER XIX

VOICE

ACTIVE AND PASSIVE

VOICE phenomena so well illustrate the psychological character of speech that it is not surprising to find the grammarian skirting closely the boundaries of psychological description. When the grammarian calls the utterances *Paul beats Peter* and *Peter is beaten by Paul* active and passive voice respectively, he might well be describing the speaker's activities as concrete adjustments to unique situations.

Psychologically considered, the active utterance reflects the speaker's interest in (1) Paul and his action, (2) Paul as specifically the aggressor, or (3) the mere fact that someone (Paul) is beating someone else (Peter). In speaking passively the speaker may be interested or act as though the hearer were interested in (1) what is happening to Peter, (2) Peter as the aggrieved, or (3) the mere fact that someone is being beaten.

There is still a third possibility. The speaker may be disinterested in the contact of Paul and Peter beyond referring to it, in which case neither the active nor passive description applies. But since all sorts of divergences may exist between the linguistic adjustment and its conventional manner, the speaker who is quite indifferent to the specific features of the event may still adapt himself by either of the above utterances. Similarly, the speaker referring to the active situation may use the passive form and vice versa.

The grammarian, of course, does not describe speech as psychological adjustments, but rather as words which express ideas. Though he sometimes acknowledges adjustmental conditions in his descriptions, he does not go far with the psychologist. Instead of regarding speech as adjustments to referents by means of partly conventional and partly individualistic response patterns, the grammarian invariably thinks of the utterances *Peter beats Paul* and *Paul is beaten by Peter* as different sets of words to express the same idea. He is fortified in this view by the fact that "the passive Latin *nascitur* has given way to the active

French *naît* in the same sense," and so "there is thus nothing in the ideas themselves to stamp verbs as active or passive" (PG 165).

As a consequence, the grammarian minimizes the importance of voice in speech description. He is forced to such extreme statements as:

The category of voice is ill defined (VL 102). The distinction between the active and passive verb in most Indo-European languages is illusory (VL 103). The distinction between the active and passive categories rests on a very slight basis (VL 105).

It must be acknowledged, of course, that since conventional grammar follows formal logic, there is hardly room in it for passive propositions. We must admit that so far as the sheer classification of sentences is concerned, the propositions *Jack loves Jill* and *Jill is loved by Jack* are in all respects equivalent. But may we overlook the fact that speech is not sets of words or sentences, but in each case concrete adjustments?

We must add, too, that once the grammarian has turned away from linguistic adjustments, there is no contradiction in his attitude. Although the inevitable logic of fact forces him to recognize active and passive phenomena, his linguistic attitudes and technique make plausible the statement that there is really no fixed and formal voice category. And yet because voice phenomena undoubtedly exist, we cannot allow the conventional view of grammar to impede their investigation, especially since to do so means to let slip a valuable opportunity for a better understanding of language in general.

WHY THE GRAMMARIAN MINIMIZES VOICE

Granted that a solution of the voice problem may be important for the appreciation of the general nature of speech, we inquire into some of the possible reasons why the grammarian discounts voice as a speech phenomenon.

No Definite Subject or Object—Since the grammarian works with propositions (sentences) which are polarized into subject and object constituents, he is quite upset by the passive. In such an utterance as *John was struck by the hammer* shall he take *John* or *hammer* as the subject or object? There is no clear indication in the utterance.

Interference with Subject and Object Relation—Grammarians define subject and object as the words denoting the person

or thing acting and acted upon respectively. Now in a passive utterance the subject apparently is acted upon; consequently the standard definition of subject and object breaks down. The grammarian, however, is not deterred by this, and upon the basis of such a sentence as *John was punished*, he sets up a new definition to the effect that the subject is acted upon. This leads to such an assertion as that of Jespersen (PG 160) :

The relation between subject and object cannot be determined once and for all by pure logic or by definition, but must in each case be determined according to the special nature of the verb employed.

But then there is another sentence construction: *John fears the bear*. An active proposition, but clearly the subject is acted upon. Adequate motive indeed for condemning the subject-object interpretation of speech (Chap. X); and yet the grammarian actually chooses to depreciate an important language situation instead of turning toward an adjustmental description of speech. All the more poignant is his failure to change his attitude when he resorts to such extremes as Madvig's dictum that the object is, as it were, a hidden subject. A similarly significant view is expressed by Schuchardt: "Kurz, jedes Object ist ein in den Schatten gerücktes Subjekt" (SB 299). Undoubtedly the basis for such views is the confusion of words with the thing or event spoken of (the adjustment stimulus).

Reversal of Subject and Object—Are the so-called reciprocal sentences a basis for rejecting voice phenomena? It is admitted that subject-object reversal is a thorn in the side of those who deal with propositions, since there is naturally no way of formally fixing the kind of event referred to on the basis of the words used. When we deal with word symbols, there is an equivalence between the trinities, *Mary resembles Ann* and *Ann resembles Mary*. The remedy is of course to get away from words and propositions and to study linguistic adjustments. Technically, we must discover which object contains the adjustment-stimulus function for the utterance. From an objective psychological standpoint, it may be very important that John marries Mary, in view of the actual protagonists involved, although the priority given the male may be merely a reflection of social convention. On the other hand, it may be quite likely that the specifications, *John married Mary* and *Mary married John*, constitute distinctly opposite adjustments to opposite types of facts.

Absence of Object—The basis for the ordinary grammatical definition of the passive is undoubtedly the reversal of the subject-object relation. This transformation is regarded as partially ideational or meaningful and partially as the effect of a change in the verb.

But what if the utterance contains no object, as in *The book sells well* or *The house stands firm*? The active-passive certainly runs aground here for the conventional grammarian; yet it is clear in the former utterance that we have a definite passive despite the active verb, while in the latter there is neither active nor passive because the active verb has lost its grammatical function and conventional meaning.

Two Objects—How is one to reverse the subject-object relation when there are two objects, as in *He gave his daughter a watch*? In English the difficulty is more serious than in other languages since, curiously enough, it is the so-called indirect object that would be involved in the reversal. Such is the power of propositions in confusing voice studies!

No Subject—Probably the most serious difficulty with the voice category is found in utterances without subjects—for example, the reflexives *mich friert*, *mich hungert*, and the impersonals *es wird getanzt*. While all three utterances are grammatically acceptable as passive, the first two certainly are not passive because of the transformation of object into subject, and there is a question whether *es wird getanzt* is in any way the alternative to *sie tanzen*. Undoubtedly the grammarian here leaves his domain of formal words to turn to actual happenings for his meanings.

Middle Voice—The grammarian is morally supported in slighting voice phenomena by his correct observation that the middle voice, as found for instance in Greek, really has no descriptive function. Sometimes it is reflective and sometimes clearly active. In short, the middle voice constitutes only conventional modes of utterances, which one recognizes definitely as such because linguistic phenomena allow room only for active and passive description. It is only when we overlook the fact that active and passive references themselves are conventional, so far as the patterning of behavior is concerned, that we search for definite word forms with unequivocal meaning expression.

VOICE AND SPEECH PARTS

We may conclude perhaps that the grammar of voice, more than most topics, is obstructed by the linguist's flirtation with formal propositions. But this is only one source of his difficulties. He is just as much troubled by tying himself up with word-forms in the shape of speech parts as when he attempts to make voice hinge upon the turn of the verb.

Observe the procedure. The utterance *He sells the book* is active because of the form of the verb, but the same verb in *The book sells well* gives an altogether different result. There is obviously a contradiction here between the views (1) that verbs do not really emphasize active and passive, and (2) that voice is based upon the turn of the verb. The only way out is to turn to actual events, which the grammarian does when he accounts for the passivity of the second utterance on the ground of its meaning. He does not, however, resort to actual adjustments until compelled to do so, though he is always willing to go beyond single words.

The verb is not the only speech part connected with voice, since the grammarian believes voice to be expressed by an adjective or a substantive. Once more we take our illustration from Jespersen (PG 169), who gives a list of adjectives with various active endings (*-some, -ive, -ous*)—*troublesome, talkative, laborious*—while asserting that adjectives in *-ble* are generally passive—*respectable, credible*—but sometimes active—*perishable, serviceable*. From words that mean active or passive he falls down to endings like *-less*, but finds that they are active (*sleepless*) or passive (*tireless*). From the ending he must go at once to words, but can he stop even here, for we have seen that words in *-ble* are either active or passive? Naturally we can find correlated words for active and passive—*contemptuous, contemptible, desirous, desirable*—though the same word may be now one and now the other—*suspicious, furious*.

Are meaningful words speech phenomena, unless indeed they are abstracted from referential situations? Do they not derive their meaning from the fact that they are adaptations in specific circumstances? Witness the grammarian's admission that active and passive apply to "some adjectives derived from or connected with verbs" (PG 168).

Let us go on to substantives, which are regarded as active and passive under two conditions. First, when so-called agent-

nouns are in question—*liar, conqueror*, etc. The word is really made the point of departure for an interaction of a person and some thing. Secondly, it is asserted that agent-nouns (*pick-pocket, break-water*) really contain active verbs with their objects. Jespersen (*ibid*) says a pick-pocket may be defined as a picker of pockets.

In discussing the activity and passivity of substantives connected with the genitive and possessive (nexus substantives), Jespersen clearly moves out from words toward behavior situations. Of the five rules he gives for the use of the genitive (and of possessive pronouns) (PG 170) we need cite only a few. Substantives formed from intransitive verbs can only be active—*the doctor's arrival*. If there is voice at all, is it not because we are thinking of a complex situation? Again, the rule that substantives, from such transitive verbs as cannot because of their meaning have a person as object, are taken in the active sense—*his suggestion, decision, supposition*—derives its force from an implied analysis of a situation.

It is not necessary to argue that the mere presence of more than one word in the example points in the direction of adjustments, but we want to point out that when Jespersen asserts in his fourth rule that the genitive or possessive will be understood when more interest is taken in the person who is the object of an action than in an agent (De Valera's arrest), he not only takes account of a situation, but of the attitude of the hearer and speaker also. It is not unfair perhaps to say that in his voice studies the grammarian moves toward the position that words are factors in referential adjustments to events. That a grammarian can pin the voice idea to various kinds of words merely reflects the fact that any kind of reference can be carried out by a variety of speech performances, even the gestural.

PSYCHOLOGICAL BACKGROUND OF VOICE PHENOMENA

Our discussion has made sufficiently clear that voice phenomena require psychological treatment. We plan therefore to connect the active and passive with the component factors of a psychological event, as analyzed in Chapters VI and X. Before proceeding, however, note that voice can hardly be treated in isolation from other speech phenomena—a fact which has not escaped the attention of grammarians¹ and which exists, of

¹ Cf. Velten, H. V., Sur l'Evolution du Genre, des Cas et des Parties du Discourse, *Bull. de la Société de Linguistique de Paris*, 1932, 33, 205-223.

course, because all grammatical phenomena are analyzed out of psychological events.

A. GROSS ANALYSIS OF ADJUSTMENT STIMULUS

First we want to call attention to the necessity of keeping the speaker's adjustment stimulus in the forefront. To understand a reference we must know the character of the stimulus object, since the referent sets the pace for the speech reaction, while the character of the reference is ordinarily less conditioned by the identity of the speaker and auxiliary stimulus.

Event Stimulus—When the adjustment stimulus consists of an event, its interrelated factors can be defined as subject and object. There seems to be no objection to correlating subject and object with the actor's behavior and acted upon respectively. The linguist simply describes how the speaker refers to each.

That subject and object are never to be confused with subject and predicate we have already seen in our study of syntax (Chap. X). There we saw how the subject-predicate description fades out of the speech picture, since subject and predicate can be nothing but analyses of propositions and have no place in the description of an event.

Active and Passive—Granting the subject-object polarity, we can see in a different light what we have already observed about active and passive speech—namely, that in the former the speaker is stressing the subject who is doing something to some object. The passive reference, on the other hand, reflects an interest in the person or object acted upon. The terms subject and object here are neutral with respect to whether the actors and those acted upon are persons, animals, or natural elements and forces.

Moreover, we have criteria for studying any utterance. It makes no difference what phonetic or morphologic constructions the utterances constitute, or, as in the example *He is to be depended on*, that no action has yet occurred. What matters is how the speaker is adjusting himself in each case. When he says *John was laughed at* it is a passive reference, since John was acted upon by someone. But the same event may have to be described as an activity that someone has performed on John, and then the utterance is active. Again, when we say *He is to be depended on*, we may be saying that trust may be placed in him and hence be uttering active speech. It is essential to notice that when psychological actions are referred to, requests, de-

mands, expectations, and hopes are as definite performances as gross manipulations.

How does one know what references the speaker makes? This is sometimes indeed a difficult question, but usually only when we deal with imaginary utterances or sets of words. For actual speech situations the question suggests a statistical problem. How often does one fail to understand a speaker? Very seldom. But when this does happen there are definite conditions operating comparable to those influencing illusions in perception.

Object Stimulus—When the adjustment stimulus is an object instead of an event, we do not expect any voice utterance at all. Here the references are frequently predicative, as in describing or evaluating the object—for example, *The garden is beautiful*, or *The man is strong*. But no one will fail to see the difference between psychological and grammatical predication. In the former, the speaker is pointing out some characteristic of the adjustment stimulus object, while in the latter the meanings of terms in propositions are dissected out.

Non-voice responses to objects may also be of the sort in which the speaker refers to the location of a thing: *It is here*. Those who are accustomed to think in terms of word-meanings may object to using the utterance *He took it* as an example of a non-voice adjustment. When we reflect that the ultimate criterion is the adaptation of the speaker and that he is merely stating the location of the object in question, a large measure of doubt is dissipated.

We forego the discussion of the proposition that all phenomena are events. It is an acceptable notion that everything consists of a complex of interrelated activities, though it is of slight import in linguistic studies, since we are interested only in the specific interaction of speakers and their stimuli and not in the general nature of things.

Speaker's Behavior as Stimulus—Objectively considered a speaker may refer to his own performances as the stimulus object of his linguistic behavior. But this presents us with no difficulty since it is obvious that the speaker can be his own adjustment stimulus—in fact, his own auxiliary stimulus also (see Chap. X).

Yet we must be warned against confusing speech reactions to objects with responses to the attitude, judgment, and admira-

tion of the speaker himself. The utterance *I believe the object is genuine* may be active, if the speaker is referring to his operation upon the thing, or passive, if he refers to the attitude engendered in him by the object. From an interactional standpoint a belief constitutes a stimulus as well as any other phenomenon.

B. FURTHER ANALYSIS OF ADJUSTMENT STIMULUS

To decide voice questions we must frequently know more about the adjustment stimulus than a gross analysis can reveal. For example, when the referent is itself a psychological action, we may require a knowledge of the character and location of the stimulus function. It makes a difference whether it is localized in an object that is present or absent, or whether the stimulus function calls out a manipulative (handling) or non-manipulative response (seeing or hearing).

Is the utterance *John burns his fingers* active or passive? According to the grammarian, who believes that the objective construction clashes with the idea of what is actually occurring (a suffering and no action because no object), there is neither an active nor a passive. From the psychological standpoint, however, it is clear that John is interacting with his fingers, though he is only stimulated to suffer from rather than do something to them. One need not hesitate to classify this utterance as passive. On the other hand, if the speaker regards John's fingers as things that he actually is manipulating, as when he dips them into water, the utterance is then active.

To analyze minutely referent behavior helps us to avoid confusing the passivity of a reference (voice) with a person's assumed passivity, which may or may not be spoken of. It is exceedingly detrimental to linguistic analysis to confuse the standpoint of the speaker with that of a suffering person. Actually John and his circumstances may harbor the stimulus function of a passive reference, but that depends upon a number of clearly defined circumstances. In no sense can active and passive be made into classificatory terms for conditions symbolized by words.

But such a procedure is characteristic of all grammatical work. Even when grammarians concern themselves with psychological processes they adopt an idea-or-meaning-expression (mentalistic) theory (see Chap. V) which allows them to assume that words express what seems appropriate at the time. The

result is a deplorable confusion of conceptions and terms in the field of voice-reference studies.

Finck² goes so far as to build up a classification of languages upon the distinction between *Tatverba* and *Empfindungsverba*—the former presumed to express so-called objective action, the latter, subjective action, such as in seeing. Undoubtedly Finck is thinking of word expressions for what is happening to the speaker, and overlooks altogether the fact that speech is reference behavior to the happenings in which the speaker may or may not participate.

Velten,³ offering another type of division, distinguishes between affective and actional verbs. The former are supposed to express states, such as love and hate, while the latter stand for ordinary action.

Such grammatical behavior analysis not only fails to distinguish between actual states, affections, actions, and passions, but the various classifications erected on the basis of what words presumably express are undoubtedly misleading.

VOICE AND ADJUSTMENT STIMULUS TYPES

To substantiate the claim that a psychological interpretation of voice aids us better to understand referential adjustments, it is expedient to distinguish the various types of linguistic interactions. When we do so we may be able to determine how the classifications passive, active, transitive, and intransitive apply when various types of psychological and non-psychological phenomena are spoken of.

A. PSYCHOLOGICAL INTERACTIONS AS STIMULI

Effective Behavior—We begin with those activities in which the actor actually manipulates, changes, and modifies something. Only references to such effective actions perhaps fit the conventional transitive descriptions. Furthermore, it is this type of reference that most likely contains what has been described as an object of result.

Affective Behavior—To feel anger or shame is a distinctive interaction with specific stimulus objects. Such affective behavior in contrast to effective behavior results in a change in

² Die Haupttypen des Sprachbaus, (Leipzig), Teubner, 1910.

³ On the Origin of the Categories of Voice and Aspect, *Language*, 1931, 7, 229-241.

the person himself instead of in the stimulus object. From a psychological standpoint, affective behavior constitutes just as active performance as effective manipulation. Hence the grammarian who describes such references may call the utterance *He is ashamed of his poverty* active, while the reference *He was put to shame* calls for passive description. The linguist no doubt would wish to classify references to such active behavior as intransitive.

Locomotor Behavior—When the speaker refers to a movement toward or away from an object on the part of the adjustment-stimulus person we may call the linguistic adjustment intransitive or absolute.

Implicit Behavior—Objective psychology distinguishes a type of action in which the stimulus object is not present and in consequence must be substituted for by some other object. A mark on my calendar arouses a response to an engagement I must meet. When the speaker refers to his own action—*I remember*—or some other person's—*he remembers*—a definite active performance is spoken of. Because of the word-form involved, the grammarian of course puts this utterance into the intransitive list, though it is clear that it is a very different kind of referential interaction from the speaker's assertion *He is falling asleep*, *He is waking up*, which we may agree to call intransitive.

Some basis for correcting the grammatical clash between the notional and the syntactic is in order. Jespersen remarks (PG 165) :

Whether a verb is syntactically active or passive depends on its form alone; but the same idea may be expressed by an active, sometimes by a passive form.

Admitting that all classification is arbitrary, we propose that when we observe what the speaker is saying about a happening, we can achieve an unambiguous arrangement of facts. Instead of saying that a so-called notion or event is properly or improperly expressed, we describe different linguistic patterns constituting references to such events.

Semi-Implicit Behavior—Sweet (CP 25) declares that with such verbs as *see* and *hear* it is clearly a metaphor to talk of an object. His view is based upon the widespread belief of gram-

marians that seeing and hearing are primarily passive phenomena (VL 104). Vendreyes (*ibid*) implies that it would be more logical to use passive verbs for hearing and seeing.

We could find no better opportunity to exhibit the great contrast between conventional grammar and psychological linguistics. In the first place, the grammarian implies that speech constitutes a description of events. Such is obviously not the case. Speech constitutes only references. No grammarian is privileged to assert that any event should be spoken of in any particular way.

There is, however, the task of describing how speech does occur, and here the psychologist may be of some service. He can provide criteria for the description of what speakers are observing and how they perform reference reactions. Objective psychology regards seeing or hearing something, like all other psychological activity, as definite interactions in which the person is decidedly active. The actor, however, is doing more than just sensing a sight or sound. He sees John doing something or he hears a sonata. It is because he is interacting with something more than he is directly in contact with that we call perceiving semi-implicit. Now if we agree to call references to what persons do active utterances, *John sees the fight* and *John hears the music* are active. And if we agree to call non-manipulative action intransitive, such utterances are intransitive. Incidentally, observe that there is no tight bond between the categoric transitive and active, since intransitive utterances can be both active and passive. We are not classifying words nor happenings, but references to happenings.

B. NON-PSYCHOLOGICAL ACTIONS AS STIMULI

Things Instead of Persons—Since we are describing references to events it is clear that the adjustment stimuli for those references may consist of non-psychological instead of psychological actions. References to such events may also be classified as active or passive, transitive or intransitive, etc. References to living things are illustrated by such utterances as *The mimosa folds itself up at evening*, *The mimosa is made to fold by touching*, while the utterance *The top spins (is spun) furiously* constitutes a reference to a physical object. Howsoever different in detail biological and physical facts may be from psychological events, both can be reacted to non-linguistically (seeing, hearing) and linguistically (referring to them).

VOICE, CASE, AND PERSON

It is not an insignificant advantage of psychological grammar that it shows a close connection between voice and case. As a matter of fact, adjustments to active and passive phenomena are special types of case references.

Linguistic psychology shows a similar advantage in the treatment of voice and person. Despite the fact that there are obviously first and second person utterances, *I am (you are) beating Paul, I am (you are) being beaten by Paul*, conventional grammarians really have no way of assimilating them. Since for the conventional grammarian the active and passive are reduced to the expression of the relationship between a transitive verb and its subject and object (NEG 112), voice belongs to the third person.⁴ Such an admission exemplifies the breakdown of the conventional conception of person (see Chap. XV).

The crucial test whether grammar can handle voice in the first and second persons is the attitude toward the imperative or second person active, especially the imperative passive. Now as soon as we turn away from idea-expressing words to reference adjustments, all such difficulties disappear. *Beat him* and *Be beaten by him* are definite references to spoken-to-persons concerning their own active and passive behavior.

LANGUAGE PATTERN AND VOICE

So entrenched is the idea-expression theory of voice-words that grammarians use voice word-forms as a basis for the comparison of speech systems. An examination of this procedure throws into sharp relief the conflicting viewpoints of conventional and psychological grammar.

We start with a quotation from Velten:⁵

In many African and American languages a verbal phrase can be recognized as such grammatically only if it contains an object (229).

This object, Velten goes on to add, can be expressed in two ways, (1) by a double pronomial affix of the verb (*Nahuatal, ti-nets-itta* = *you me see*), and (2) by a compound of noun and verb (*Nahuatal, ni-naka-kwa* = *I meat eat*).

If a verb—that is to say, a word or phrase expressing what would be regarded as a verbal idea in our IE languages—lacks an object or objective affix, it cannot be distinguished from a noun or nominal phrase.

⁴ We pass over the implicit suggestion that the terms active and passive have something to do with what the actor and acted upon say.

⁵ On the Origin of the Categories of Voice and Aspect, *Language*, 1931, 7, 229-241.

The implication is that only when this first distinction is made can voice classifications follow. It is evident that texts are in question here, as substantiated by the following quotation:

In Greenlandic, where no differentiation of affective and actional verbs is found, a form like *tusarp-a-ra* "I hear him" represents a *verbal* phrase because it contains an object, while in Georgic the corresponding form *mesmis* "to me-hearing-is," whether accompanied by a designation of the object or not, belongs to the affective-nominal class since it does not indicate an act of volition (231).

Any act of volition referred to is performed by the referent person. In the case indicated it is the act of the speaker himself. Now hearing, as we have indicated, is always the hearing of something; even the reference to a hallucination is a reference to an action. It is clear therefore that the utterance *mesmis* cannot be differentiated from the other utterances on the basis stated. There remains the argument that volition means intention, but the historical grammarian cannot find any basis for differentiating volitional from non-volitional action without special references, since there is no way of differentiating these forms of action except on the basis of the whole situation involved. Hearing can be intentional or not, as can every other form of psychological behavior.

Manifestly, the grammarian is making his distinctions on the basis of word expressions or word meanings. It is clear, however, that when language things (words) are under discussion, there is no reason why one arbitrary interpretation should be regarded as better than another. In general, the comparison of utterances and language systems on the basis of word or utterance forms is not only an unscientific but a futile procedure as well. There is no scientific basis for saying that Greenlandic does not differentiate between affective and actional verbs as compared with German. It is psychologically reprehensible to say that the Chinook language fails to differentiate between the logic of *he is big* = *bigness of him* and *(it is) his house* = *house of him*. There is no logic involved in any speech. Rather, the Chinook or other speaker performs such and such linguistic patterns when referring to things in particular situations.

Here we are reminded of Brunot's (PL 390) admiration for the linguistic instinct (*sic*), which, in spite of the identical construction in the two utterances *J'ai fait faire un vêtement à mon tailleur* and *J'ai fait faire un vêtement à mon fils*, attributes

two profoundly different senses to them. Jespersen's remark (PG 162) is equally interesting, in that he expresses wonder that such ambiguous constructions produce after all comparatively few misunderstandings. Nothing could illustrate better the word-meaning attitude of the grammarian. As against this we must remember that constructions are really adjustmental patterns in concrete situations and that how we describe any utterance, whether phrase, sentence, speech part, or grammatical device, depends upon its operation in a reference situation. The psychological view of speech allows us to place upon a scale of normal differences all the various adjustmental techniques from analytic Chinese to polysynthetic Amerindian.

LANGUAGE EVOLUTION AND VOICE

The value of the psychological analysis of speech stands out prominently when we apply it to studies in the evolution of language. In his paper on *Voice and Aspect Origin*, Velten asserts that the Indo-European languages develop in a definite series of stages. They begin with a division between (1) absolute nominal (house-mine) and (2) transitive or objective phrases (perception-its-mine). Next, there is developed a rigorous distinction of nouns and verbs, with the appearance of verbal suffixes even in phrases not indicating subjects or objects. Examples are (1) impersonal affective (*mich hungert*) and (2) personal actional verbs (*domum construo*). And finally the personal construction encroaches upon the impersonal, with the active-passive expressed by a new grammatical device. This stage is exemplified by (1) the affective medio-passive (*meditor*) and (2) actional active verbs (Greek *poieo*). Velten goes further to show that aspect grows out of this last stage, but as we are interested at present only in voice we stop here.

When working with historical records, there may be justification for this procedure, if at the same time some regard for the psychological analyses of speech situations prevents the excessive falsification of the facts of speech. But unfortunately, similar developmental schemes are set up on the basis of living languages. Thus, competent scholars like Uhlenbeck (IF 12, 170; KZ 39, 600; 41, 400) and Schuchardt (SB 290-310), observing that in such a language as Basque transitive utterances take the form *see-it-by-me*, declare that in all languages transitive verbs were originally passive.

So interwoven are the studies of linguistic origin with word forms, that these critics of the passive theory, for example Finck (KZ 41, 209), go so far as to base their objection on the ground that the possessive is more fundamental than the passive. But what is more interesting is that apparently the passive view is itself based upon a theory of the priority of nouns to verbs. Such a view brings us into the presence of those grammatical monstrosities—the verbal nouns.

Because origin studies do throw into perspective the difference between things and speech, we want to indicate the senses in which such statements of linguistic development may be illegitimate or somewhat helpful.

They are absolutely illegitimate when one thinks, as the grammarian undoubtedly does, that speakers have certain concepts in mind and employ corresponding symbolic techniques for expressing them. Schuchardt does not hesitate to say, "Auch in dem Kopfe des niedern Mannes gibt es Kategorien und Paradigmen . . . und sie leben und wirken unbewusst in ihm" (SB 299). Such a view implies that speakers are endowed with peculiar powers of conception, or at least that changes take place in the way events are envisaged by persons. How could the speakers of a community regard a situation as generally a passive one and then come to look upon it as active, or vice versa? When Vendreyes (VL 104) declares that Indo-European seems to have known nothing but the active, while other languages tend to reduce the voices to the passive alone, he can only be writing of forms—a statement which could not better illustrate how far grammar can get from speech. Nor is it the least objectionable implication that speakers make analyses or generalizations of situations and then build up word symbols to express those ideas.

Is it not feasible to believe that speakers have changed their institutional reference patterns to particular kinds of situations? Applying the psychological viewpoint to the study of speech changes enables us incidentally to see how established speech habits operate as fixed forms to influence the character of later speech developments. It is obvious that speakers of different communities evolve different linguistic patterings as modes of references to similar events. It is not improbable that a competency in objective psychological analysis is a *sine qua non* for all valid study of linguistic origins. With such an equipment,

grammarians might avoid the evils involved in the ordinary conceptions of language translations.

VOICE AND TRANSLATION

Voice studies, perhaps more than other departments of grammar, involve the practice of noxious translation, the evils of which we have already had occasion to discuss (Chap. X). The translation procedure may be illustrated by the grammarian's description of the Georgian language. It is said that Georgian speakers say *mesmis* = *hearing is mine*—in other words, use the affective form—but, on the other hand, say *vexeday* = *I see* in the active. What the grammarian does is to translate the utterances which he studies into his own form (equation of linguistic patterns), and in such manner obtains results that are not only queer, but lead to all sorts of misinterpretations. The alternative is to say that when the Georgian utters a reference to his hearing act as an adjustment stimulus, he employs or performs a language pattern describable as *mesmis*, whereas an English speaker refers to the same phenomenon by uttering *I hear*. Substitute also in the above sentence *vexeday* and *I see*. Now the Georgian is not expressing two different forms of conceiving phenomena, but rather he has been influenced by the evolution of linguistic institutions in his community to respond in these two ways to the corresponding adjustment stimuli. It is only a misinformed translation technique that is responsible for any peculiarity one finds in language situations. In this connection, too, we must notice Wundt's notion (S 2, 340 f.) that in order to understand comparative sentence forms we must be careful to maintain in each of the compared languages the exact correlation between thought forms and their word expressions without admixture from the other. The contrast here is sharp between: (1) different forms of ideas corresponding with different forms of expression, and (2) different adaptation patterns to similar referents.

CHAPTER XX

MOOD

CONFUSION OF MOOD GRAMMAR

MOOD, like case, is a topic concerning which the greatest variation and confusion exist. Possessing no common ground upon which to build their conceptions, grammarians differ widely concerning the criteria for the definition of moods or for establishing their nature. Nor are they united concerning the existence of moods in particular languages, nor what they signify when they do occur. Such varying interpretations naturally affect the ideas concerning the number of moods—even their name, whether moods or modes.

Probably most of this confusion arises because moods more than most grammatical items force the grammarian to take account of psychological happenings. Now when the grammarian attempts to assimilate psychological facts he finds that they clash with the formalistic tradition of sentences. Grammatical tradition has made utterances or sentences into propositions which could be easily confined in convenient classes or modes. In other words, there could be only a few variations of formal propositions. But the great diversity that actual speech references exhibit made it impossible to reduce them to a few sentence types. Thus the conception arose that moods are really utterances expressing the mental states (moods) of speakers. According to this conception, however, moods are widely varying and must therefore differ in name, number, etc. But since grammarians must stay close to the words expressing moods, and since words are fixed elements calling for tight organization, further occasions for confusion appear.

HISTORICAL BACKGROUND OF MOOD STUDY

In order to show its effect upon mood study, it may not be unprofitable to review the historical source of grammatical logic, the thread of which carries us back to Aristotle.

Let us recall again that the age of Aristotle was the age of demonstration, of objectivity. As yet no contrast between sub-

jective thought and objective existence had been established. The thought concerning a thing or condition was as objective as the thing itself—merely a different aspect of objective existence. Knowledge, therefore, for the men of that age was a matter of demonstration—the establishment of truth. Since there was no dualism at this period, truth did not stand over against reality. Truth was merely a matter of the proper statement concerning reality. The fundamental type of utterance, therefore, for Aristotle was the proposition, for only a proposition states something. Only a proposition has in it truth or falsity. Questioning, wishing, admonishing, and commanding utterances are not only sharply distinguished from propositions, but only the statement utterance is of any importance or value.

Implied, of course, in the Aristotelian doctrine of the sentence is the conception that it is a thing or tool, whereby one establishes or demonstrates the reality of some kind of existence. Modern grammarians found it necessary only to modify this conception, so that the sentence could become a tool to express a wish, a thought, a desire, or a request. The history of mood grammar faithfully reflects the development just sketched and suggests that in our investigation we shall do well to keep that history in mind.

THE DEFINITION OF MOODS

In the beginning of grammar there was logic. Accordingly mood phenomena are regarded as modes of sentences, as in the typical definition of Heyse,¹ that modes are the manner of logical connection of subject and predicate. And this modality is indicated by the flexion of verbs. This view of mood is taken over by Sweet (NEG 105), though, since the nineteenth century, grammarians have attempted to organize the modes, on the basis of the logician's tripartition of categories, into those of possibility, existence, and necessity.²

Grammarians, however, could never be entirely unaware of the difference between formal logical propositions and speech utterances. Even early Greek grammarians—for example, Apollonius Discolus—regarded mode as a matter of the psychic description of the speaker. In consonance with the same motive, Dionysius Thrax classified the moods, though called by another

¹ *System der Sprachwissenschaft*, 412.

² See Hale, *A Century of Metaphysical Syntax*, *Pub. of Congress of Arts and Sciences*, (St. Louis), 1904, Vol. 3, 191-202.

name, into those (1) indicating, (2) commanding, (3) wishing, and (4) subordinating (SG 52). The last, however, named by the Romans subjunctive, appears to be based primarily upon the construction of sentences. About the beginning of the last century, Hasse, and later Hermann, achieved a thorough compromise between the propositional and the expressive motive, and the latter elaborated the modes to include existence—whether the act referred to actually takes place (indicative), objective possibility (conjunctive), subjective possibility (optative), objective necessity (Greek verbal adjectives in *-teos*), and subjective necessity (imperative) (Hale 194).

Later grammarians have emphasized more and more the so-called psychic attitude of the speaker. Thus Brugmann (KVG 37) defines a mood as:

Eine Aussage über eine Seelenstimmung des Sprechenden, über einen subjektiven Zustand, zu dem die Handlung die objektive Nebenstimmung bildend, auf die sich dieser Zustand bezieht.

Among the grammarians who stress this psychic attitude of the speaker there are, of course, minor variations. Some, as in the case of Brugmann just quoted, make the expression correlate between the mental state and the objects referred to, while others make mood a matter of "the attitude of the speaker toward the utterances—namely, its reality, its probability, its desirability" (LSL 287).

The subjectivistic or expressive attitude concerning mode, which undoubtedly gives rise to the name moods, is expressed by Noreen (WBS 307), who defines mode as a grammatical category expressing what rôle the content of an utterance plays in the psychic life of the speaker—whether it appears as an object of a pious wish or an eager desire.

Even if the extreme logical position is pushed to the background, it is still difficult for the grammarian to get away from the formal organization of sentences. For example, Jespersen rejects Sweet's definition that moods "express different relations between subject and predicate," in favor of the view that they express certain attitudes of the mind of the speaker toward the contents of the sentence. Still, he believes:

The choice of a mood is determined not by the attitude of the actual speaker, but by the character of the clause itself and its relation to the main nexus on which it is dependent.

He asserts (PG 313) that the subjunctive in *Ma femme veut que je lui obeisse* evidently says nothing about the speaker's frame

of mind. Jespersen goes on to say that we speak only of mood if the attitude of mind is shown in the form of the verb, and accordingly mood is a syntactic category.

THE CRITERIA OF MOODS

Whether grammarians are partial to propositional types or incline toward mental attitudes, they finally turn directly or indirectly to word forms as a basis for their criteria. The symbolic motive is at work here as everywhere. As we have just seen, so recent a writer as Jespersen makes mood center about the form of the verb. For the most part, however, grammarians emphasize combinations of words (sentences) instead of single words.

The different definitions of mood that we have canvassed in the preceding section indicate that grammarians really start with various forms of utterances or sentences and then squeeze out of them certain criteria for interpreting moods. And so in addition to the basic-form criterion we find two others—namely, meaning and purpose. The form criterion probably originates in the logic of propositions, and is perpetuated by the grammarian's adhesion to word symbols. The meaning criterion has to do more with the expressive possibilities of words or word combinations, while purpose is certainly interconnected with a conception concerning the use to which sentences are put. The grammarian who stresses purpose undoubtedly keeps his eye focussed upon the imperative forms of utterance.

Form or Symbolic Criterion—The position of Jespersen is typical of the symbolic criterion. Behind his view is the attitude that grammatical phenomena must be limited in number. He says there are many moods if once one leaves the safe ground of verbal forms actually found in a language. But notice the consequence of this symbolic position. Jespersen himself declares:

Those languages which have a separate form for it (subjunctive mood) by no means apply it to the same purposes, so that even if this mood is known by the same name in English, German, Danish, French, and Latin, it is not strictly speaking one and the same thing; it would be perfectly impossible to give such a definition of the subjunctive in any of these languages as would assist us in deciding where to use it and where to use the indicative, still less such a definition as would at the same time cover its employment in all the languages mentioned (PG 48 f.).

He goes on to say that it is no wonder that there are a great many languages containing nothing which could be termed a sub-

junctive mood, however widely the sense of the word could be stretched. He continues with the assertion that:

The history of English and Danish shows how the once flourishing subjunctive has withered more and more until it can now be compared only with those rudimentary organs whose use is problematic or very subordinate indeed.

Probably the most serious consequence of this kind of viewpoint is that certain languages would have to be regarded as deficient in adjustmental value. Unfortunately, on this basis some speakers must be deprived of the capacity to perform referential reactions which others can do very effectively. It is more than doubtful whether a scientific study of language reveals any such incapacity on the part of Danish or German speakers or in greater degree those whose language contains no grammatically formal subjunctive at all.

Pure Expression Criterion—As a disciple of Wundt, Deutschbein (SNS 112-135) well represents those who rely on the pure expression criterion. His fundamental conception is that moods represent or express states of mind—a definite relation in the speaker's consciousness of what is thought, wished, willed, or expected (W), with respect to reality or the possibility of realization (R). Accordingly, he has worked out a set of pseudo-mathematical proportions to represent necessity when $W/R = > 1$, reality when $W/R = 1$, possibility when $W/R = < 1$, and impossibility when $W/R = 0$. Thus since in the German optative *Lebte mein Vater doch*, the sentence indicates that the wish cannot be carried out, the ratio equals zero. When the father is living, the sentence *Möchte mein Vater noch leben* can be represented by $W/R = 1$.

Since his emphasis is upon the condition of consciousness, Deutschbein does not start with a limited number of forms which can indifferently express mental states. Hence in English there are four chief classes of moods with at least four subclasses under each, making sixteen in all, as indicated in the following schema:

- (1) The Kogitativus, expressing relation of thought to reality.
 - (a) The Indicative—
 - (b) The Irrealis—*He would come, if he were not ill.*
 - (c) The Potential—*This may be true.*
 - (d) The Necessary—*must* expressions, though curiously enough the necessity may be only in the mind.
- (2) The Optativus, expressing relation of wish to reality.
 - (a) Normal Optative—*May I never see him again.*

- (b) Optative Irrealis—*I wish he were dead.*
- (c) Augmented Optative—*I should like to know what you have learned.*
- (d) The Permissive—*may* and *might* expressions.
- (3) The Voluntativus, expressing relation of desire to reality.
 - (a) Simple Voluntativus—*Speak.*
 - (b) Augmented Voluntativus—*You must go.*
 - (c) Future Voluntativus—*I will go.*
 - (d) Irreale Voluntativus—*I ought to go.*
- (4) The Expectativus, expressing relation of the expected to reality and especially to possibility of reality.
 - (a) Simple Expectativus—*He is due to come.*
 - (b) Augmented Expectativus—*He surely must have arrived by this time.*
 - (c) The Dubitative—*I doubt whether he knows.*
 - (d) The Irreale Expectativus—*I do not expect that a child should know anything of death.*

As we should expect, this artificial classification with its attempt to make a limited number of pigeon holes for confining all the numerous and diverse types of activity is full of contradictions and irrelevancies.

Sonnenschein, who is only partially wedded to forms, asks why the limit should be placed at sixteen, whereas Jespersen, who tries to keep closer to them, points out that this classification really harks back to the old metaphysical organization of moods. In favor of Deutschbein's scheme, it might be said that should he throw away the expression theory, it might be the basis for a classificatory arrangement of references to actual phenomena, howsoever unnecessary such a classification might be.

Meaning or Expressive Criterion—Since grammarians at bottom always deal with words, it is not surprising that those who emphasize meaning or what the speaker's mood expresses also claim to start with verb forms. The grammarian starting with the meaning criterion soon finds himself obliged to say, as Sonnenschein does (SG 154), that "the verb-forms need not be distinctive of the Aspect." By Aspect the grammarian means distinction of meaning. Sonnenschein goes on to say that form is only one of several agencies whereby distinction of meaning can be indicated. The other agencies are context, order of words, phrasing, and intonation.

The grammarians who espouse the expressive criterion display not one whit less confusion than do those who cleave to the form criterion. Each group attempts bravely and yet futilely

to do justice to the facts of speech. The expressionists strive to get by the severe criticism leveled against them by the formalists that some languages lack the reference possibilities of others. Sonnenschein, for example, believes that the subjunctive meaning which one language expresses in one way is expressed by other languages in another. "It is a mistake to say that the subjunctive mood has practically disappeared from modern English" (SNS). What has happened is that English uses other means to express it. For example, it uses *shall*, *will*, *let*, and *may* with the infinitive. Modern English thus makes use of a large number of subjunctive equivalents.

Sonnenschein is keenly aware of the difficulties and contradictions inherent in his position. A common substitute for the subjunctive is *am to*, *are to*, and *is to* with an infinitive. But though the subjunctive meaning is expressed by *He is to write* and *He was to write*, Sonnenschein hesitates to include all such equivalents under the heading of subjunctive. But though he asserts that "the meaning of the subjunctive is quite different from that of the indicative," he apparently finds no difficulty in saying that in the sentence *Take care that you are not caught* the indicative is used with the subjunctive meaning. The actual difficulties are increased when other grammarians designate such an utterance as an authentic imperative.

How far the meaning criterion can confound the subject of moods is illustrated by Sonnenschein's elaboration of what the subjunctive and optative moods express. The scheme is as follows:

I. *Subjunctive and Optative Proper*

Expressing	{	Desire
		Obligation or Propriety
		Determined Futurity
		Conditioned Futurity

II. *Subjunctive and Optative Modified*

Expressing	{	Oblique Speech
		Dependent Statements and Questions
		Clauses of Result, Time, Cause, and Contrast

Surely we have here curious alternations between sometimes finding a meaning for a given form and finding a form for a genuine or putative meaning. We must notice, too, the dependence of the grammarian upon the records of sentences as traced

down from classical texts, with the obligation of interpretation that they impose upon the grammarian.

The criticism which Jespersen levels at Sonnenschein, to the effect that the nature of meaning is not satisfactorily presented, is probably justified. At best, meaning is interpreted as the conventional translation which the grammarian puts upon sentences or even words. The result is a curious mixture of forms, functions, and meanings which not only complicates grammar but makes difficult an orderly arrangement of grammatical conceptions.

Purpose Criterion—This criterion is probably the basis for the general conventional mood classification that offers usually a limited number. The conventional grammarian takes the position, wittingly or not, that all utterances represent the means of carrying out certain purposes. It is probably on this basis that he classifies moods as utterances expressing thought (subjunctive), fact (indicative), and will (imperative). In other words, the indicative is used for the purpose of stating a fact, the subjunctive in telling the attitude or thought of the speaker, while the imperative is employed for the purpose of having a willed act carried out. We have already criticized the entire notion of expression and purpose in speech (Chap. V).

HOW MANY MOODS?

The difficulties and confusions of mood definitions and criteria become more and not less intense when we approach moods from the angle of their number. Should the grammarian stick to the form of the proposition or to what it expresses? In the former case he would have a few moods and in the latter a large number.

It is probably the influence of the proposition that makes the grammarian center his moods about certain speech parts. Why then does he discriminate against the infinitive and participle moods? Apparently it is the greater potentiality of true verbs (*sic*) for sentence or proposition making that gives them a special mood character. For the infinitive becomes for him a noun and the participle at least half an adjective. What is the result? Nothing less than that many utterances are left without mood character. Here we have one of the forces that moves the grammarian to dig a wide trench between mood and the phenomenon of number of utterances.

The trail of the proposition motive can be traced in the writings of Sweet. In a paper entitled *Words, Logic, and Grammar*, printed in 1876 (reprinted in C. P., 1913), he rejects the infinitive, but insists there are in English several forms of the verb that ought to be included among the moods. These are the emphatic *I do go*, the negative *I don't go*, the interrogative *Do I go?* and the negative-interrogative *Don't I go?* In his NEG (1891), however, he turns more definitely toward the proposition.

Here he is practically reduced to two for English, since there are only two inflectional moods, the subjunctive and the indicative. But even these two are only slightly distinguished. It is clear that Sweet really thinks in terms of the modes of a proposition to express statements of fact or thought. The imperative slinks back to the margin of the grammatical page. "The imperative does not state a command, but addresses it directly to another person" (NEG 111). Notice that he still says that the imperative sentence rather than the speaker does the addressing. He adds that the imperative does not require a pronoun to make person, and indeed perhaps for him its weakest point is that it does not have to be a sentence but may be a word *come*, or at least a one-word sentence.

Latin, French, and German, Sweet says, are also limited to two moods to express statements, though Greek has an optative. But, though he comes close to losing all moods in English he cannot overlook actual speech and so he must make such concessions as would minimize his inflectional criterion and add not only periphrastic moods—for example, the auxiliary *should* and *would* with the infinitive (conditional), but also preterit tense moods—for example, *If it were possible I would do it* (subjunctive tense-mood). It is unfortunate for a formalist that the conditional mood has the same form as the future-preterit tense *I should see the man*. Can there be any doubt that the study of quantity of moods reveals an utter lack of principle concerning the nature and function of such speech phenomena?

Although Sweet in common with other grammarians attempts to divide off indicative and subjunctive mood phenomena into fact or thought *statements*, on the one hand, and fact and thought *forms*, on the other, he must confess that in language the correspondence between statement and form is not always perfectly logical. We have here a significant consequence of the thought-expression notion which drives grammarians to make

language into a sort of logic, with an inevitable failure of speech to yield to the procrustean technique. It is curious how faithful grammarians remain to their so-called logic when linguistic facts constantly show that either logic has nothing to do with grammar or that grammar has little or nothing to do with speech.

THOUGHT AND REALITY

Grammarians who attempt to correlate mood and thought shift their ground from the investigation of speech to speculation concerning the connection between thought and reality. This sort of shift results in attributing such special characteristics to the imperative as we have observed Sweet to do.

Perhaps a serious difficulty is localized in the grammarian's contrast between the indicative and subjunctive. Notice first that although all grammarians regard speech as forms expressing what is in the mind of the speaker, they still call the subjunctive a thought mood. Some grammarians, of course, openly assume that what thought means in the subjunctive is actually unreality in comparison with the indicative thought which concerns the existing or real. But here the glaring inconstancies nullify completely their statements. When a grammarian declares that a verb expressing doubt is in the subjunctive mood and then gives an example, *If he were here I would do it*, he certainly confuses language hopelessly. What is unreal about this fact? As McKerrow (EGG 167) says, in criticizing such a procedure from the standpoint of grammar teaching, "there is something contrary to all sound principles of education in suggesting that a condition implies something doubtful."

Moreover, could a grammarian put such utterances as *I believe you are entirely wrong* or *I doubt that* in the subjunctive when it is palpable that these are clearly statements of as absolute fact as one could ever find? Here are strange ideas about truth and reality. Nor is any grammatical defense rational that relies on differences in patterns of utterance or type of words—for example, those containing *if*, *when*, etc., since all grammarians must agree that there are few subjunctive forms in some languages. "The subjunctive mood has—apart from a few fixed phrases—no real existence in modern English" (EGG 167). Perhaps we may readily conclude that upon the bases given by grammarians there are in some languages not even three moods. As in so many cases we point to Chinese as an example.

We may go on to consider the relations between the imperative and subjunctive. The former is defined as expressing commands and requests, but at the same time there is presumed to be an optative subjunctive. What is the difference in linguistic reality between a wish and a request? *I wish you would do this* is a most imperative linguistic response when spoken by an employer to a subordinate worker.

When we regard moods as varying psychological types of linguistic adjustments, we cannot escape the question whether linguistic patterns are in fact limited in number. There is a tremendously large range of linguistic situations and we have not found in grammars any good criterion for fixating a definite number of forms for an exclusive mood designation. No good reason is given for throwing out the interrogative, the emphatic, the negative, or any number of others. The limitation of moods is nothing but a tribute paid by grammarians to the modes of propositions.

MOOD AND TENSE

That conventional grammatical modes are simply artificially fixated forms appears from the linguist's treatment of the relation between tenses and reality. Let us recall Jespersen's statement that the future tense is often used to express supposition or surmise and that the most important non-temporal use of preterit forms is to indicate unreality.

From the formalistic standpoint it is evident that mood and tense coalesce, since in both cases meanings are extracted from word symbols. And in both cases the meanings are really derived from the observation of usage. That is to say the grammarian discovers the meanings expressed by utterances (really linguistic patterns) from the way the speaker adjusts himself. The consideration of the use of different patterns for similar adjustments and similar patterns for different kinds of adjustments points the way to a general adjustmental approach to the interpretation of moods.

THE EXISTENCE OF MOODS

So inchoate is the whole subject of moods that we may well raise the question whether there are any such phenomena at all. There are two possible answers, both of which indicate a sharp retreat from the conventional treatments of the grammar books.

First, we may decide that mood is nothing but an accidental and variable style of particular languages. This attitude is excellently expressed by Jespersen when he indicates that the indicative and subjunctive are not the moods of fact and thought respectively.

We get nearer to the actual facts if we regard the indicative as the mood chosen when there is no special reason to the contrary, and the subjunctive as a mood required or allowable in certain cases varying from language to language (PG 318).

In this connection Jespersen (PG 318) writes of the frequency with which certain languages hesitate between an indicative and a subjunctive form, as, for example, English *If he comes (came)*; German *damit er kommen kann (könne)*; and the French *S'il vient et qu'il dise*, which is used with either meaning. While Jespersen uses this point as an argument against Sonnenschein's view that mood is a matter of meaning, it militates as well against his own idea of moods as forms. We may infer that moods are stylistic matters organized by the grammarian on the basis of a knowledge of the choice and use of words in formal discourse.

A consideration of these points strongly suggests that we should not limit ourselves in mood studies to a single language or even a single family. When we do we inevitably court the danger of taking particular stylistic facts for general grammatical phenomena. An occasional glance at Chinese is a certain corrective for many errors involving the erection of word-meanings or syntactic organization of words into general grammatical phenomena.

Secondly, we may conclude that there is really no way of separating mood out as a distinctive linguistic phenomenon. Our discussion of conventional grammatical conceptions has sufficiently indicated that there is no promise of extracting linguistic principles from the process of making moods either a matter of forms or expressed states of mind. When we deny moods a special place among grammatical phenomena, we treat the subject-matter usually presented under this heading as a problem in the classification of utterances. Once more we want to indicate that when grammarians make a separate topic of moods they merely symbolize the fact that grammar is a study of word things and what they express. On the whole, moods are regarded as symbol-meaning material that can be extracted from sentences or utterances.

MOODS AS TYPES OF UTTERANCES

When we study speech as types of psychological adjustments we are at once enabled to evaluate grammatical moods. For objective psychology, moods are nothing but particular response-patterns or speech-community styles of utterance. It is probably because of the slight rôle that speech situations play in the thinking of grammarians that we find so many difficulties and irrationalities in the grammar of mood.

If moods are to constitute descriptive features of language, we cannot overlook the large variety of adjustment patterns as conditioned by a great number of particular situations. So varied are the responses in this sense that it is a grave question whether they can be satisfactorily classified. A study of moods, however, provides an excellent opportunity for analyzing referential adjustments as well as enabling us to see how far actual situations have forced grammarians to describe at least some utterances as features of human circumstances.

In Chapter XIII we have suggested that objective psychology provides a basis for separating off one utterance from another. To recapitulate briefly: kinds of adjustments may be worked out on the basis of (1) the circumstances of the speaker, (2) the relation of speaker to hearer—their intimacy, age, social and economic relations, (3) the numerous contacts and connections between the speaker and the objects spoken of, and finally (4) the specific settings in which the speaker, hearer, and objects spoken of are interrelated in concrete situations.

CHAPTER XXI

DIRECT AND INDIRECT SPEECH

SECONDARY SPEECH

DESPITE the limited treatment given secondary speech (direct and indirect speech, discourse) in conventional grammar, the study of that topic provides us with basic materials for a scientific understanding of language. Itemized, a study of the grammatical handling of secondary speech brings vividly to light the indulgence in arbitrary definition and the subsequent confusion of the definition or description with the phenomena defined or described.

DIRECT AND INDIRECT DISTINCTION BREAKS DOWN

In general, grammarians regard secondary speech as the report of what someone has said. But since they inevitably concern themselves with word-things, what they call secondary speech is really a series of symbolizing words that substitute for thought or written material—both epistolary and literary text. Regardless of the term, secondary speech may have nothing whatever to do with speech, either original utterances or utterances referring to speech.

Furthermore, the word-thing motive promotes the setting up of definitions which are no sooner set up than broken down. Take, for example, the grammarian's division between direct and indirect secondary speech. Direct speech is defined as the exact repetition of what is originally said or written. But, immediately, vivid indirect speech, which is described as only a representation of the original, is said to contain many of the elements of direct quotation. Moreover, as Jespersen (PG 299) says:

The distinction between direct and indirect speech is not always strictly maintained. . . . Human forgetfulness or incapacity to keep up for a long time the changed attitude of mind implied in indirect discourse causes the frequent phenomenon that a repeated speech begins indirect and is then suddenly continued in the direct form.

Thus when a certain set of words allows, a definition is set up, and when a different set turns up the definition is upset, even if

it is necessary to invoke a spurious reason to account for the liquidation. The difference between direct and indirect speech seems to rest only upon the accidental inclusion or exclusion of similar words.

NO SECONDARY SPEECH

We may now turn to a more serious difficulty inherent in the grammatical conception of secondary speech—the cardinal error of confusing description with what is described. Nowhere in grammatical literature is it appreciated that when the original speaker has spoken he did not merely utter or produce words which are now in whole (direct speech) or part (indirect speech) reproduced, nor that the present speaker is likewise not merely reproducing the words in whole or part, but rather adapting himself linguistically to some event.

The entire conception of secondariness, which dominates the treatment of direct and indirect speech, is altogether without basis in fact. It is only by thinking in terms of matching words that we can ascribe a secondary character to any speech. When we think in terms of actual adjustments, every speech event is an autonomous and unique event and no copy of anything else, whether of things, thought, or speech. As it happens, the direct speech of grammar stresses the error of words, whereas indirect speech errs mainly on the side of style. We shall accordingly examine each type more closely.

DIRECT SPEECH

Direct speech, says the grammarian, is the process of giving or purporting to give the exact words of the speaker (or writer) when one wishes to repeat what he or someone else has previously said, thinks, or has thought (PG 290). This description fairly bristles with errors.

Let us carefully consider the matter of repetition. There are several cases. First, someone is now presumed to be copying something that someone else has previously written. There may or may not be exact reproduction. How could anyone call this speech? The activity is copying no matter what the medium. One may just as well paint a replica of someone else's painting as write what he has written. In this case neither the original nor the secondary has anything to do with speech.

Now take the case when someone articulately repeats the words of another. It makes very little difference that we are dealing with purely mimicking action rather than with the production of a product. Vocal mimicry is no less mimicry and not speech. Words so uttered are action-things and may well stand for words. They may indeed be true symbols, but nothing could contrast more markedly with genuine speech adjustments. What we have said holds whether or not the original is speech.

Now we turn to speech. Assume that a speaker is referring to what someone else has said. In what sense is this a repetition of an original speech adjustment? Let us recall that the original speech is a complex form of behavior, even though one does not accept the theory that speech is an adaptation to a bistimulational situation. Hence the only way in which the original act can be repeated is by the second speaker being in that situation.

When I utter the words *I will not do it* (whether or not preceded by the utterance *He said*) in answer to the question *What did he say?* my reference to what he said cannot be regarded as a complete coverage of the former event. For two reasons: First, the former event is an elaborate performance by a person who refers to what he will or will not do because of some good or sufficient reason (private principle, local law, religious custom, or community convention). Second, even though we disregard the whole adjustmental situation, we cannot think that my reference *I will not do it* is literally a repetition or a coverage of a set of words. Who can overlook the utter artificiality of such a performance, even if it actually happened? Who would be interested in it except as the evocation of a mechanical robot? Even in conventional terms there must be meanings—in our terms there must be an adjustmental behavior. As to the other features of the event, they are reacted to (understood) by both the person who asks the questions and myself, either because of our independent acquaintance with them or our previous conversation. Otherwise, the entire present situation would be senseless. To overlook these considerations means to reduce complex linguistic phenomena to words and erroneously to identify the latter with speech adjustments.

And finally, we turn to secondary speech, which is presumed to repeat not speech but thought. It is asserted that in direct speech one gives the exact words in reporting what someone (self or other) thinks or has thought. What are the exact word-

repetitions of a thought?¹ Here is revealed another cardinal error of the grammarian—namely, that words are the expression of thought. But this error is intensified because words of a present speaker are presumed—at least, sometimes—to express the thought of other persons in some past time. If we assume rather that the present speaker refers to what someone has or is believed to have thought, then we have an actual, psychological, linguistic event, but no question of directness or indirectness of speech arises at all.

INDIRECT SPEECH

Because indirect speech is said to be less closely tied up with the original (less repetitive) than direct report it carries the germ of true linguistic reference. It is possible to think of it as reference to what someone has said. But if this germ comes to any development it is only in a casual and implicative way. On the whole, however, the word-thing conception carries the day, and speech is finally reduced to words, since the grammarian's technique converts the things described into the materials of the description. Accordingly, both original and reported speech become organizations of words in various styles. In detail, grammarians set up four stages or levels of describing how persons speak and then compare the various styles of word combination. During this process the original speech is identified with written or spoken word-things and loses all its character as speech adjustment.

One of the first consequences of making the study of secondary speech into a problem of style description is the setting up of four arbitrary types of speech, including the original. Are there four and only four types of speech? We must carefully examine this question. Despite the fact that there are really no differences between the grammarian's direct and indirect speech, as we have seen, grammarians still divide the latter into two divisions. It is as natural as it is significant that they cannot agree upon the names of these divisions, since they differ in the matter of what they are treating. Lorck², for example, separates off reported (*berichtete*) from expressed (*erlebte*) speech, while Jespersen (PG 290 ff.) makes a distinction

¹ Truly enough what is called thought is frequently only subvocal speech. This is not, of course, what the grammarian refers to. But while this can be in a measure repeated, it cannot be done in the way required by the conventional doctrine of direct speech.

² Die Erlebte Rede, (Heidelberg), Winter, 1921.

between the dependent form introduced by a verb, *He said, hoped, thought, etc.*, and the truly representative, in which the writer (*sic*) reports what the person spoken of was saying or thinking as phenomena continuous with outward happenings.

These four styles of speech may be illustrated as follows :

- (1) Original— *What will become of me?*
- (2) Direct— *He asked: What will become of me?*
- (3) Dependent— *He asked: What will become of him?*
- (4) Represented—*He wondered what his future would be.*

What other difference is there between direct and dependent speech except style of description? In our example, there is only one word change, but, of course, there may be many differences, such as shifting of person, tense, mood, and form of question or command. Yet the fact that even the one word above need not be changed is sufficient evidence that we are dealing here with a matter of descriptive style. There may be many ways of describing speech when regarded as actually occurring adjustments.

When Jespersen (PG 292) asserts that represented speech is more vivid than dependent speech and hence more like direct speech which is imitative of the original, he is clearly only referring to a vivid style of description. As we have already seen, he thinks of represented speech as containing some of the elements of direct speech—in other words, imitations of the original. When the grammarian clings to a description of what the original speaker does, is he really concerned with real speech, either original or secondary? This point is further emphasized when we consider Jespersen's illustration of what he means by represented speech—namely, Thackeray's description of what Pendennis and his mother think. It follows that represented speech is the style of a writer when describing the imaginary thoughts of a literary character. From this standpoint we must conclude that represented speech is wholly a matter of literary style. Notice that when Jespersen (PG 291) also asserts that the term *representative* is descriptive of what one writes ("it is chiefly used in long connected narratives where the relation of happenings in the exterior world is interrupted"), he indicates that the whole subject of secondary speech is not concerned with speech at all.

But even when we are dealing with authentic speech, there seems to be considerable confusion in the concept of indirect speech. Consider such examples as *Er soll sehr reich sein* = *He*

must be very rich. Certainly the original definition of secondary speech is replaced in this instance by another. No speech is necessarily reported here. Instead, the speaker is referring either to a rumor (true or false) concerning the wealth of a person or to his own inference about such wealth. Jespersen, who gives these examples, assumes that we can and must interpret these sentences as repetitions of what someone says, but that misses the essential fact of speech adjustment in implying that secondary speech consists essentially of word reproduction.

SPEECH AS SPOKEN OF

Though from a psychological standpoint the conventional grammatical treatment of direct and indirect speech is exceedingly faulty, there still seems to be room for some genuine facts. It turns out, however, that these facts are nothing more than spoken-of speech.

Since speech is so pervasive a phenomenon it is not surprising that someone's speech should be spoken of—in other words, that speech should be the adjustment stimulus in a linguistic interaction. The speech of our friends, enemies, persons of power, and authority may be just as important events as any that we are aware of. Accordingly we may frequently have occasion to refer to speech behavior of all sorts, just as we refer to other events.

When we look upon reported speech as speech spoken of, we find that the original speech constitutes the adjustment stimulus in several general types of situations.

Exact Quotation—The witness in a law trial is called upon to report what he has witnessed. He thereupon tells (refers to) what he has seen and heard. Psychologically speaking, he is reacting to the previous reactions of the defendant, both manipulatory (striking the accuser) and linguistic (speaking to him). Now both the manipulatory and linguistic behavior of the defendant constitute the adjustment stimuli or contain the adjustment stimulus functions, while the judge and jury constitute the auxiliary stimuli. For the purpose of the court the witness may attempt to re-enact the entire situation as it originally occurred. In so far as he mimics the previously performed actions there is no speech, as we have already indicated. But in so far as there is true speech we have descriptive references to both speech and other behavior. The exactness here is

in no sense the kind of repetition that we have criticized. It is merely such as to give the court proper information as to what has occurred as a basis for judgment.

Casual Quotation—The linguistic behavior of a person may be reacted to by the present speaker, not by a careful and accurate recital, but by the ordinary referential procedure. Here the speaker merely tells about speech much as he tells about any sort of event that has happened. Casual quotation bears the same relation to the original speech as does a person's telling that he *threw the ball up high* to his attempt to execute such an action.

Casual reference is less closely connected with the original adjustment stimulus than is true of exact quotation. It is more comparable to such actions as thinking over, approving, or disapproving of what someone said than to the repetition of some previously performed response.

The remoteness of quotation-references from the original speech-adjustment stimulus is subject to a gradation of steps. Instead of A speaking of B's speech, he may refer to what C said of B's speech. Here again A may refer to C's speech accurately or only casually. Throughout the several degrees of remoteness it is immaterial whether A's hearer learns what B has actually said or not. To fulfill the conditions of secondary speech it is, however, essential that there should be an original adjustment stimulus somewhere in the series.

Answering Speech—Answering responses as references to speech emphasize the difference between the conventional and psychological conceptions of speech-referring speech. For example, in situations in which either exact or casual references to original speech are made, we may be interested primarily in the answer rather than in a question or informational behavior. These situations are illustrated by the following bit of dialogue:
Question—*Did he say he would pay the bill promptly?* Answer—*Yes.*

References to Reference Manner—In the three cases already treated the present speaker refers to an original speaker's reference. But he may also refer to the manner of the original speech, in which case the adjustment stimulus is not what the person said, but how he said it. Such utterances as *He spoke harshly, volubly, emphatically*, are therefore psychologically

primary speech. Though this type of speech-reference speech is not secondary speech, its consideration throws light upon the nature of references to references.

SECONDARY SPEECH AND GRAMMATICAL CATEGORIES

In passing we have indicated that grammarians teach that secondary speech phenomena involve shiftings in tense, mood, etc. Our study of secondary speech therefore yields information concerning various grammatical categories.

When the conventional grammarian declares that going from original speech or direct quotation to indirect quotation involves changes in mood, person, tense, etc., he is assuming that at least for the most part secondary speech is embodied in different word forms. *I am ill* becomes *He said that he was ill*, etc.

From the psychological standpoint, on the contrary, the description of what a speaker says in original and secondary speech situations must be made in terms of adjustments, and obviously these differ because of varying circumstances. For example, in reported speech the references are made to an event predating the described speech event. Accordingly, we must describe that speech event as patterned in the past tense, since we are always concerned with concrete time. This consideration supports the view of tense as a characteristic of intrinsic speech patterning.

This change of tense, though an invariable condition of speech reporting, is of course not restricted by any stylistic limits imposed upon speech references. Wherever we have secondary speech, no matter how performed, it exemplifies this change of tense, since any present adjustment referring to a prior one always involves a passage of time.

Similarly, person. When the present speaker is referring to some other individual it may be necessary for him to designate accurately who has performed the speech now spoken of. In such cases there are definite changes in pronouns when they constitute a part of the reporter's adjustment.

When A refers to B's speaking to him, he says *You told me*, etc.; when he refers to his own speaking to B he naturally says *I told you*, etc. Also when a third party, C, is involved, A will repeat that *I told him (C) what I said to you* when speaking to B, whereas originally A said to B *I am telling you*. Does this not verify the view that person is a locus of the adjustment stimulus function as we have pointed out in Chapter XIV?

The nature of mood categories is also illuminated when considered in connection with secondary speech. Though English does not show this change as do other related languages, Curme says:

In the indirect statement we here usually, without regard to the auxiliary used in the direct statement, employ *shall* in the first person and *will* in the second and the third in accordance with the usual way of using these forms in the future tense (CEG 270).

We see at once that mood is a stylistic factor appropriate to particular situations and in no sense an expression of a speaker's inner state. Again, it is impossible to say that mood symbolizes reality or unreality. It turns out to be only the conventionalized way in which references to speech sometimes conventionally differ from the original speech.

CHAPTER XXII

NEGATION

NEGATION AS A SUMMARY OF GRAMMAR

THE grammatical treatment of negation exhibits in full measure the conventional background of linguistic principles. Further, since a summary of such principles admirably displays the contrast between conventional grammar and the psychology of speech adjustments, the discussion of negation constitutes a fitting conclusion to our grammatical studies.

In the foreground of grammatical principles stands, of course, the word-thing conception. Language is made to consist of words rather than adjustmental behavior. Then there is the correlated notion that words constitute symbols which stand for things or which express states of mind. And finally, speech or words in combination are regarded as logical propositions, with the result that utterances are converted into formal statements. We shall organize our discussion of negation with a view to this summary of grammatical principles.

THE NEGATIVE AS A WORD

Vendreyes provides us an excellent example of the treatment of negatives as words. In discussing the inflection of words by the negative character of the adverb *ne* which originally governed them, he regards words as definite things with particular meanings.

First of all, the French said: *Je ne vois point, Je ne mange mie, Je ne bois goutte*, etc., all sentences in which the negation was expressed by the adverb *ne*, the words governed by the verb being justified by the meaning: *Je ne vois pas un point, Je ne mange pas une mie*, etc. But the negative value communicated itself to the governed word so thoroughly that its real value was destroyed, and the word became a negative which can now be used with any verb to negative any fact (VL 166-7).

For a long time, Vendreyes says, utterances like *Je ne dors mie, Je ne souffle mie, Je n'ecoute mie* have been admissible, "though this could not possibly have occurred if the smallest consciousness of the value of the word (*mie*) had been preserved." Does not this statement overlook the fact that speech

does not consist of words, but rather of referential utterances which are indifferently patterned if only they serve as effective adjustments in particular situations?

In another place Vendreyes (VL 188) asserts that it is a mistake to treat the negation as a morpheme or simple suffix, for to do so would be to reduce its value. He would not, however, ask that it be considered as anything more than a word. And he even admits that in some languages negation is only a morpheme incorporated in a word. For example, Irish *domelin* = *I eat*, *nitoimlin* = *I do not eat*; Lithuanian *neszù* = *I carry*, *nèneszu* = *I do not carry*. Despite Vendreyes' hesitation, negatives are frequently featured as parts of words in grammar books. Especially prominent are negative prefixes, for example, *unhappy*, *never*, *disorder*, *incontinent*, *nonexistent*, *asocial*, etc. How far are such language descriptions from the actual performances of persons when they refer to what does not exist or what they do not do under certain circumstances!

The conception of negation as a specific speech part—namely, an adverb, also emphasizes the word-thing character of speech. As a speech part the negative is presumed to be an element which modifies or governs other words, such as a verb *He will not succeed*, a pronoun *Not I but he did it*, an adjective *Not many remained*, or a whole sentence *Many refused to attend*. This way of describing negation is entirely arbitrary. Basic to it is the assumption that words are unique symbolic elements of a sentence modifiable by other elements in the same sentence. It is only an extension of this idea that makes all the other elements of a combination modifiable by one member. But is speech of this nature at all? That it is not is evident from the fact that what are called positive sentences are really negative, *I told him that? O, yes, I will do that* and vice versa *No, I won't do that*. There is no escaping the fact that we have here adjustmental patterns operating in concrete referential situations.

A study of equivalent utterances as well as many other negative phenomena quickly reveals the antithesis between symbolic words and speech, even though that may not be the case in text study. When one says *I don't think you are right* instead of *I think you are not right*, there is no danger of anyone assuming that the speaker is saying he does not think or that he is not referring to the rightness of the hearer. The hearer's understanding of the reference, which is a function of the situation involved, will carry over to writing, though in some cases, when

the reader's reaction is to purely formal text not closely connected with speech, difficulties may arise. It may be suggested as a general principle that one understands writing or printing by a witting or unwitting conversion of it into speech, and this can be done always with limits set by the availability of speech conditions. It is obvious that grammarians who interpret texts do so by the method of supplying their own measure of speech context to the words involved.

The fact that in language it makes no difference in many cases whether we negate one word or notion, or a combination of words or notions (PG 329) substantiates the idea that we are not dealing with words and their symbolized or expressed notions. Jespersen says:

She is not happy may be analyzed either as a description of what she is, viz. not-happy (= unhappy), or as a negating of her being happy (she is-not, isn't, happy).

Can this fact be otherwise interpreted than as a negation of the word conception? We as listeners adapt ourselves to a situation and though we may sometimes misunderstand we generally adjust ourselves adequately.

Jespersen goes on to say "that if we add *very* we see the difference between *She is very unhappy* and *She is not very happy*." This introduces something beyond the problem of negative words or combinations of words. It brings up the problem of refinement of reference. We may or may not be interested in referring to specificities: *He deserved to be hated*, *He deserved not to be loved*, but when we are, it is not a question of negating a word or a word's notion.

THE NEGATIVE AS SYMBOL

An excellent illustration of the symbolization of language by the grammarian is found in Jespersen's correction of the logician concerning the word *not*.

Whereas the grammarian makes *rich* and *not rich* contradictory, Jespersen declares (PG 322) that the sentences *John is rich* and *John is not rich* are only contraries—that is, allow for a middle condition, *Perhaps John is rich*, *He may be rich*, *He is possibly rich*.

Can grammar correct logic? Is there any connection between the two? Logic in the sense of formal logic or logic of terms deals with symbols, whether words or other objects

taken to have (by connection) certain meanings or endowed with certain fixed meanings. Is there anything of this sort in speech?

Despite Jespersen's ambition to make his grammatical views ascend the lofty heights of logic, he himself realizes the great gap between the two, for not always does he overlook the difference between symbols and references.

Thus he admits that the words *rich* and *not rich* as terms are contradictory. Allowance at least is therefore made for a distinction between terms and speech. Moreover, despite the fact that Jespersen adheres so closely to words as to assert that *not* in *not good* and *not lukewarm* usually, though not always, means *less than*, he admits that the sentences *John is rich* and *John is not rich* allow for an intermediate condition, because it is really a question of the attitude of the speaker whether he puts John in the class of rich or not rich.

The mention of the speaker's attitude is very significant since this factor points toward a referential phenomenon and away from symbolic counters that merely stand for something else. It also brings to mind the question whether speech is a process of putting things into classes. We need not inquire whether actual speech phenomena can be used to improve formal logic nor whether we might have better logic if it were more psychological than symbolic. We are merely interested in pointing out the great differences between the two types of phenomena.

It is also important to notice that Jespersen makes questions intermediate between positive and negative assertions. The following three sets of utterances are given as examples of intermediate or indeterminate: *Is John rich? = Is John not rich? Will you have a glass of beer? = Won't you have a glass of beer? Perhaps he is rich = Perhaps he is not rich.* Questions, Jespersen says, are doubts with a request for resolution. In questions, then, the *not* is a meaningless symbol, since positive and negative mean the same thing.

Why will the grammarian cleave to symbolic ideology when he is obviously dealing with something else than symbols? The question is intensified when we notice that Jespersen goes on to say that the above is true only for unemotional questions. Emotional tones endow the questions *Will you have a glass of beer?* and *Won't you have a glass of beer?* with opposite meanings. Do we require any further discussion to indicate that

genuine linguistic references are in no sense to be confused with symbols standing for either things or ideas? Whether or not he realizes it, the grammarian must get down to actual adjustmental situations to see what utterances really signify as concrete happenings. In some actual situation *Will you go?* or *Won't you go?* are alternative patterns of adjustments without uncertainty or indefiniteness. The equivalence of the adjustment patterns *You marvelous, most adorable child, You little, devilish brat* should prevent us forever from talking of symbols when we are interested in speech.

The grammarian's preoccupation with symbols probably reaches its highest point when he concerns himself with such terms as *all* and *nothing*. Here is where he most flagrantly turns from the path of speech to pursue the wisp of logic. Such words the grammarian regards as standing alone with absolute meanings. Yet it is easy to contrast the situation in which such words are terms employed in the various relationships of formal logic with the circumstances in which they are really utterances in referential behavior patterns.

When the speaker says *All acknowledged his kindness* or *Nobody is going*, need he be doing anything else than referring in the first case to the fact that a few people acted in a certain way, or in the second, to a scant attendance at a party? Again, when someone says *He never gave it to me*, need he be referring to anything more than the fact that within a time period of three minutes someone did not hand him something? How easily the rigorous symbols of the logicizing grammarian turn into aspects of dialectal or colloquial speech style!

NEGATION AS EXPRESSION

Whether grammarians stress the word or symbol aspect of negatives they of course think of these as means by which states of mind or ideas are expressed. There are three specific versions of this conception.

The first may be described as the familiar negative mental state. According to this version negative words simply express negation as against any other type of meaning. This view involves no analysis of the fact, but only a specification of the function of negative word-symbols.

Then there is the conception of Van Ginneken (PLP 199-207) that negative words express a feeling of resistance opposed to

logical negation—that is, this writer believes that negative words do not express ideas, but feeling states. Aside from calling attention to this excellent illustration of one of the high lights of conventional grammar, we need not go further into the matter, since we have sufficiently discussed the idea of the existence of mental states and the weakness of the conception that such states are expressed by words (Chap. V).

For the third of these special expression ideas we turn to Vendreyes' notion (VL 134) concerning the perversive power of negative words to express the opposite to that intended or at least to be so understood by the hearer or reader. Positive words, he believes, express meanings or ideas more accurately and more powerfully than negative ones, and for this reason he declares that "like all morphemes, negation has no poetic value." To convey to the reader the opposite of a given impression it is not sufficient to attach a negation to the words describing it. To demonstrate this point he asks his reader to read a sentence to someone with the prediction that the hearer will notice the elements in the following order:

Real words stand out more prominently than morphemes, nouns than verbs, concrete than abstract nouns. The most striking words are those which immediately evoke a visual image particularly the names of persons and places (providing that the person questioned knows them).

A better example of the treatment of language as word-things which express meanings can hardly be offered. But in the meantime Vendreyes could not more effectively separate off such phenomena from actual speech adjustments. In the latter sphere obviously no such differentiations of the effectiveness of elements can be made, even if one could separate off distinct parts of the adjustment problem. The referential quality of utterances is in no sense derived from the expressive power of words, but, on the contrary, from the kind of situation in which the words or utterances are operating.

NEGATION AS A PROPOSITIONAL ELEMENT

The study of conventional grammars reveals a very scanty treatment of negation. The cause is not hard to locate. Since grammar is erected upon a sub-structure of word-things, the basic unit turns out to be a series of elements comprising a proposition. Now propositions have traditionally been thought of as positive assertions or the expression of positive ideas.

Consequently there is not much room given to negative sentences. In this sense the subject of negation stands on a par with answering speech, which likewise receives short shrift at the hands of the grammarian.

And yet it is obvious that in actual human adjustments denial and refusal are fundamental phenomena. How does the grammarian then take care of them?

In the first place, he makes room for negative utterances by relegating them to a place among the minor sentences. Utterances like *no* are placed under the heading of completive interjections (BL 176-7).

A more common way of treating negatives is to handle them as adverbs—particularly in the striking form of the sentence-adverb *not*. In this case the word *not* is presumed to modify a sentence or proposition by taking away its positive character. In such sentences as *The building is not finished yet*, *The work is not done*, the *not* element is presumed to modify the propositional structure.

Wundt's treatment of the negative (S 2, 205), short as it is, provides a link between the propositional and the expressive views. For him the negative is an element which expresses the subjective state of denial and thus like other propositions expressing subjective states—the conditional, optative, etc.,—contrasts with propositions expressing objective circumstances. Although the necessity for differentiating between objective and subjective propositions might be expected to suggest something to the proponent concerning the ineptitude of the propositional idea in the domain of speech, it does not do so.

THE LOGIC OF GRAMMATICAL NEGATION

If a negative turns an utterance into its contradiction then two negatives should cancel each other, leaving the utterance positive. That this is not the case troubles grammarians who cannot tear themselves loose from the ideas of formal logic. But it is not only the fact of being troubled that shows how strong is the hold of logic on grammar but likewise the various reasons given to explain the discrepancy.

Romantic scholars have attempted to save the day by attributing only a semi- or half-negation to each of the two words *ne* and *pas*. Van Ginneken (PLP 200) quite rightly criticizes the absurdity of this move. For in the first place these so-called

half-negatives operate alone and with full negative force. And in the second place, he likens this half-negative to a half-zero or a half-infinitive. His strictures only magnify the grip in which the grammarian is held by logic. It is because of such illogical logic that Van Ginneken himself turns away from logic to sentiments or feelings of resistance.

Jespersen solves the problem of double or multiple negation by asserting that language has a logic of its own, yet, while in language two negatives do not cancel each other as in mathematics, two negatives do and should result in a positive. This effect of double negation operates in two ways.

In the first place, the positive invariably results whenever two negatives really refer to the same idea or word. As examples he quotes *not uncommon, not infrequent, not without some fear*. In this case the cancellation is not complete, so that the utterances quoted are weaker than *common, frequent, with some fear*. Jespersen adds an interesting explanation of this—namely, the detour through the two mutually destructive negatives weakens the mental energy of the listener. To what length the grammarian goes in order to abide by his logical and word-theory traditions! Who has compared the relative consumption of mental energy in hearing the utterances *not infrequently* and *frequently*? But the grammarian will do anything rather than move on toward the study of adjustments and their conventionalization. If the utterance *I don't deny that he was angry* is weaker than *I assert that he was angry*—and this may be a doubtful proposition—is it not because of the actual circumstances in which the utterance is spoken and heard rather than weakening of energy? If the former utterance is not weaker than the second, may it not be for the same reason? Another question: How can anyone understand strength and weakness in any other terms than linguistic behavior adjustments?

The second type of cancellation is that in which two or more negatives are attached to different words. Jespersen culls these examples from representatives of popular language in literature: *Nobody never went and hinted no such thing, I can't do nothing without my staff*. He also refers to the widespread distribution of such phenomena in many languages. Here again Jespersen refuses to allow any lack of logic. Rather, he accounts for this by saying that this double negative becomes a habit in those languages in which the ordinary negative is comparatively

small in phonetic bulk—for example, *ne* or *n* in Old English, in French, in Slavic; *en* or *n* in Middle High (and Middle Low) German; *on* in Greek, *s* or *n* in Magyar. These initial sounds are easily attached to other words and their insignificance makes it desirable to sprinkle them through the sentence so they will not be overlooked (*sic*). They are therefore attached not only to the verb, but to other words also. Language thus turns out to be a set of building blocks put together to show to their best advantage! But there is also the psychological factor of mental energy.

It requires greater mental energy to content oneself with one negative, which has to be remembered during the whole length of the utterance both by the speaker and the hearer, than to repeat the negative idea whenever an occasion offers itself.

Such repetition is not illogical according to the grammarian but merely redundant. Rather than observe what language actually is and how it operates the grammarian goes to the length of not only making for himself a new logic, but a unique psychology as well.

NEGATION AS A PSYCHOLOGICAL PHENOMENON

We may now turn to the more explicit consideration of the nature of negation from a psychological standpoint. In formal terms psychological negation in language consists of a series of references to negative referents. Instead of referring to something that exists, or something one believes, agrees to, or acquiesces in, the speaker refers to the opposite. The exact manner in which he makes these references, like all linguistic phenomena, will naturally vary in consonance with all sorts of individual and social or conventional speech styles. In order to illustrate the nature of psychological negation we may consider several different situations. This means technically to enumerate some of the stimulus objects in which stimulus functions for negative references are localized.

Non-Existent Things—A declares *There is no such thing as a perpetual motion machine*—a typical negative utterance. But B declares *I am building such a machine*, whereupon A replies, *No*, or *It cannot be*. In the latter utterances there is a special characteristic of denial or refutation—a feature of allegatory situations or those in which there is a question on the part of one of the speakers. As the illustration indicates, for one of

the speakers there is no non-existent. As we have already pointed out, when we study speech adjustments we are not interested in the actual existence of the referent, but in the speech adjustment. Naturally the question of actual existence as envisaged by the speakers has its effect upon the speech events.

This effect can be observed in that form of negative adjustment¹ in which A specifically declares that the thing spoken of is not non-existent. For instance, he says *There is an ether*. Here perhaps the situation for speaking is more deeply rooted in a problematic or questionable situation than in the former illustration. There we had simply a positive and negative utterance opposed, while here the possibility of a change of reference with the development of differing convictions appears feasible.

In the field of speech, even more than in others, we must take account of the fact that aside from the withdrawal from absolutes there are all sorts of possibilities in utterance to be allowed for. We may therefore refer to a series of degrees in the non-existence of things spoken of. It is not a question always of *yes* or *no*, but how much, since speakers may refer to all sorts of contingencies.

Non-Existent Characteristics—The stimulus function for a negative reference may be localized in a characteristic of a thing as well as in the thing itself. For example, A asserts that the characteristics of perpetual motion, while not yet worked out for any existent object, might be made the characteristic of such an object. Another person may refer to the non-existence or impossibility of existence of such a characteristic.

Non-Occurring Events—In similar manner, speakers may refer to events that cannot happen or have not happened. A says *The thermometer went down to zero last night*, when actually it was ten above. Of course there is no ipso facto impossibility of such an event occurring, but actually it did not happen. B, who is better oriented, declares *No such thing (event) occurred* or could occur. In such situations the reference may be to an alleged past, present, or future phenomenon. The question of positivity or negativity enters only because of the conversation. Genuine speech situations are different from conventional grammatical ones in which A's utterance must be

¹ Obviously all adjustments are positive events. Accordingly the term negative adjustment merely symbolizes the kind of speech we are now discussing.

regarded as positive. For the psychology of speech it obviously makes no difference what the form of the adjustment is. For example, instead of saying *No such thing happened*, B says *It was ten above*.

Negative Relations—It is probably unnecessary to point out that any kind of stimulus object definable as the locus of a negative stimulus function may be a factor in a negative linguistic adjustment situation. Nevertheless we want to point out that whether we deal with relations between persons *Cleopatra was the sister of Antony*, or objects *The earth is farther from the sun than Saturn*, the same general description of negative references applies. In these relation examples we may assume that the conventional negative reference is employed: *C was not the sister of A*, *The E is not farther from the S than S*, but this need not be the case. Some will prefer to say *A was the lover of C* or *The E is closer to the S than S*.

Negative Behavior—In performing negative references to actions of persons speakers may affirm, deny, deplore, or celebrate the non-performance of some past, present, or future instance of behavior. In ordinary conventional situations the actions of persons constitute very fertile fields for negative speech, since such actions include beliefs, doubts, and opinions, as well as more explicit behavior. Because it is more difficult to determine the occurrence or non-occurrence of such activities they provide a more copious source for controversy.

Negative Speech References—A special case must be made of references to negative references. We have here an extension of a negative situation to include a speech link. A says *He (B) spoke truly when he said he made the offer*, but C denies this. Here the point is that A refers to a real connection between B's saying he made the offer and its occurrence, whereas C refers to the non-existence of that connection. In everyday language C calls B's utterance or assertion false. We may qualify B's utterance by saying that A ascribes to it the quality of truthfulness, while C asserts that it bears the quality of falsity.

There may, of course, be more than one speech link in a negative situation. For example, C says *B spoke falsely when he said that D told him he (D) made the offer*. This is a case in which the original speaker of our example (C) refutes an utterance with respect to an utterance (B's) concerning another utterance (D's). Theoretically there is no limit to the number

of such speech links in a negative situation. We reiterate once more that it is indifferent to us whether or not the speakers employ what are regarded as the conventional words to fit this kind of situation. We are interested only in the performance of referential reactions to adjustmental stimulus functions of the positive and negative variety. We may add too that here is a good place to observe the process of confusing the description with the described. To insist upon a conventional set of words is to run the risk of making this confusion. For example, we may describe a remark of C by quoting him as saying *No, B did not speak truly when he said he made the offer*, when in reality C said *Such an offer was only made by D*, but we should not overlook the difference between the two.

LANGUAGE ADJUSTMENTS, SYMBOLS, AND NEGATIVE FACTS

Our study of negation will be furthered by a comparison of the linguistic and symbolic treatment of negative facts. We repeat that the psychological negative constitutes a reference reaction to a negative stimulus object. As we have seen, this means for the psychologist that any object, whether or not it exists in reality, can be endowed by the interacting individual with a negative stimulus function. In a linguistic situation it is not necessary to investigate the actual existence of the object in which the stimulus function inheres. The essential feature of negativity lies in the reference to non-existence or non-occurrence.

This language adjustment situation is not to be confused with the symbolic relation to negative facts, even with the one so excellently described by Ogden and Richards. These writers regard a negative fact as a referent to a symbol or sign which does not belong to its allocated order (MM Appendix E). They adopt the obvious view that every symbol has a referent, since a symbol is one term in what must be at least a two-term relation. Hence the symbol (Charles I died on his bed) does not properly—in this case historically—stand for its referent (the scaffold-dying Charles). A negative fact then represents a dislocation of the symbolic relation.

We are not disposed at this point to enter upon the discussion of the propriety of the conception of a complex symbol. It is probable that complex symbols are always transcribed refer-

ences. Notice, too, that the relation in this instance is between a putative symbol and an actual event instead of another symbol. What we want to indicate is that by contrast with a symbolic negative, the referential negative, being an adjustment and not a relation of things, does not require any test or criterion of existence. While the linguistic adjustment always requires a referent—namely, a stimulus object—that stimulus object may be non-existent, but as we have said, any non-existent stimulus object has a stimulus function which is mutually dependent upon an action-pattern of the individual.

Now, of course, speech never occurs in a vacuum. It is always a feature of a particular kind of situation. Accordingly when one speaks of a negative fact under scientific auspices the utterance is controlled and limited by the scientific circumstances involved. Even in ordinary conversation when one utters a statement concerning the existence or non-existence of something, that utterance may be qualified as true or false, dependent upon its conformity between reference and referent. When one puts a symbol for one referent into relation with another, such a mixing of relations can only be a mistake, but not a case of truth and falsity, for that description belongs to the field of assertions and excludes symbolic relations, unless one arbitrarily confuses symbols with references and assertions concerning something with relations. Perhaps a dislocated relation is really a false assertion.

At this point we may distinguish between that phase of the linguistic situation pertaining to the circumstances under which the speaker speaks, and the one which constitutes the activity of reference. How different the latter may be from the former is indicated by the range of speech, which extends downward from scientific situations to sheer gossip or deceiving utterance.

CLASSES OF NEGATIVE REFERENCES

Our discussion of negative phenomena implies that it is tending toward the propositional to compress such references within the confines of assertion and denial. It is well to make this point explicit. In conventional grammar there is unquestionably this tendency, for the logical motive inevitably crops up.

At once we submit that negative references may occur in all sorts of referential situations. The adjustments to non-existing things and conditions we have treated sufficiently. It is these

that come under the class of assertion and denial. We have only to add references to what should not be done, either in the form of injunctions or as evaluations. In such cases we must guard against confusing references to one's own opinions and the essentially negative stimulus object. Negative references to the former belong to the class of assertions and denials.

NEGATION AND COMPARISON

When we are concerned with actual language adjustments instead of with logical or grammatical propositions, we are of course not limited to the two poles of positive and negative, but may have a whole host of intermediate situations. Positive and negative references are only two members of a large classificatory scheme of utterances.

One of the most interesting of the members of the series is the negative comparative. In this type of situation the speaker refers to an absence of some thing or condition within certain definite limits as, for example, its greater presence in some other thing or condition. It is this type of negative situation which correlates with the negative comparison of the conventional grammatical subject treated under that name.

To illustrate the different types of negative situations and the place of conventional grammatical comparison in the series we set up four divisions.

Positive and Negative—In this division we take the negative to be the simple reference of non-existence. As we have indicated, we have here a simple antinomy. The speaker simply refers to something opposed to the positive. Instead of referring to the aliveness or viability of some thing we refer to the opposite—its deadness.

Intermediates—We have already considered the type of situation in which the speaker refers to the absence or non-existence of some thing or quality from the standpoint, not of the negative pole on a scale, but some intermediate point.

Relatives—The reference in this situation is a little more definite than in the one above. The utterance *He is not alive* is made from a certain standpoint—that is, relative to something else than aliveness. The man is informed but not alive—not as agile and alert as he is intellectually capable. We may describe him as not alive in a certain sense.

Comparatives—Here the reference negates a thing, condition, or quality in a genuinely comparative way. By this is meant, for example, that the person is not alive relative to some other person who is more alive. Ordinarily the reference is patterned in the form of *not as alive as*, or *no liver than*.

As a final remark we point out once more that references as active adjustments in definite human conditions are not limited by the formalistic restrictions of logical statement. We must learn to observe the speaker interacting with his stimulus objects in a free referential way. Only in this manner can we actually seize hold of and describe the actual psychological adjustments which are speech.

SELECTED REFERENCES

HISTORY OF LANGUAGE STUDY

- Benfey, T. *Geschichte der Sprachwissenschaft*, (München), Cotta, 1869.
- Delbrück, B. *Einleitung in das Sprachstudium*, (Leipzig), Breitkopf u. Härtel, (3), 1893.
- Hankamer, P. *Die Sprache, ihr Begriff und ihre Deutung in 16. u. 17. Jahrhundert*, (Bonn), Cohen, 1927.
- Jespersen, O. *Language*, (N.Y.), Holt, 1917.
- Oertel, H. *Lectures on the study of language*, (N.Y.), Scribner, 1901.
- Pedersen, H. *Linguistic science in the 19th century*, (Spargo tr.), (Cambridge), Harvard U. Press, 1931.
- Steinthal, H. *Geschichte der Sprachwissenschaft bei den Griechen und Römern*, 2 vols., (Berlin), Dümmler, 1890-1.
- Thomson, V. *Geschichte der Sprachwissenschaft bis zum Ausgang des 19. Jahrhunderts*, (Pollak tr.), (Halle), Niemeyer, 1927.

LANGUAGE TYPES AND CHARACTERISTICS

- Adelung, J. C., and others. *Mithridates, oder allgemeine Sprachenkunde*, (Berlin), 4 vols., Vossische Buchhandlung, 1806-17.
- Beauzée, N. *Grammaire generale ou exposition raisonnée des elements necessaire du langage pour servir de fondement à l'étude du toute des langues*, (Paris), Delalain, 1767.
- Balbi, A. *Atlas ethnographique du globe, ou classification des peuples anciens et modernes d'après leurs langues*, 2 vols., (Paris), Rey et Gravier, 1826.
- Bleek, W. H. *Comparative handbook of Australian, African, and Polynesian languages*, (London), Kegan Paul, 1858.
- . *Comparative grammar of South African languages*, (London), Kegan Paul, 1862-69.
- Boas, F. *Handbook of American Indian languages*, (Washington), *Bur. Am. Eth., Bull.*, 40, Part 1, 1911, Part 2, 1922.
- Byrne, J. *General principles of the structure of language*, (London), Kegan Paul, (2), 1892.
- Drexel, A. *Gliederung der africanischen Sprachen*, *Anthropos*, 1924, 25, 19-20.
- Finck, F. N. *Die Haupttypen des Sprachbaus*, (Leipzig), Teubner, 1910.
- . *Die Sprachstämme des Erdkreises*, (Leipzig), Teubner, 1909.
- . *Die Klassifikation der Sprachen*, (Marburg), Elwert, 1901.
- Hervas, L. *Catálogo de las lenguas de las naciones conocidas, y numeración, division, y clases de estas segun la diversidad de sus idiomas y dialectos*, 6 vols., (Madrid), Ranz, 1800-5.
- Hovelacque, A. *La linguistique*, (Paris), Schleicher, 1876.

- Humboldt, W., von. Ueber die Verschiedenheit des menschlichen Sprachbaues, (Berlin), Calvary, (2), 1880.
- Kieckers, E. Die Sprachstämme der Erde, (Heidelberg), Winter, 1931.
- Lepsius, C. R. Standard alphabet for reducing unwritten languages and forming graphic systems to a uniform orthography in European letters, (London-Berlin), Hertz, 1863.
- Meillet, A., and Tesnière, L. Les langues dans l'Europe nouvelle, (Paris), Payot, 1928.
- Meillet, A., et Cohen, M. Les langues du monde, (Paris), Champion, 1924.
- Müller, F. Grundriss der Sprachwissenschaft, 4 vols., (Wien), Hölder, 1876-88.
- Sapir, E. The history and varieties of human speech, *Annual Report of the Smithsonian Institute*, 1912-13, 573-96.
- Sayce, A. H. Introduction to the science of language, 2 vols., (London), Kegan Paul, 1879.
- Schmidt, W. Die Sprachfamilien und Sprachenkreise der Erde, (Heidelberg), Winter, 1926.
- Starr, F. A bibliography of Congo languages, (Chicago), U. of Chicago Press, 1908.
- Steinthal, H., and Misteli, F. Charakteristik der hauptsächlichsten Typen des Sprachbaues, (Berlin), Dümmler, 1893.
- Thomas, C., and Swanton, J. R. Indian languages of Mexico and Central America and their geographical distribution, (Washington), *Bur. Ethn., Bull.* 44, 1911.
- Trombetti, A. Elementi di glottologia, (Bologna), Zanichelli, 1922-23.
- Uhlenbeck, C. C. Die einheimischen Sprachen nord-amerikas bis zum Rio Grande, *Anthropos*, 1908, 3, 773-79.
- Vater, J. S. Literatur der Grammatiken, Lexica und Woertersammlungen aller Sprachen der Erde, (Berlin), Nicolai, (2), 1847.
- Velten, H. V. Sprachliche Analyse und Synthese, *IF*, 1935, 53, 1-21.
- Whitney, W. D. Language and the study of language, (N.Y.), Scribner, 1867.

GENERAL LINGUISTICS

- Adam, L. La classification, l'object, la methode, les conclusions de la linguistique, (Paris), Maisonneuve, 1882.
- Bally, C. Le langage et la vie, (Paris), Payot, 1926.
- . Linguistique générale et linguistique française, (Paris), Leroux, 1932.
- Bloomfield, L. Language, (N.Y.), Holt, 1933.
- . Linguistics as a science, *Studies in Philol.*, 1930, 27, 553-57.
- Brugmann, K. Zum heutigen Stand der Sprachwissenschaft, (Strassburg), Trübner, 1885.
- Curtius, G. Zur Kritik der neuesten Sprachforschung, (Leipzig), Hirzel, 1885.
- Delbrück, B. Die neueste Sprachforschung, (Leipzig), Breitkopf u. Härtel, (3), 1894.

- De Laguna, G. *Speech*, (New Haven), Yale U. Press, 1928.
- De Saussure, F. *Cours de linguistique générale*, (Paris), Payot, 1931.
- Finck, F. N. *Die Aufgabe und Gliederung der Sprachwissenschaft*, (Halle), Haupt, 1905.
- Gabelentz, G. von der. *Die Sprachwissenschaft*, (Leipzig), Tauchnitz, (2), 1901.
- Gardiner, A. H. *The theory of speech and language*, (Oxford), Clarendon Press, 1932.
- Giesswein, A. *Die Hauptprobleme der Sprachwissenschaft*, (Freiburg i. Br.), Herder, 1892.
- Graff, W. L. *Language and languages*, (N.Y.), Appleton, 1932.
- Güntert, H. *Grundfragen der Sprachwissenschaft*, (Leipzig), Quelle u. Meyer, 1925.
- Jespersen, O. *Language*, (N.Y.), Holt, 1922.
- Le Roy, B. *Le langage*, (Paris), Alcan, 1905.
- Marouzeau, J. *La linguistique*, (Paris), Geuthner, 1921.
- Müller, M. *Lectures on the science of language*, 2 vols., (N.Y.), Scribner, 1891.
- Paget, R. *Human speech*, (N.Y.), Harcourt, Brace, 1921.
- Porzezinski, V. *Einleitung in die Sprachwissenschaft*, (Leipzig-Berlin), Teubner, 1910.
- Reichling, A. J. B. N. *Het woord*, (Nijmegen), Berkhout, 1935.
- Sandfeld-Jensen, K. *Die Sprachwissenschaft*, (Leipzig-Berlin), Teubner, (2), 1923.
- Sapir, E. *Language*, (N.Y.), Harcourt, Brace, 1921.
- . *The status of linguistics as a science*, *Language*, 1929, 5, 207-14.
- . *Philology*, *Encyclopedia Britannica*, 13th ed.
- Spitzer, L. *Hugo-Schuchardt Brevier*, (Halle), Niemeyer, (2), 1928.
- Vendreyes, J. *Language*, (N.Y.), Knopf, 1922.
- Zipf, G. K. *The psychobiology of language*, (Boston), Houghton Mifflin, 1935.

RELATION OF PSYCHOLOGY AND LINGUISTICS

- Delbrück, B. *Grundfragen der Sprachforschung*, (Strassburg), Trübner, 1901.
- Dempe, H. *Was ist Sprache?* (Weimar), Böhlau, 1930.
- . *Die Darstellungstheorie der Sprache*, *IF*, 1935, 53, 245-66.
- Hocart, A. H. *The psychological interpretation of language*, *Brit. J. Psychol.*, 1912, 5, 267-80.
- Mead, G. H. *The relation of psychology and philology*, *Psychol. Bull.*, 1904, 1, 375-91.
- Sütterlin, L. *Das Wesen der sprachlichen Gebilde*, (Heidelberg), Winter, 1902.
- Wundt, W. *Sprachgeschichte und Sprachpsychologie*, (Leipzig), Englemann, 1901.

SYMBOLS AND MEANING

Symbols

- Bentham, J. *The theory of fictions*, (N.Y.), Harcourt, Brace, 1932.
- Bentley, A. F. *Linguistic analysis of mathematics*, (Bloomington, Ind.), Principia Press, 1932.
- Bloomfield, L. Linguistic aspects of science, *Philosophy of Science*, 1935, 2, 499-517.
- Bühler, K. *Sprachtheorie*, (Jena), Fischer, 1934.
- . *Die Symbolik der Sprache*, *Kantstudien*, 1928, 33, 405-9.
- Cassirer, E. *Philosophie der Symbolischen Formen*, 3 vols., (Berlin), Cassirer, 1923-25-29.
- Darmestetter, A. *La vie des mots*, (Paris), Delagrave, (12), 1918.
- Husserl, E. *Formale und transzendente Logik*, (Halle), Niemeyer, 1929.
- Kantor, J. R. Language as behavior and as symbolism, *J. Philos.*, 1929, 26, 150-59.
- Ogden, C. K., and Richards, I. A. *The meaning of meaning*, (N.Y.), Harcourt, Brace, (2), 1927.
- Vaihinger, H. *The philosophy of "as if"*, (N.Y.), Harcourt, Brace, 1924.
- Weisgerber, L. *Vorschläge zur Methode und Terminologie der Wortforschung*, *IF*, 1928, 46, 305-25.

Meaning

- Baldwin, J. M. *Thought and things*, (N.Y.), Macmillan, vol. 2, 1906.
- Dewey, J. *Experience and nature*, (Chicago), Open Court, 1925.
- Gregory, J. O. The relation between the word and the unconscious, *Brit. J. Psychol.*, 1919, 1920, 10, 66-80.
- Latif, I. The physiological basis of linguistic development and of the ontogeny of meaning, *Psychol. Rev.*, 1934, 41, 55-85, 153-76, 246-64.
- Malinowski, B. The problem of meaning in primitive languages, in Ogden and Richards, *The meaning of meaning*, (N.Y.), Harcourt, Brace, (2), 1927.
- Otis, A. S. Do we think in words? *Psychol. Rev.*, 1920, 27, 399-419.
- Parsons, J. H. The psychology of "meaning" and its relation to aphasia, *Brain*, 1920, 43, 441-50.
- Bartlett, F. C.; Smith, E. M.; Thomson, G. H.; Pear, T. H.; Robinson, A.; and Watson, J. B. Symposium: Is thinking merely the action of language mechanisms? *Brit. J. Psychol.*, 1920, 11, 55-105.

Experimental

- Bean, G. H. An unusual opportunity to investigate the psychology of language, *J. Genet. Psychol.*, 1932, 40, 181-201.
- Brown, W. Growth of "memory" images, *Am. J. Psychol.*, 1935, vol. 47, no. 1, 90-103.
- Esper, E. A. A technique for the experimental investigation of associative interference in artificial linguistic material, *Lang. Mon.*, no. 1, Ling. Soc. of America, 1925.

- . A contribution to the experimental study of analogy, *Psychol. Rev.*, 1918, 25, 468-88.
- Markey, J. F. The place of language habits in a behavioristic explanation of consciousness, *Psychol. Rev.*, 1925, 32, 384-401.
- Powers, F. F. Psychology of language learning, *Psychol. Bull.*, 1929, 26, 261-74.
- Rexroad, C. N. Verbalization in multiple choice reactions, *Psychol. Rev.*, 1926, 33, 451-58.
- Smith, S., and Powers, F. F. The relative value of vocabulary and sentence practice for language learning, *J. of Soc. Psychol.*, 1930, 1, 451-62.
- Thumb, A., und Marbe, K. Untersuchungen über die Grundlagen der sprachlichen Analogie, (Leipzig), Engelmann, 1901.
- Thumb, A. Psychologische Studien über die sprachl. Analogiebildung, *IF*, 1907-8, 22, 1-55.
- . Psychologie und Sprachwissenschaft, *Germ. Rom. Monatsschrift*, 1911, 3, 1-15, 65-74.
- Wolfe, D. L. The relation between linguistic structure and associative interference in artificial linguistic material, *Ling. Mon.*, no. 11, Ling. Soc. of America, 1932.
- . The rôle of generalization in language, *Brit. J. Psychol.*, 1934, 24, 434-44.

PSYCHOLOGICAL ASPECTS OF LANGUAGE

General (Books)

- Ballard, P. B. Thought and language, (London), U. of London Press, 1934.
- Bourdon, B. L'expression des emotions et des tendances dans le langage, (Paris), Alcan, 1892.
- Delacroix, H. Le langage et la pensée, (Paris), Alcan, 1924.
- Delacroix, H., and others. Psychologie du langage, (Paris), Alcan, 1933.
- Dittrich, O. Grundzüge der Sprachpsychologie, I, (Halle), Niemeyer, 1904.
- . Die Probleme der Sprachpsychologie, (Leipzig), Quelle u. Meyer, 1913.
- Pillsbury, W. B., and Meader, C. L. The psychology of language, (N.Y.), Appleton, 1928.
- Steinthal, H. Einleitung in die Psychologie und Sprachwissenschaft, (Berlin), Dümmler, (2), 1881.
- Van Ginneken, J. Principes de linguistique psychologique, (Paris), Rivière, 1907.
- Wundt, W. Die Sprache, 2 vols., (Stuttgart), Kröner, (4), 1921.

General (Articles)

- Adams, S., and Powers, F. F. The psychology of language, *Psychol. Bull.*, 1929, 25, 241-60.
- Dewey, J. Knowledge and speech reactions, *J. Philos.*, 1922, 19, 561-70.

- Esper, E. A. The psychology of language, *Psychol. Bull.*, 1921, 18, 490-96.
- Kantor, J. R. Can psychology contribute to the study of linguistics? *Monist*, 1928, 38, 630-48.
- . An analysis of psychological language data, *Psychol. Rev.*, 1922, 29, 267-309.
- Mead, G. H. A behavioristic account of the significant symbol, *J. Philos.*, 1922, 19, 152-63.
- Morgenroth, K. Vorläufige Aufgaben der Sprachpsychologie, *Germ.-Rom.-Monatschrift*, 1912, 4, 5-17, 65-74.
- Sapir, E. Language as a form of human behavior, *English J.*, 1927, 16, 421-33.
- Weiss, A. P. Linguistics and psychology, *Language*, 1925, 1, 52-57.

Speech and Personality

- Allport, G. W., and Cantril, H. Judging personality from voice, *J. Soc. Psychol.*, 1934, 5, 37-55.
- Pear, T. H. Voice and personality, (London), Chapman-Hall, 1931.
- Niceforo, A. La personnalité et le langage, *Rev. de l'Inst. Sociologie*, 1929, 2, 317-60; 3, 371-610.
- Sapir, E. Speech as a personality trait, *Am. J. Sociology*, 1927, 32, 892-905.
- Scripture, E. W. The epileptic voice, *Vox*, 1921, 31, 70-78.

Abnormalities of Speech

- Gelb, A. Remarques générales sur l'utilisation des données pathologique pour la psychologie et la philosophie du langage, *J. de Psychologie*, 1933, 30, 403-29.
- Goldstein, K. Ueber Aphasie, *Neurol. u. Psychiatr. Abhandl.*, 1927, no. 6.
- . Ueber Aphasie, *Schweiz. Arch. f. Neurol. u. Psychiatr.*, 1926, 19, 3-38, 292-322.
- . L'analyse de l'aphasie et l'étude de l'essence du langage, *J. de Psychologie*, 1933, 30, 430-96.
- Gutzman, H. Sprachheilkunde (Berlin), Fischer, (3), 1924.
- Head, H. Aphasia and kindred disorders of speech, (Cambridge), Camb. U. Press, 1926.
- Kussmaul, A. Die Störungen der Sprache, (Leipzig), (4), 1910.
- Pick, A. Die agrammatischen Sprachstörungen, (Berlin), Springer, 1913.
- Scripture, E. W. Ataxia, aphasia, and apraxia, *J. Neurol. and Psychopath.*, 1920, 1, 124-30.
- Travis, L. E. Speech pathology, (N.Y.), Appleton, 1931.
- Weisenburg, T. A., and McBride, K. E. Aphasia, (N.Y.), Commonwealth Fund, 1935.
- Wilson, S. A. K. Aphasia, (London), Kegan Paul, 1925.

GENERAL GRAMMAR

- Brockelmann, C. Kurzgefasste vergleichende Grammatik der semitischen Sprachen, (Berlin), Reuther u. Reichard, 1908.
- Brugmann, K. Kurze vergleichende Grammatik der indogermanischen Sprachen, 3 vols., (Strassburg), Trübner, 1902-3-4.

- Brunot, F. *La pensée et la langue*, (Paris), Masson, 1922.
- Hjelmslev, L. *Principes de grammaire générale*, (Copenhagen), Danske Videnskab, Selskab, 1928.
- Hocart, A. M. Point of grammar and study in method, *Am. Anthropologist*, 1918, 20, 265-79.
- Jespersen, O. *The philosophy of grammar*, (N.Y.), Holt, 1924.
- Kalepky, T. *Neuaufbau der Grammatik*, (Leipzig), Teubner, 1928.
- Marty, A. *Untersuchungen zur Grundlegung der allgemeinen Grammatik und Sprachphilosophie*, (Halle), Niemeyer, 1908.
- Noreen, A. G., and Pollak, H. W. *Einführung in die wissenschaftliche Betrachtung der Sprache*, (Halle), Niemeyer, 1923.
- O'Leary, D. *Comparative grammar of the Semitic languages*, (N.Y.), Dutton, 1923.
- Paul, H. *Prinzipien der Sprachgeschichte*, (Halle), Niemeyer, (3), 1898.
- Sheffield, A. D. *Grammar and thinking*, (N.Y.), Putnam, 1912.
- Sonnenschein, E. A. *The soul of grammar*, (Cambridge), Camb. U. Press, (2), 1929.
- Sturtevant, E. H. *Linguistic change*, (Chicago), U. of Chicago Press, 1917.

GRAMMAR AND LANGUAGE LEARNING

- Asker, W. Does knowledge of formal grammar function? *School and Society*, 1923, 17, 109-11.
- Breymann, H., and Steinmüller, G. *Die neusprachliche Reform-Literatur von 1876-1909*, (Leipzig), Deichert, vols. 1-4, 1895-1909.
- Buchanan, M. A., and McPhee, E. D. *An annotated bibliography of modern language methodology*, (Toronto), U. of Toronto Press, 1928.
- Comenius, J. A. *Janua linguarum reserata*, (Leszno), 1631.
- Hagboldt, P. *Language learning*, (Chicago), U. of Chicago Press, 1935.
- Handschin, C. H. *Methods of teaching modern languages*, (Yonkers), World Book, 1924.
- Heybarger, A. *Jean Amos Comenius*, (Paris), Champion, 1928.
- Jespersen, O. *How to teach a foreign language*, (London), Allen-Unwin, 1904.
- Kappert, H. *Psychologische Grundlagen des neusprachlichen Unterrichts*, *Paed. Mon.*, vol. 15, 1915.
- Keatinge, M. W. *The great didactic of J. A. Comenius*, (London), Black, 1896.
- Locke, J. *Some thoughts concerning education*, (1692), *Works*, vol. 9, (London), Johnson, etc., 1801.
- Montaigne, M. *Of the education of children*, (1580), *Essays*, (Hazlitt ed.), (London), Reeves and Turner, 1877.
- Palmer, H. E. *The scientific study and teaching of languages*, (London), Harrap, 1917.
- Sayce, A. *Review of Otté's How to learn Danish*, *Nature*, 1879, 20, 93.
- Schoenherr, W. *Direkte und indirekte Methode im neusprachlichen Unterricht*, (Leipzig), Quelle u. Meyer, 1915.

- Sweet, H. The practical study of languages, (London), Dent, 1899.
 Thorndike, E. L. Influence of first-year Latin upon range in English vocabulary, *School and Society*, 1923, 17, 82-84.
 Viëtor, W. Der Sprachunterricht muss umkehren, (Leipzig), Reisland, 1905.

SEMANTICS

- Breal, M. Semantics, (N.Y.), Holt, 1900.
 Carnoy, A. La science du mot, (Louvain), Universitatis, 1927.
 Collin, C. S. R. Bibliographical guide to sematology, (Lund), Blom, 1914.
 Darmesteter, A. La vie des mots, (Paris), Delgrave, (12), 1918.
 Erdmann, K. O. Die Bedeutung des Wortes, (Leipzig), Avenarius, (3), 1922.
 Falk, H. Betydningslaere (semasiologi), (Oslo), Aschehoug, 1920.
 Gomperz, H. Weltanschauungslehre, vol. 2, Noologie, (Jena), Diederichs, 1908.
 Grasserie, R. de la. L'essais d'une semantique integral, 2 vols., (Paris), Leroux, 1908.
 Greenough, J. B., and Kitteredge, G. L. Words and their ways in English speech, (N.Y.), Macmillan, 1902.
 Hatzfeld, H. Leitfaden der vergleichenden Bedeutungslehre, (München), Hueber, (2), 1928.
 Hey, O. Die Semasiologie: Rückblick und Ausblick, *Arch. f. Lat. Lex.*, 1896, 9, 193-230.
 Kroesch, S. Analogy as a factor in semantic change, *Language*, 1926, 2, 35-45.
 Lehmann, H. Der Bedeutungswandel im französischen, (Erlangen), Deichert, 1884.
 Martinak, G. Psychologische Untersuchungen zur Bedeutungslehre, (Leipzig), Barth, 1901.
 Meisinger, O. Vergleichende Wortkunde, (München), Beck, 1932.
 Meyer, R. M. Bedeutungssysteme, *KZ*, 1910, 43, 352-68.
 Nyrop, K. Semantique, (Copenhagen), Gyldendal, 1913.
 Reisig, Chr. K. Vorlesungen über lateinische Sprachwissenschaft, (Leipzig), Haafe, 1839.
 Rozwadowski, J. von. Wortbildung und Wortbedeutung, (Heidelberg), Winter, 1904.
 Schmidt, K. Die Gründe des Bedeutungswandels, (Berlin), Hayn, 1894.
 Schwarz, H. Die Verschiedenen Funktionen des Wortes, *Z. F. Philosophie u. Philos. Kritik*, 1908, 132, 152-63.
 Sperber, H. Einführung in die Bedeutungslehre, (Bonn), Schroeder, 1923.
 Stern, G. Meaning and change of meaning, (Göteborg), Elanders, 1931.
 Stöcklein, J. Bedeutungswandel der Wörter, (München), Lindauer, 1898.
 Trench, R. C. On the study of words, (N.Y.), Macmillan, 1925.
 Waag, A. Bedeutungsentwicklung unseres Wortschatzes, (Lahr), Schauenberg, 1901.

- Weisgerber, L. Die Bedeutungslehre—Ein Irrweg der Sprachwissenschaft, *Germ.-Rom.-Monatschrift*, 1927, 15, 161-83.
- Welby, V. What is meaning? (N.Y.), Macmillan, 1903.
- Wellander, E. Studien zum Bedeutungswandel im Deutschen, 3 vols., (Uppsala), Universitets Årsskrift, 1917-23-28.

SYNTAX

- Blümel, R. B. Einführung in die Syntax, (Heidelberg), Winter, 1914.
- Brandenstein, W. Kritische Musterung der neueren Theorien des Nebensatzes, *IF*, 1927, 44, 117-36.
- Dittrich, O. Die sprachwissenschaftliche Definition der Begriffe Satz und Syntax, *Philosophische Studien*, 1902, 19, 93-128.
- Funke, O. Jespersen's Lehre von den "three ranks," *Englische Studien*, 1925, 60, 140-57.
- . Ein letztes Wort zur Rangstufenlehre Jespersen, *Englische Studien*, 1926, 61, 309-15.
- Havers, W. Handbuch der erklärenden Syntax, (Heidelberg), Winter, 1931.
- Jespersen, O. Die grammatische Rangstufen, *Englische Studien*, 1925, 60, 300-9.
- Lerch, E. Satzglieder ohne den Ausdruck irgend einer logischen Beziehung, *Germ.-Rom.-Monatschrift*, 1913, 5, 353-67.
- Nehring, A. Studien zur Theorie des Nebensatzes, *KZ*, 1931, 58, 118-58.
- Ries, J. Was ist Syntax? (Prag), Taussig, (2), 1927.
- . Zur Wortgruppenlehre, (Prag), Taussig, 1928.
- . Was ist ein Satz? (Prag), Taussig, 1931.
- Wackernagel, J. Vorlesungen ueber Syntax, (Basel), Birkhäuser, vol. 1, (2), 1926, II, 1924.
- Wegener, P. Der Wortsatz, *IF*, 1921, 39, 1-26.
- Ziemer, H. Junggrammatische Streifzüge im Gebiete der Syntax, (Colberg), Post, (2), 1883.

MORPHOLOGY

- Brugmann, K. *KVG*, vol. 2, 1903.
- Darmesteter, A. De la création actuelle des mots nouveaux dans la langue française, (Paris), Vieweg, 1877.
- . Traité de la formation des mots composés dans la langue française, (Paris), Delagrave, (2), 1894.
- Horn, W. Sprachkörper und Sprachfunktion, (Berlin), Mayer u. Müller, 1921.
- Kluge, F. Wortforschung und Wortgeschichte, (Leipzig), Quelle u. Meyer, 1912.
- Osthoff, H., und Brugmann, K. Morphologische Untersuchungen auf dem Gebiete der indogermanischen Sprachen, (Leipzig), Hirzel, 1878-1910.
- Tobler, L. Ueber die psychologische Bedeutung der Wortzusammensetzung, *Z. f. Völkerpsychol. u. Sprachwissenschaft*, 1868, 5, 205-32.

- Weisgerber, L. Vorschläge zur Methode und Terminologie der Wortforschung, *IF*, 1928, 46, 305-25.
- Wundt, W. Die Sprache, vol. 1, (Stuttgart), Kröner, (4), 1921.

PHONOLOGY

- Baudouin de Courtenay, J. Versuch einer Theorie der phonetischen Alternationen, (Strassburg), Trübner, 1895.
- Bloomfield, M. On the probability of the existence of a phonetic law, *Am. J. Philol.*, 1884, 5, 178-86.
- Gemelli, A. Recherches sur la structuration des paroles et des phrases, *Rapport lu au congrès de psychologie*, Copenhagen, 22-27 Aout, 1932.
- Gemelli, A. et Pastori, G. Recherches et nouveaux résultats dans l'étude des voyelles, *Rapport lu au congrès de psychologie*, Copenhagen, 22-27 Aout, 1932.
- Gemelli, A. e Pastori, G. L'analisi elletroacustica del linguaggio, (Milano), Vita e Pensiero, 2 vols., 1934.
- Grassman, H. Neben das ursprüngliche Vorhandensein von Wurzeln, *KZ*, 1863, 12, 81-110.
- Jespersen, O. Zur Lautgesetzfrage, *TZ*, 1887, 3, 188-217.
- Karsten, G. E. The psychological basis of phonetic law and analogy, *PMLA*, 1894, 9, 312-43.
- Müller, F. Sind die Lautgesetze Naturgesetze? *TZ*, 1884, 1, 211-15.
- Schuchardt, H. Ueber die Lautgesetze, (Berlin), Oppenheim, 1885.
- Scripture, E. W. Overlapping of speech sounds, 1935, 136-759.
- . Phonemes, *Nature*, 1935, 136, 261-2, 644-5.
- Swadesh, M. The phonemic principle, *Language*, 1934, 10, 117-29.
- Tarbell, F. B. Phonetic law, *Trans. Am. Philol. Assn.*, 1886, 17, 5-16.
- Tobler, L. Ueber die Anwendung des Begriffes von Gesetzen auf die Sprache, *Vierteljahrschrift f. wissenschaftliche Philosophie*, 1879, 3, 30-52.
- Twaddell, W. F. On defining the phoneme, *Lang. Mon.*, no. 16, Ling. Soc. of America, 1935.
- . Phonemes, *Nature*, 1935, 136, 644.
- Verner, K. Eine Ausnahme der ersten Lautverschiebung, *KZ*, 1875, 23, 97-130.
- Wechssler, E. Gibt es Lautgesetze? *Suchier Festgabe*, (Halle), Niemeyer, 1900.
- Wheeler, B. I. The causes of uniformity in phonetic change, *Trans. Am. Philol. Assn.*, 1901, 32, 5-15.
- See also Brugmann, Delbrück, and Curtius, under General Linguistics.

SPEECH PARTS

- Aristotle. De interpretatione (Edghill tr.), (Oxford), Clarendon Press, 1928.
- . De poetica (Edghill tr.), (Oxford), Clarendon Press, 1928.
- . De categoriae (Bywater tr.), (Oxford), Clarendon Press, 1924.
- Brøndal, V. Les parties du discours, (Copenhagen), Gads, 1928.

- Brunot, F. *La pensée et la langue*, (Paris), Masson, 1922.
- . *L'enseignement de la langue française*, (Paris), Colin, 1909.
- Glässer, E. Ueber den Stilwert des Artikels in romanischen, *Z. f. franz. Spr. u. Lit.*, 1933, 57, 31-66.
- Hermann, E. Die Wortarten, *Nachrichten v. d. Gess. d. Wissenschaften, Phil.-hist.-Klasse*, (Göttingen), 1928, 1-44.
- Lenz, R. *La oración y sus partes*, (Madrid), *Revista de Filología Española*, 1925.
- Owen, E. T. Hybrid parts of speech, *Trans. Wisconsin Acad. Sciences, Arts, and Letters*, vol. 16, pt. 2, 1908, 108-252.
- Schroeder, L. Die formelle Unterscheidung der Redetheile im griech. u. latein, (Leipzig), Köhler, 1874.

PERSON

- Beck, E. H. F. Die Impersonalien in sprachpsychologischer, logischer, u. linguistischer Hinsicht, (Leipzig), Quelle u. Meyer, 1922.
- Grimm, J. Ueber den Personenwechsel in der Rede, *Kleinere Schriften*, vol. 3, (Berlin), Dümmler, 1866.
- Wundt, W. *Die Sprache*, vol. 2, 40-60.

GENDER

- Adam, L. De la categorie du genre, *TZ*, 1884, 1, 218-22.
- . *Du genre dans les diverse langues*, (Paris), Maisonneuve, 1883.
- Brugmann, K. The nature and order of the noun genders in the Indo-European languages, (N.Y.), Scribner, 1897.
- Grasserie, R. de la. De l'expression de l'idée de sexualité dans le langage, *Rev. Philosophique de la France et de l'Etranger*, 1904, 58, 226-46.
- . De la categorie psychologique de la classification révélée par le langage, *Rev. Philosophique de la France et de l'Etranger*, 1898, 45, 594-624.
- Lohmann, J. *Genus und Sexus*, (Göttingen), Vandenhoeck u. Ruprecht, 1932.
- Madvig, J. N. Ueber das Geschlecht in den Sprachen, *Kleine Philolog. Schriften*, (Leipzig), Teubner, 1875.
- Meinhof, C. Grundzüge der vergleichenden Grammatik der bantu Sprachen, (Berlin), Reimer, 1906.
- Schmidt, W. Die Stellung der Pygmäenvölker in der Entwicklungsgeschichte des Menschen, (Stuttgart), Strecher u. Schröder, 1910.
- Tegnér, E. *On genus i svensken*, (Stockholm), K. Boktryckeriet, 1892.
- Wheeler, B. I. The origin of grammatical gender, *Trans. Philol. Soc.*, (London), 1899, 2, 528-45.
- Winkler, H. *Das grammatische Geschlecht*, (Berlin), Dümmler, 1899.

CASE

- Baker, H. G. Case in some earlier and later English grammars, *Papers Mich. Acad. Science, Arts, and Letters*, 1931, 14, 525-35.
- Blake, F. R. A semantic analysis of case, *Curme Vol. of Linguistic Studies, Lang. Mon.*, no. 7, 33-49, Ling. Soc. of America, 1930.

- Callaway, N. Concerning the number of cases in modern English, *PMLA*, 1927, 42, 238-54.
- Collinson, W. E. The "Soul of Grammar" and the "Philosophy of Grammar" with special reference to the question of English cases, *Mod. Lang. Rev.*, 1928, 23, 129-44.
- Delbrück, B. *Synkretismus*, (Strassburg), Trübner, 1907.
- Keilmann, J. *Dative und Akkusativ beim Verbum*, Giessen Diss., (Mainz), Falk, 1909.
- Marty, A. Die "Logische," "Lokalistische," und andere Kasustheorien, (Halle), Niemeyer, 1910.
- McKerrow, R. B. English grammar and grammars, *Essays and Studies by Members of English Associations*, vol. 8, 148-76, (Oxford), Clarendon Press, 1922.
- Nehring, A. Anruf, Ausruf, und Anrede, in *Siebs' Festschrift*, (Breslau), Marcus, 1933.

TENSE

- Agrell, S. Aspektänderung und Aktionsartbildung beim polnischen Zeitworte, (Lund), Ohlsson, 1908.
- Barnum, F. *Grammatical fundamentals of the Inuit language of Alaska*, (Boston), Ginn, 1901.
- Fries, C. C. The expression of the future, *Language*, 1927, 3, 87-95.
- Grasserie, R. de la. De la categorie du temps, (Paris), Maisonneuve, 1888.
- Hermann, E. Objektive und subjektive Aktionsart, *IF*, 1927, 45, 207-28.
- Heyse, K. W. L. *System der Sprachwissenschaft*, (Berlin), Dümmler, 1856.
- Koschmieder, E. Zu den Grundfragen der Aspekttheorie, *IF*, 1935, 53, 280-300.
- . *Zeitbezug und Sprache; Ein Beitrag zur Aspekt und Tempusfrage*, (Leipzig), Teubner, 1929.
- Porzig, W. Zur Aktionsart indogermanischer Präsensbildung, *IF*, 1927, 45, 152-67.
- Sapir, E., and Swadesh, M. The expression of the ending-point relation in English, French, and German, *Lang. Mon.*, no. 10, *Ling. Soc. of America*, 1932.
- Velten, H. V. Studien zu einer historischen Tempustheorie des indogermanischen, *KZ*, 1932, 60, 185.

NUMBER

- Bögholm, N. Outstanding features of English grammatical number, *JGM*, 1930, 211-24.
- Böthlingk, O. *Die Sprache der Jakuten*, (St. Petersburg), Kaiserlichen Akademie der Wiss., 1851.
- Brugmann, K. *Die Ausdrücke für d. Begriff der Totalität*, (Leipzig), Edelmann, 1894.
- Collinson, C. E. Some expressions of quantity in spoken English, *JGM*, 1930, 191-209.
- Curry, A. La categorie du dual dans les langues indo-européennes et chamito-semitiques, (Brussels), Lamertin, 1930.

- Humboldt, W. von. Ueber den Dualis, *Werke*, vol. 6, (Berlin), Reimer, 1843.
- Sapir, E. Totality, *Lang. Mon.*, no. 6, Ling. Soc. of America, 1930.

VOICE

- Finck, F. N. Der angebliche passivische Character des transitiven Verbes, *KZ*, 1907, 41, 209-82.
- Grasserie, R. de la. Du verbe comme générateur des autres parties du discours, (Paris), Maisonneuve, 1914.
- Uhlenbeck, C. C. Agens und Patiens im Kausussystem der indogermanischen Sprachen, *IF*, 1900, 12, 170-71.
- . Zur Casuslehre, *KZ*, 1906, 39, 600-3.
- . Zur Casuslehre, *KZ*, 1907, 41, 400-1.
- Velten, H. V. Sur l'évolution du genre, des cas, et des parties du discours, *BSL*, 1932, 33, 205-23.
- . On the origin of the categories of voice and aspect, *Language*, 1931, 7, 229-41.

MOOD

- Behaghel, O. Deutsche Syntax, vol. 3, 571-675, (Heidelberg), Winter, 1928.
- Field, H. F. Comparative syntax and some modern theories of the subjunctive, *Modern Philol.*, 1925-26, 23, 201-24.
- Frantzen, J. J. A. A. Ueber den Gebrauch des Konjunktivs im deutschen, (Gronigen), Noordhoof, 1920.
- Grasserie, R. de la. De la categorie des modes, (Louvain), Maisonneuve, 1891.
- Heyse, K. W. L. System der Sprachwissenschaft, Steinthal ed., (Berlin), Dümmler, 1856.
- König, J. L. Der Modus im Haputsatze, (Krefeld), Kunte, 1833.
- Låftman, E. Verbets modus i indirekt anföring i modern tyska, (Stockholm), Bonnier, 1919.
- Wüllner, F. Die Bedeutung der sprachlichen Kasus und Modi, (Münster), Coppenrath, 1827.

SECONDARY SPEECH

- Behaghel, O. Ueber die Zeitfolge der abhängigen Rede im Deutschen, *Pfeiffers Germania*, 1829, 24, 83-88.
- . Deutsche Syntax, vol. 3, 694-711, (Heidelberg), Winter, 1928.
- Bögholm, N. Oratio recta u. Oratio obliqua, *Englische Studien*, 1912, 44, 81-96.
- Herdin, E. Studien ueber Bericht und indirekte Rede im modernen Deutschen, (Uppsala), Almqvist och Wiksell, 1905.
- Lorck, E. Die erlebte Rede: Eine sprachliche Untersuchung, (Heidelberg), Winter, 1921.
- Tobler, A. Vermischte Beiträge zur französischen Grammatik, zweite Reihe, (Leipzig), Hirzel, 1912.
- Walzel, O. Von erlebter Rede, *Z. f. Bücherfreunde*, 1924, 6, 17-28.

NEGATION

- Ammann, H. *Die menschliche Rede*, 2 vols., (Lahr), Schauenburg, 1925, 1928.
- Delbrück, B. Germanische Syntax I: Zu den negativen Sätzen, *Abh. d. Sachs. Ges. Wiss.*, 1910, 28, 1-64.
- Demos, R. A discussion of a certain type of negative proposition, *Mind*, 1917, 26, 188-96.
- Jespersen, O. Negation in English and other languages, (Copenhagen), *Danske Videnskab. Selskab, Hist.-fil.-med.*, I, 1917, 5, 1-151.
- Johnson, W. E. Analysis of thinking, *Mind*, 1918, 27, 1-22, 133-52.
- Lerch, E. Die halbe Negation, *Die Neueren Sprachen*, 1921, 29, 6-45.

SUBJECT INDEX

- Abstractions**, interfere with grammar as science, 7 ff.; grammatical data as, 17 f., 32; in historical grammar, 41; in grammar organization, 99 ff.; in word-ranking, 140; phonetic, 159 f.; and the speech parts problem, 181 f.; in person, 201; in case, 218 ff.; in tense, 236 f., 240; and grammatical number, 251.
- Acquisition**, linguistic, 59.
- Actions**, transformed into word things, 7, 14 ff.
- Active voice**, 261.
- Adjectives**, as psychological behavior, 187.
- Adjustment stimulus**, in language interactions, 76; in syntax, 129 f.; and speech parts, 185 ff., 196; in voice, 267 ff., 270 ff.
- Adjustments**, non-verbal, 62.
- Adverbs**, as references to condition, 188 f.; negative, 306.
- Affective behavior**, and emotive language, 36; and voice, 270 f.
- Affective language**, 36.
- Affixative languages**, 88.
- African speech**, 273.
- Agglutination**, 89.
- Aktionsart**, 246 f.
- Algonquin**, 208.
- Alphabet**, the, and phonology, 159.
- Amerindian speech**, 9, 154, 158, 196, 200, 208, 226, 273, 275.
- Analysis**, 90.
- Andaman**, 208.
- Analytic language**, 92.
- Answering speech**, grammarian's neglect of, 34; conditioned by person spoken to, 59; as bistimulational, 73 f.; and meaning, 123; and the ellipsis dodge, 144; and utterance type, 156; and speech parts, 190; as affirmation and denial, 194; analysis of speech parts in, 196; as references to speech, 297; and negation, 300.
- Anthropology**, as setting for speech study, 106.
- Aorist**, the, 245.
- Arabic**, 39, 91, 177.
- Articles**, 194.
- Artificial language**, 25.
- Aspect**, 246 f.
- Athabaskan**, 207, 244.
- Australian speech**, 226.
- Auxiliary stimulus**, in language interactions, 76; as symbolic factor of speech, 130 f.
- Bantu**, 91, 208^f.
- Basque**, 275.
- Bavarian**, 257.
- Beauty in speech**, 40 f.
- Behavior**, vs. things, 64; as bridge between language and symbols, 66; and verbal references, 187 f.
- Behavior acquisition**, influence of, upon language, 93.
- Behavior analysis**, and derivation of word units, 155 f.
- Behavior institutions**, 86.
- Behavior patterns**, and speech origin, 43.
- Behavior segments**, built up, 71 f.; linguistic, 75 f.
- Behaviorism**, and language, 106.
- Biological conditions**, and individual speech patterning, 84.
- Body and mind**, excluded from organismic psychology, 73; no division of, by Greeks, 100 f.; in psychological dualism, 104.
- Bulgarian**, 21, 257.
- Cambodgian**, 91.
- Case(s)**, disagreement concerning, 4; English system of, 38; problem of, 218; and classical grammar, 218; and the thing-motive, 219 f.; symbolic and expressive influences upon, 220; philosophic motive in, 221; theories of, 221 ff.; as linguistic behavior, 225 ff.; and Wundt's three stage language

- evolution, 226; word thing and psychological. . . ., 226 ff.; equal number of, in all languages, 227; lack of objective, psychological position in study of, 227 f.; how many. . . ., 228; and speech parts, 229 f.; as reference to interconnection of transpiring things, 229 f.; and gender, 230; and prepositional groups, 230 ff.; and voice, 273.
- Categories, logical as origin of speech parts, 181 ff.; and mood definition, 279 f.
- Celtic, 47 n.
- Change, linguistic, 41 f., 56.
- Chechen, 209.
- Chinese, 9, 88, 89, 91, 150, 158, 164, 183, 207, 219, 220, 228, 257, 275, 287, 289.
- Chinook, 9, 158, 208, 274.
- Chippeway, 200 f.
- Civilizational pattern, vs. logic, 38 f.; as conditioner of speech, 39, 54 f., 86; morphology as, 156; in phonology, 164; and speech parts, 195; and gender, 212 f., 217; in case, 225 f.; in voice, 276; in mood, 290.
- Civilizational equipment, as factor in language responses, 227.
- Civilizational factors, see Cultural factors.
- Classical philology, influence upon linguistics, 9.
- Clause ranking, 140.
- Collectives, 256, 258.
- Common number, 253 f.
- Communication, scientific and linguistic, 35.
- Comparative grammar, 37 ff.
- Comparison of languages, 157 f.
- Compartmental grammar, difficulties of, 108 ff.
- Compound speech parts, 196 f.
- Concept heaping, 90.
- Confusion of grammatical theory, 5 ff.
- Conjunctions, 190 f.
- Consonance, 39 f.
- Conventional verbal language, 28.
- Conversation, degrees of, 27; and the symbolic conception, 62; bistimulational nature of, 74; as pure referential language, 78; as communicative, 79; as subject-matter of psychological syntax, 128.
- Copula, the, as problem of conventional syntax, 142; in psychological grammar, 142; as a speech part, 194 f.
- Cultural institutions, as social impedimenta, 85 f.; as data of social psychology, 86 f.; linguistic, 87 ff.; origin of, and gender, 214; in grammatical number, 257 f.
- Cultural factors, in development of speech, 59; in speech patterning, 213, 217.
- Cultural speech patterning, 59, 84 f., 135 f., 156, 195, 212 f., 257 f., 274 f., 290.
- Danish, 171, 237, 281.
- Dative, in English and Latin, 219, 227.
- Denial, as negative utterance, 306, 312 f.; as expressing subjective states, 306.
- Description, confused with described, 9, 167, 294, 311; and reference, 34 f.
- Descriptive grammar, 33 ff.
- Dialect, origin of, 42 f.
- Direct speech, 292 ff.
- Discourse and oration, 27 f.
- Discursive speech, as complex reference, 185.
- Dissonance, 39 f.
- Dead language, 22 ff.
- Drama of speech, 128 f.
- Dual and trial, rareness of, 250, 251; as speech pattern, 257.
- Dualism, origin of, in Alexandrian period, 102 f.; Cartesian. . . , 103 f.; and post-Cartesian psychophysics, 104; and present day physiological psychology, 104; and linguistics, 104 f.
- Dutch, 164, 174.
- Effective and affective language, 36 f.
- Effective behavior, and voice, 270.
- Egyptian, 23.
- Ellipsis, conception of, 144;
dodge, 195.
- Emotive language, 36 f.
- Empfindungsverba*, 270.

- English, 5, 20, 37 f., 44, 89, 90, 91, 92, 96, 114, 124, 128, 150, 157, 158, 160 f., 173 f., 194, 197, 200, 208, 217, 218 f., 220, 227 f., 228, 232 f., 237, 239, 240, 243, 245, 248 f., 253 f., 256, 257 f., 277, 281 f., 284, 286, 287, 289, 299, 308.
- Eskimo, 207, 243 f., 257.
- Evolution, Wundt's explanation of language through, 51; speech style and linguistic . . . , 158.
- Exclamations, conventional treatment of, 34.
- Explanation, in conventional grammar, 43 f.; in psychological grammar, 44 f.; in linguistic happenings, 55 f.
- Expression motive, and the sentence as speech unit, 133; and moods, 280.
- Expression technique, 89.
- Expression theory, in explanation of speech, 58 f.; and symbolism, 70.
- Expressive vs. communicative language, 79.
- Faculty psychology, in language study, 48; opposed by Steintal, 48 f.
- Feelings, and the translation theory, 58; and negative words, 304 f.
- Finite verb, 142 f.
- Finnish, 128; case numbers in, 228; and English, 232 ff.
- Finn-Ugrian, 182 f.
- Folk souls, and language origin, 47.
- Form languages, 89.
- Formless languages, 88 f.
- French, 20, 37, 55, 87, 91, 92, 128, 154, 157, 164, 170, 173, 210, 246, 281, 286, 289, 300, 307 f.
- Functional vs. morphological language, 78 f.
- Gaelic, 26.
- Gender, and sex, 33; as a special language institution, 92; linguistic progress in, 207; survey of, 207 ff.; anomalies of, 209 f.; lacking in referential character, 209; as a classificatory phenomenon, 210 f.; cultural ascription theory of, 211; classifying instinct theory of, 211 f.; morphological analogy theory of, 212; phonetic congruence theory of, 212; as social patterning, 212 f.; and cultural institutions, 214; as actual sex references, 214 f., and individuality of reference, 216; psychological vs. grammatical, 216; points to non-symbolic character of speech, 217; and case, 230.
- Genitive, the, and voice, 266.
- Genuine vs. spurious language, 19 ff.
- Georgian, 274, 277.
- German, 20, 23, 39, 44, 55, 87, 90, 92, 116, 153, 157, 164, 170, 173, 175, 176, 208, 209 f., 216, 245, 257, 258, 274, 281, 286, 289, 307 f.
- Gestures, and linguistic behavior, 7; and symbols, 62; ignored by phonologists, 160; as simple references, 184; as substantives, 185 f.; and speech parts, 190; and tense, 244.
- Gothic, 22, 47 n., 176.
- Grammar, as science, 1 ff.; confusion in field of, 5 ff.; and the speech parts problem, 5 ff.; influence of logic upon, 8 ff.; an autonomous science, 15 f.; not exclusively psychological, 16; psychological and conventional, 31 ff.; and language learning, 32 f.; descriptive, 33 ff.; comparative, 37 ff.; psychological and philological, 37 f.; normative, 40 f.; historical, 41 ff.; explanatory, 43 f.; application of distinction between scientific and grammatical, 45; psychology of, 84 ff.; psychological interpretation of, 96; fourfold organization of, 99 ff.; modifications in arrangement of, 110 ff.; and lexicology, 149 ff.; summarized by negation, 300; and logic, 302 f.
- Grammatical categories and secondary speech, 298 f.
- Grammatical logic, 278 f., 302 f.
- Grammatical ranking, 139 f.
- Greek, 9, 20, 22, 46 n., 88, 92, 176, 257, 264, 275, 280, 286, 307 f.
- Greenlandic, 90, 257, 274, 275.
- Group, the, psychological vs. sociological, 86 f.
- Group institutions, see Institutions.

- Hamitic, 208.
 Hearer, the, see Listener.
 Hearer motive, and the sentence as unit of speech, 133 f.
 Heard speech, as stimulus, 67; understanding in, 118 f.
 Hebrew, 21, 25, 26, 91.
 Herero, 157.
 Historical grammar, 41 ff.
 Hittite, 22.
 Holophrastic utterance, 186, 196.
 Humanism, as origin of symbol-expression theory, 101 ff.
 Humanistic conditions, in analysis of linguistic happenings, 56.
 Hungarian, 257, 258.
 Hupa, 244.
- Ideas, no transfer of, 75; and gender, 213; and grammatical number, 250; and negation, 304 f.
 Imitative symbolism, 170 ff.
 Imperative, the, and voice, 273; and mood, 286, 287; and the subjunctive, 288.
 Implicit behavior, and voice, 271 f.
 Incorporation, 89.
 Indicative, the, in English, 286; as expressing reality, 287; Jespersen's notion of, 289.
 Indirect speech, 291 ff., 294 ff.
 Individual speech patterning, 84.
 Indo-European, 9, 175, 176, 195, 212, 223, 226, 228, 244, 262, 275, 276.
 Infinitive, the, and mood, 287.
 Inflexional languages, 88.
 Inorganic languages, 88.
 Instinct, and gender, 211 f.
 Institutions, social or group, 85 f.; as linguistic responses, 86; and social psychology, 86 f.; general linguistic, 87 ff.; vocabulary, 87 f.; special language, 91 ff.; as language stimuli, 93.
 Intention, considered main feature of speech by Porzig, 111 f., vs. meaning, 121 f.; and volition, 274.
 Interactional psychology, see Organismic
- Interactional setting, as condition of language response, 77; as syntactic factor of speech, 131 f.
 Interjections, traditional treatment of, 34; in affective situations, 36; Delbrück's theory of, 52; and interactional setting, 132; criteria of, 191 f.; as completive, 306.
 Interpersonal speech, and speech parts, 189 f.
 Interrogations, conventional treatment of, 36; *who* and *what*, 199 f.
 Irish, 301.
 Iroquois, 208.
 Irregularities, morphological, 151.
 Italian, 91, 92, 158, 197.
- Knowing, vs. meaning, 122.
- Language, bias of a particular, 9; and mentalistic psychology, 10; primitive and civilized, 12 f.; as action and things, 13 f.; adjustmental factors of, 15 ff.; types of, 18 ff.; genuine and spurious, 19 ff.; as tools and instruments, 19; and linguistic styles, 19 f.; and literature, 20; and word constructions, 20 f.; and verbal formulae, 21; and liturgical speech, 21 f.; living and dead, 22 ff.; and linguistic fossils, 22 f.; nascent, 24 ff.; artificial, 25; revived, 25 f.; as linguistic adjustments, 26 ff.; and conversation, 27; conventional verbal, 28; and speech, 30; and nature, 33 f.; ineptness of, 35; as psychological adjustment, 35; and figures of speech, 35; affective and effective, 36 f.; as symbolization, 36; consonance and dissonance of, 39 f.; origin of, 42 f., 46 f.; organic, 47 f.; not dependent on individual mind, 48; Wundtian evolutionary theory of, 51; faulty viewpoints concerning, 57 ff.; symbolic theory of, 59 f., 82; and purpose, 67 ff.; social character of, 68; and objective psychology, 73; bistimulational character of, 73 ff.; distinctly referential, 75; indirect, 77 f.; mediate and merely referential, 78; morphological vs. functional,, 78 f.; expres-

- sive and communicative, 79; referor and referee . . . , 79 f.; institutional, 86; general pattern of, 88 ff.; classification of, 88 ff.; simple pure relational, 90; complex pure relational, 90; simple mixed relational, 90 f.; complex mixed relational, 91; social aspect of, overemphasized, 94; individual nature of, 95 f.; and dualism, 104 ff.; and behaviorism, 106 f.; as word symbolism, 117 f.; and understanding, 118; as names, 154 f.; comparison of, 157 f., 200; comparative effectiveness of, 226 f.; and time distinctions, 245 f.
- Language adjustments, vs. conventional linguistics, 31 ff.; autonomous, 60 f.; vs. symbolic situation, 60 f., 65; and purpose, 67 f.; as indirect behavior, 77 f.; and linguistic patterning, 84 f.; common to all people, 95.
- Language evolution, and voice 275 ff.
- Language institutions, 91 f.
- Language pattern, individual, 84; cultural, 84 f.; and voice, 273 ff.
- Language study, early period of, 46 ff.; and developments in organic chemistry and biology, 47; and early scientific psychology, 48 ff.; need for psychologist's and linguist's coöperation in, 55 f.
- Language systems, and speech parts, 195.
- Language things, 7 f., 11, 23, 42, 56, 59, 105 f.
- Latin, 5, 9, 20, 21, 22, 38, 42, 46 n., 88, 90, 92, 96, 176, 197, 207, 218 f., 227, 228, 236 f., 245, 281, 286.
- Learning to speak, 59, 75.
- Letter writing, 28.
- Lexicology, and grammar, 149 ff.
- Limitation in speaking, 226 f.
- Linguist, the, his opposition to psychology, 46 ff.; and Wundtian psychology, 52 f.
- Linguistic adjustments, as data of grammar, 15 f.; three factors of, 14 f.; forms of, 26 ff.; and correctness of speech, 41; triadic relationship in, 73; as mediating non-linguistic action, 74; as distinctly referential, 75; patterns of, 135 f.; vs. morphological irregularities, 151; not static words, 152; and study of sound changes, 174 ff.
- Linguistic behavior segment, analysis of, 75 ff.; as indirect adjustment, 77 f.
- Linguistic behavior situations, 80 f.
- Linguistic change, problem of, 41 f.; explained by Wundt and Delbrück, 52; Bredsdorff's explanation of, 53; as artifact, 56; psychology of, 174 ff.
- Linguistic etiquette, 41.
- Linguistic evolution, and speech style, 158.
- Linguistic fossils, 4, 22 f.
- Linguistic institutions, 87.
- Linguistic interactions, phonological, 163 f.
- Linguistic literality, 157.
- Linguistic origins, 42 f., 46 f.
- Linguistic styles, vs. actual speech, 19 f.; as interpreted by grammarian and psychologist, 40; and speech studies, 156 f.
- Listener, the, and symbol problem in language, 62 f.; in the speech event, 74; syntax of, 141.
- Literature and language, 20.
- Liturgical speech, 21.
- Living language, vs. dead . . . , 22 ff.; formless aspect of, 26 f.; and grammatical language, 28; adjustmental factor of, 31 f.; not fixed entity, 60, 95 f.; and problem of meaning, 117 f.; interpretation of, 117; four syntactic aspects of, 129 ff.; not word units, 151.
- Locomotor behavior and voice, 271.
- Logic, influence of, upon grammar, 8 f.; and speech, 38, 105; universal . . . , and grammar, 94 f., 127; Aristotelian, 100, 278 f.; confused with speech pattern, 136; and the problem of person, 201 f.; and case, 221; and tense, 240; as source of mood history, 278 f.; and the problem of negation, 302 f., 306 ff.
- Logical categories, as origin of speech parts, 181 f.
- Magic, of words, 116; of number, 250.
- Magyar, 257 f., 307 f.

- Mass words, 254 f.
- Mathematical vs. grammatical number, 253.
- Meaning, in symbolic situation, 66; overlooked by grammarian, 99; and semantics, 113 f., 115; in living language, 117 f.; as condition of speech situation, 119 f.; psychology of, 120 ff.; traditional conceptions of, 120 f.; behavioristic conception of, 121; organismic conception of, 121 f.; vs. intention, 121 f.; vs. knowing, 122; and speech behavior, 122 f.; in symbolic situations, 123 f.; and case, 220, 224; and voice, 265; as criterion of mood, 283 ff.
- Mediate language, vs. pure referential, 78.
- Menominee language, 173 f.
- Mental states, as basis of Steintal's Volkgeist, 48 f.; and moods, 282; and negation, 304 f. See also *Psychic processes*.
- Mentalistic psychology, disservice of, 10 ff.; misconceptions arising from, 57 ff., 66; as basis for confusion of language and symbols, 66 f.; and grammar organization, 99 ff.; and traditional meaning conceptions, 120 f.
- Metaphor, 35.
- Mimicry, vocal, not speech, 293.
- Mind, and language facts, 55; for Aristotle, 100 f.
- Misconceptions, linguistic, 57 ff.
- Mood, confusion concerning, 278; historical background of, 278 f.; definition of, 279 f.; form or symbolic criterion of, 281 f.; . . . , pure expression criterion of, 282 f.; four English types of, 282 f.; meaning criterion of, 283 ff.; purpose criterion of, 285; number of . . . s, 285 f.; correlated with thought and reality, 287 f.; and tense, 288; existence of, 288 f.; as utterance types, 290; and secondary speech, 299.
- Morpheme, the, and negation, 301.
- Morphological vs. functional language, 78 f.
- Morphology, as a grammatical branch, 99; vs. syntax, 109; as word architecture, 147; and word compounding, 150; irregularities of, 151; as creator of linguistic artificialities, 152 f.; as cultural speech style, 156.
- Motivation, as condition of speech, 191.
- Nahuatal, 88, 90, 273.
- Naming, and derivation of word units, 154 f.
- Natural symbolism, 169 f.
- Naturalism, Greek, vs. mentalism, 100 ff.
- Nature and language, 33 f.
- Negation, as a summary of grammar, 300; as expression, 304 f.; as a propositional element, 305 f.; logic of, 306 ff.; double or multiple, 307; as a psychological phenomenon, 308 ff.; and non-existent things, 308 f.; and non-existent characteristics, 309; and non-occurring events, 309 f.; and negative relations, 310; and negative behavior, 310; and negative speech references, 310 f.; linguistic and symbolic treatment of, 311 f.; referential classes of, 312 f.; and comparison, 313; types of, 313 f.
- Negative, the, as a word, 300 f.; as a morpheme, 310; as a specific speech part, 301; as symbol, 302 ff.; as expressing ideas, 304 f.; as expressing feeling, 305; as expressing oppositeness, 305; as a propositional element, 305 f.; double or multiple, 307; psychology of, 308 ff.; symbolic and linguistic, 311 f.; reference classes of, 312 f.; comparative forms of, 313 f.
- Non-existent things as referents for negative references, 308 f.
- Non-psychological actions as stimuli, 272.
- Normative grammar, 40 f.
- Norwegian, 91.
- Noun, the, confusion concerning, 7; as a name, 182; as a necessary speech part, 183; connected with case, 229; and the passive, 276.
- Number, as a special language institution, 92; in pronouns, 199 f.; expressive motive in, 250; magic of, 250; semantic and real . . . , 251; and word prece-

- cupation, 251 f.;, categories without number, 253 ff.; *we*, 253, 259; common, 253 f.; and mass words, 254 f.;, without number words, 255 f.; and ordinary plural, 256; and collectives, 256, 258; references of, vs. categories of, 256; grammatical, 257 f.; as speech pattern, 257 f.; actual references to, 258 f.; psychology of, 259 f.
- Numerals, 193.
- Objective psychology, and Aristotle, 101; and the hearer, 141; and the phoneme, 162; emends the speech-parts conception, 184 ff.; regards seeing and hearing interactions as active, 272; as basis for studying moods, 290. See also Organismic . . .
- Old English, 307 f.
- Old Persian, 257.
- Old Slavonic, 21, 257.
- One and many, 251, 253.
- Oration, 27 f.
- Organic nature of language, 47 f.
- Organismic psychology, nature of, 71 ff.; and psychic processes, 73; and mind-body distinction, 73; and meaning, 121 f.
- Organs of speech, 13, 53 f.
- Origin of language, 42 f., 46 f., 51.
- Original language study, 156 f.
- Paiute language, 148.
- Pamphleteering, 28 f.
- Papuan, 226.
- Participles, as verbal, 188; and mood, 285.
- Parts of speech, see Speech parts.
- Passive voice, 261 ff.
- Persian, Old, 257.
- Person, grammarians' agreement concerning, 198; factual basis of, 198; grammatical vs. psychological,, 199; and personality, 199; and tripartite character of speech, 199; as analysis of words, 201; anomalies of, 201 f.; *we*, as singular and plural, 201 f.; grammatical solution of, 202 f.; Jespersen's negative third, 203 f.; psychology of, 204 f.; not word classification, 206; and voice, 273; and secondary speech, 298.
- Personality equipment, 72.
- Philology, classical, influence upon linguistics, 9.
- Philological vs. psychological grammar, 37 f.
- Phonetic laws, 174 ff.
- Phoneme, the, as phonic element, 160, 162 f.; changes in, 177.
- Phonology, as a grammatical branch, 99; and morphology, 109; as study of sounds, 159 f.; and phonetics, 161 f.; and psychology, 163; as sound-interaction patterns, 163 f.; comparative, 164; psychological vs. grammatical, 164 f.; psychic, 166; laws of, 174 ff.
- Physiological activities and language phenomena, 53 f.
- Plural, the, and mathematical number, 253;, of approximation, 253; ordinary, 256.
- Polynesian, 96.
- Polysynthesis, 90.
- Positive, the, vs. the negative, 305; as a propositional element, 305 f.; and double negation, 306 f.
- Possessive, the, and voice, 266; and the passive, 276.
- Prayer, 28.
- Preposition groups, and case, 230 ff.
- Prepositions, references to relations, 189.
- Printed words, and symbols, 64 f.; as auxiliary stimulus functions, 83.
- Pronouns, as stylistic variants, 192 f.; impersonal, 198 f.; *who*, 199 f.; problem of number in, 200, 201 f.
- Proposition, the, vs. the sentence, 136 f.; for Aristotle, 279; and number of moods, 285 f.; as positive assertion, 305 f.; subjective and objective, 306.
- Psychic capacity, and language, 54.
- Psychic processes, as sources of language, 47, 54; as supposed psychological factors, 57 f.; transformed into bodily action, 58; and speech socialization, 68 f.; and inapparent responses, 72; and organismic psychology, 73; and post-Aristotelian

- humanism, 102 f.; vs. the physical, 103; and post-Cartesian psychophysics, 104; and anthropological science, 106.
- Psychic states, see *Psychic processes*.
- Psycholinguistic situation, analysis of, 55 f.
- Psychological adjustments, vs. logical categories, 181 f.
- Psychological conditions, as determiners of speech, 131 f.
- Psychological grammar, vs. conventional, 31 f.; 40 f.; and ineptness of language, 35; opposed to formalization of speech, 39; not concerned with speech standards, 40; and linguistic etiquette, 41; and historical grammar, 41 f.; and speech style, 85; universality of, 94 ff.; and conventional semantics, 117 f.; and speech parts, 184 ff.
- Psychological interactions as stimuli, 270 ff.
- Psychological sentence, definition of, 134 f.; classification of, 144 ff.
- Psychological semantics, definition of, 124; and matter, form, function, and meaning relations, 125 f.
- Psychological stimuli, confused with word symbols, 67.
- Psychology, opposed by linguist, 46 ff.; as a basis for linguistics, 47 f.; faculty period of, 48; linguistic and scientific period of, 48 f.; Herbartian, 48; Paul's subordination of, 49; Wundt's rejection of Herbartian, 50 f.; as supposed basis of human phenomena, 50; Delbrück's rejection of Wundtian, 51 f.; for Vendreyes, 53; for Vossler, 54; Hocart's attack upon, 54 f.; and linguistics, 55 f.; supposed psychic factor in, 57 ff.; behavioristic phase of, 106 f.; and speech parts, 135 f.
- Psychophysics, post-Cartesian, 104; and expression doctrine, 105.
- Purpose, and language adjustments, 67 f.; and the individual speaker, 68; as a social process, 69 f.; in speech, 70; and the sentence as unit of speech, 133 f.; and mood, 281.
- Purposivists, see *Purpose*.
- Questions, as influences of language reactions, 59; and negation, 303.
- Reaction systems and reaction patterns, 76.
- Reading, not a reaction to symbols, 66 f.
- Reactional biography, as feature of organismic psychology, 72; as source of speech patterning, 84, 124.
- Reality, of words, 153 f.; and thought, 287 f.
- Reference, and description, 34 f.; and form, 37 f.; linguistic, 38; simple, 184 f.; complex, 185; substantive type of, 185 f.; adjectival type of, 187; verbal type of, 188; adverbial type of, 188 f.; prepositional type of, 189.
- Referential adjustments, as speech, 36 f.; and the subject-object dilemma, 138; and temporal conditions, 247 ff.
- Referential conception of grammatical items, 230.
- Referential reactions, forms of, 76.
- Referential vs. mediate language, 78.
- Reply speech, see *Answering speech*.
- Revived language, 25 f.
- Romance languages, 42, 208.
- Romantic school, and language origin, 46 f.
- Russian, 150, 194, 258.
- Samoan, 202, 205.
- Sanskrit, 46 f., 88, 92, 176, 257.
- Saxon, 44.
- Scandinavian, 92.
- Scientific description vs. speech, 35.
- Scientific vs. conventional grammatical explanation, 44.
- Scientific psychology in the linguistic field, 48 f.
- Secondary speech, no basis in fact, 292; and thought, 293 f.; and grammatical categories, 298 f.
- Semantic change, 125.
- Semantics, as a grammatical branch, 99; development of, 108; levels of, 113 f.; and thing language, 115 f.; and psychological grammar, 117 f.; and meaning, 120 f.; as study of vocabulary reference patterns, 124; psychological, 124.

- Semitic languages, 9, 196, 208, 209, 214, 226, 244.
- Sentence, the, confusion concerning, 5; for Wundt, 52; as unit of speech, 132 f.; for the psychologist, 134 f.; as speech patterning, 135 f.; primacy of, 136; vs. the proposition, 136 f.; and grammatical ranking, 139; from psychological-adjustment standpoint, 140; classification of, 144 ff.; as reciprocal, 263; Aristotle's doctrine of, 279.
- Sex reference, and gender, 207; actual, 214 f.; individuality of, 216.
- Singular and plural, and mathematical number, 253 f.
- Slavic, 92, 93, 244, 246, 307 f.
- Slavonic, Old, 21, 257.
- Social circumstances, as conditioners of language, 15 f., 54 f.; transformed into psychic guides of bodily action, 59; as factors in speech patterning, 84 f.; as factor in dualistic doctrine, 103; as syntactic factor of speech, 132.
- Social institutions, 85 f.
- Social psychology, and speech traits, 86; vs. sociology, 86 f.
- Social purposes, and speech, 69 f.
- Social speech patterning, 84 f. See Cultural speech patterning.
- Sociology, contrasted with social psychology, 86 f.
- Soudanese, 226.
- Soul, the, as manifested in language, 47; and the superindividual mind, 49; for Aristotle, 100 f.
- Sound changes, psychology of, 174 ff.
- Sound patterning, interactional, not symbolic, 163; a matter of psychological development, 174.
- Sound symbolism, psychology of, 169 ff.
- Sounds, as speech materials, 159 f.; not fixed, 160; and standard language, 160 f.; interactional patterns of, 163 f.; as symbols, 167 f.; Sapir's discussion of, 166 ff.; natural symbolism of, 170; imitative symbolism of, 170 ff.; natural fitness of, 174; as historical or cultural developments, 174; psychology of changes in, 174 ff.
- Speaker, the, in the speech event, 73 ff.; linguistic power of, 96, 195 f., 226 f., 282; response configurations of, 131; and speech parts, 190; linguistic circumstances of, 191; and the problem of person, 201 ff.; different actions of, 233; and case references, 235; and abstract time, 240, 247; and number references, 256; as adjustment stimulus, 268 f.; and language evolution, 275 f.; and mood, 282; and direct speech, 293.
- Speaking, act of, 59; not setting up symbols, 63; interpretation of, 117 f.
- Speech, as things, 4, 7 f., 10, 13 f.; as fossils, 4; parts of, 6 f.; without words, 7; and mentalistic psychology, 10 f.; instrumental conception of, 15; grammar as science of, 15 f.; conditions governing, 16; liturgical, 21 f.; products of, 23; recollected, 24; and language, 30; as adjustment activity, 33 f.; as referential adjustments, 36 f.; and logic, 38, 96; dissonance and consonance of, 39 f.; beauty and grace in, 40; origin of, 42 f.; immediacy of, 43; as arising from animal cries, 51; as stimulus, 62 f.; importance of situation in, 63; and individual purposiveness, 68; and the listener, 68; as social action, 70; as a psychological phenomenon, 71 ff.; bistimulational character of, 73 ff.; as indirect adjustment, 77 f.; preceding, 77; accompanying, 77; following, 78; substitute, 78, initiating, 80; and symbol behavior, 81 f.; and symbols in same situation, 83; alternation of symbols and, 83; individual and social patterning of, 84 f.; and vocabulary institutions, 87 f.; and speech situations, 119 f.; and meaning, 122 f.; four syntactic aspects of, 129 ff.; patterning of, 135 f.; comparative aliveness of, 143; individual habits of, 190; linguistic circumstances governing, 191; and semi-implicit behavior, 271 f.; direct and indirect, 291 ff.; secondary, 292; direct, 292 f.; indirect, 294 ff.; as spoken of, 296 ff.; as exact quotation, 296 f.; as casual quota-

- tion, 297; answering, 297; as reference to reference manner, 297 f.; and grammatical categories, 298 f.; vs. symbolic words, 301 f.; negative, 301 f., 312.
- Speech-habits, 190, 245.
- Speech-materials conception, abstractionism in, 159 ff.; linguistic corrections of, 166 f.
- Speech parts, criteria for, 5 ff.; as influenced by social circumstances, 132; problem of, 181 ff.; linguistic emendation of, 182 ff.; psychological emendation of, 184 f.; primarily related to adjustment stimuli, 185 ff.; substantive, 185 ff.; adjectival, 187; verbal, 187 f.; adverbial, 189 f.; prepositional, 189; and auxiliary stimuli, 189 f.; and the speaker, 190 f.; interjectional, 191 f.; pronomial, 192 f.; how many, 193 ff.; and language systems, 195; psychological classification of, 196; as compound, 196 f.; dialectal character of, 197; and syntax, 197; and voice, 265 f.; and negation, 301.
- Speech style, morphology as study of cultural, 156; application of conceptions of, 156 f.; and language superiority and inferiority, 158; and speech parts, 190; and *Aktionsart*, 247; and Aspect, 247. See also Cultural speech patterning.
- Spurious language, vs. genuine language, 19 ff.; and transcribed materials, 60 f.
- Standard language, 160 f.
- Standards, and speech beauty, 40; and linguistic etiquette, 41; of correctness, 41.
- Stimuli, as speech factors, 59; and symbols, 63.
- Stimulus function, 71.
- Style, linguistic, 19 f.; as language patterns, 84 f.; and vocabulary language institutions, 87 f.; as individual syntax, 131; morphology as study of speech, 156.
- Subject and object, fallacy of, 137 f.; and problem of voice, 262 ff.; as event stimulus, 267; and active and passive, 267.
- Subject and predicate, fallacy of, 127, 137, 183 f.
- Subjectivity in language, 57 f.
- Subjunctive, the, and mood, 280, 281 f.; as a thought mood, 287.
- Substantives, as psychological references, 185 ff.; connected with case, 229; and voice, 265 f.
- Subvocal action, not psychic, 58; and behaviorism, 107.
- Superindividual mind, 49.
- Supernaturalism, 102.
- Syllables as linguistic units, 152.
- Symbol-expression conception, as basis of grammatical departments, 99 ff.; origin and development of, 100 ff.; and dualistic thought, 104 ff.; and case, 220; and mood, 281 f.
- Symbol-motive, and the sentence as speech unit, 133; and grammatical number, 251 f.
- Symbolic conception, sources of, 64 ff.
- Symbolic relations, reactions to them, 65 ff.; fixed nature of, 81.
- Symbolic theory, as outgrowth of expression doctrine, 59 f.
- Symbolism, a result of mentalistic psychology, 10; in conventional grammar, 36; not involved in speech, 39; and expression doctrine, 59 f.; as relationship of fixed terms, 60; sources of, 64 ff.; and expressive psychology, 70; and grammatical organization, 99 f.; natural, 169 f.; imitative, 170 ff.; imitative adjustment vs. imitative, 172 f.; and the negative, 302 ff.
- Symbology, not a branch of psychology, 65 f.; three variables in, 81 f.; universal verbal, 105. See also Symbols.
- Symbols, not language, 19; and formal analysis of speech, 39; and the symbolic theory of language, 59 f.; as related terms, 60; and transcribed materials, 60 f.; as static, 61 f.; without referents, 62; as standing for stimuli, 63; and the speaker's words, 63 f.; and printed words, 64 f.;

- responses to, confused with language, 67; confusion of language responses and responses to, 67; psychological behavior to, 81 f.; compared with speech, 81 ff.; not stimuli, 82; and speech in same situation, 83; becoming speech, 83; as basis for grammatical branches, 99; and thought, 107 f.; confused with speech, 117; in traditional meaning conception, 120 f.; as stimuli for meaning reactions, 123 f.; sound, 167 f.; and gender, 213; and case, 220; and tense, 238; time, 244 f.; and number, 251 f.; words as, 252; and the negative, 302 ff.; and negative facts, 311 f.
- Syntactic units, 132 ff.
- Syntax, as a grammatical branch, 99; development of, 108; confusion of, with morphology and semantics, 109; logical domination of, 127 f.; influence of translation motive upon, 128; psychological, 128 f.; four aspects of, 129; units of, 132 f.; of the hearer, 141; and the copula problem, 142; and speech parts, 197.
- Synthesis, 90.
- Taboos, as special language institutions, 92; as influences upon speech, 191.
- Tagalog, 202.
- Tatverba*, 270.
- Temporal speech patterns and time symbols, 244 ff.
- Tense, confusion concerning, 5; English future, 37; as word-symbol counterpart of abstract time, 236 ff.; as time-symbols vs. speech, 238 ff.; and time, 240 ff.; incongruities of, 242; timeless, 242 f.; gnomic, 243; perfect, 243; indefinite, 243; and time symbols, 244 ff.; as conventional speech habit, 245; and *Aktionsart* and Aspect, 246 f.; psychology of, 247 ff.; *shall* and *will*, 248 f.; and mood, 288; and secondary speech, 298.
- Text analysis and derivation of word units, 154.
- Thing language, and the psycholinguistic situation, 56; overemphasis of, 92; and verbal symbology, 105 f.; and conventional semantics, 115 f.; and the reality of words, 153; and the problem of case, 219 f.
- Thing motive, 7 f., 9 f., 11, 13 f., 38, 219 f., 300 f.
- Thought, as a factor in symbol situations, 66; and symbols in grammatical history, 107 f.; and reality, 287; and mood, 287; and indirect speech, 293 f.
- Tibetan, 91.
- Time, and tense, 236 ff., 240 ff.; in speech situations, 241 f.; without tense, 243 f.; from psychological standpoint, 247 ff.
- Time symbols and speech, 238 ff.
- Transcribed language, see Spurious language.
- Translation theory, in speech, 58 f.; and syntax, 128; literal, 157; and voice, 277.
- Turkish, 88, 89, 90, 91, 154, 228.
- Understanding, as referee language behavior, 80; community of, 94; misunderstanding of, in speech event, 118 f.
- Unit of speech, words and sentences as, 132 f.; from psychological standpoint, 134 f.; the syllable as, 152; and reality of words, 153 f.
- Utterances, types of, 144 ff., 290; active and passive, 267 f.
- Vedic, 176, 257.
- Verb, the, confusion concerning, 7; finite, 142 f.; a necessary speech part, 183; a reference to actions, 187 f.; and the copula, 194 f.; impersonal, 198 f.; and case, 229; as time word, 241; and *Aktionsart*, 246 f.; and Aspect, 246 f.; and future tense, 249; active and passive, 265; and mood, 281.
- Verbal formulae, 21.
- Verbal language, conventional, 28; morphological, 78 f.
- Verbal records, 21.
- Verbal symbology, universal, 105; and semantics, 115.
- Vitalized aphorisms, 26.

- Vocabulary language institutions, 87 f.
- Vocal interactions, and psychic phonology, 165 f.; and pattern symbolism, 166 ff.
- Vocal organs, 13, 53 f., 59.
- Voice, active and passive, 261 ff.; grammarian's minimization of, 262 ff.; and subject-object relations, 262 ff.; middle, 264; and speech parts, 265 f.; psychological background of, 266 ff.; and object stimulus, 268; and individual's passivity, 269; and adjustment stimulus types, 270 ff.; and case, 273; and person, 273; and language pattern, 273 ff.; and language evolution, 275 f.; and translation, 277.
- Volition and voice classification, 274.
- Vowel, the, natural symbolic character of, 169 f.
- Word compounding, 150 f.
- Word construction, 89.
- Word forms, not fixed, 61; morphology, the study of, 147 ff.
- Word magic, 116.
- Word order, as special language institution, 92.
- Word ranking, 139 f.
- Word study, Sapir's scheme of, 147 f.; Bloomfield's scheme of, 148 f.; artificialities of, 150.
- Word symbols, and semantics, 113 f., 115 f.; and case, 220; and tense, 236; and negation, 302 ff.
- Word-thing conception, 7 f., 9 f., 11, 14 f., 38, 219 f.
- Word usage as semantic study, 113.
- Words, as psychical, 12 f.; as symbols, 36; as things, 38 f.; as conditioned by adjustmental circumstances, 61; meaning of, 63 f.; and speech, 64 f.; as names, 64; printed, 64; and conventional semantics, 115 ff.; context theory of, 116; and meaning, 120 f.; and question of primacy, 136, 139; ranking of, 139 f.; compounding of, 150 f.; nature of, 151 f.; static vs. linguistic adjustments, 152 f.; reality of, 153 f.; how derived, 154 ff.; and text analysis, 154; phases in utterance of, 161 f.; classification of, and person, 206; and tense, 239 f.; and number misconceptions, 251 f.; mass, 254 f.
- Yakut, 258.
- Zend, 257.

NAME INDEX

- Adam, L., 316, 325.
 Adams, S., 319.
 Adelong, J. C., 211, 215.
 Agrell, S., 246, 326.
 Allport, G. W., 320.
 Ammann, H., 328.
 Appolonius, Dyskolos, 132, 279.
 Aristotle, 8, 9, 99 ff., 105, 115, 181 ff.,
 188, 221, 242, 278 f., 324.
 Ascham, R., 32.
 Asker, W., 321.
 Augustine, 104.
 Atkinson, W., 23.

 Bacon, F., 115.
 Baudouin de Courtenay, J., 162 f., 324.
 Baker, H. G., 325.
 Balbi, A., 315.
 Baldwin, J. M., 318.
 Ballard, P. B., 319.
 Bally, C., 33, 69, 316.
 Barnum, F., 243 f., 326.
 Bartlett, F. C., 318.
 Bean, G. H., 318.
 Beauzée, N., 315.
 Beck, E. H. F., 325.
 Behaghel, O., 140, 327.
 Benary, W., 108.
 Benfey, T., 46, 315.
 Bentham, J., 318.
 Bentley, A. F., 65, 318.
 Bentley, M., 170.
 Blake, F. R., 224 f., 228, 325.
 Bleek, W. H., 315.
 Bloomfield, L., 53 n., 114, 119, 148 ff.,
 158, 160, 205 n., 228, 316, 318.
 Bloomfield, M., 324.
 Blümel, R. B., 323.
 Boas, F., 201 f., 205, 207 f., 244, 315.
 Bøgholm, N., 326, 327.
 Bopp, F., 47, 108.
 Bøthlingk, O., 258, 326.
 Bourdon, B., 319.
 Brandenstein, W., 323.
 Breal, M., 39, 99 n., 322.
 Bredsdorff, J. H., 53.
 Brentano, C. M., 111.

 Breymann, H., 321.
 Brinton, D. G., 200 f.
 Brockelmann, C., 320.
 Brøndal, V., 324.
 Brown, W., 318.
 Brugmann, K., 109, 140, 144, 212, 246,
 280, 316, 320, 323, 325, 326.
 Brunot, F., 6, 20, 33, 125, 183, 274 f.,
 321, 325.
 Buchanan, M. A., 33, 321.
 Bühler, K., 15, 133, 145, 318.
 Byrne, J., 315.

 Calloway, N., 326.
 Cantril, H., 320.
 Carnap, R., 127 n.
 Carnoy, A., 322.
 Cassirer, E., 105 n., 318.
 Cohen, M., 316.
 Colebrook, H. T., 46.
 Collin, C. S. R., 322.
 Collinson, C. E., 326.
 Collinson, W. E., 326.
 Comenius, J. A., 33, 321.
 Couturat, L., 105 n.
 Curme, G. O., 196, 244, 299.
 Curry, A., 326.
 Curtius, G., 246, 316.

 Darmesteter, A., 318, 322, 323.
 Dante, 173.
 Delacroix, H., 319.
 Delbrück, B., 51 ff., 108, 315, 316, 317,
 326, 328.
 Demos, R., 328.
 Dempe, H., 317.
 Descartes, R., 103 ff.
 Deutschbein, M., 44, 224, 229 n., 230,
 282 f.
 Dewey, J., 69, 318, 319.
 Dionysius Thrax, 132, 279.
 Dittrich, O., 141, 319, 323.
 Drexel, A., 315.
 Duhem, P., 19 n.

- Eliot, C. N. E., 232 ff.
 Erdmann, K. O., 116, 322.
 Esper, E. A., 318 f., 320.

 Falk, H., 322.
 Fechner, G. T., 104.
 Field, H. F., 327.
 Finck, F. N., 270, 276, 315, 317, 327.
 Frantzen, J. J. A. A., 327.
 Fries, C. C., 248 f., 326.
 Funke, O., 323.

 Gabelentz, H. G. C. von der, 44, 317.
 Gardiner, A. H., 11 f., 15, 53, 68 f.,
 133 f., 137, 141, 142, 144 f., 153, 317.
 Gelb, A., 320.
 Gemelli, A., 177, 324.
 Gibbs, W., 19.
 Giesswein, A., 317.
 Glässer, E., 325.
 Goldstein, K., 320.
 Gomperz, H., 322.
 Gorki, M., 17 n.
 Graff, W. L., 63 n., 152 f., 157, 317.
 Grasserie, R. de la, 208, 246, 322, 325,
 326, 327.
 Grassman, H., 176, 324.
 Greenough, J. B., 322.
 Gregory, J. O., 318.
 Grimm, J., 23, 47, 175, 177 n., 325.
 Grimm, W., 47.
 Güntert, H., 317.
 Gutzmann, H. A. K., 320.

 Hagboldt, P., 321.
 Hale, W. G., 279 n., 280.
 Handschin, C. H., 321.
 Hankamer, P., 315.
 Hasse, A., 280.
 Hatzfeld, H., 322.
 Havers, W., 13, 44, 45, 323.
 Head, H., 320.
 Herbart, J. F., 48, 50.
 Herder, J. G. von, 211.
 Herdin, E., 327.
 Hermann, E., 325, 326.
 Hermann, G., 8, 280.
 Hervas, L., 315.
 Hey, O., 322.
 Heybarger, A., 321.
 Heyse, K. W. L., 246, 279, 326, 327.

 Hjelmlev, L., 321.
 Hobbes, T., 115.
 Hocart, A. M., 54 f., 317, 321.
 Horn, W., 323.
 Hovelacque, A., 315.
 Humboldt, W. von, 47, 89, 170 f., 316,
 327.
 Husserl, E., 111, 318.

 Jespersen, O., 3 f., 5, 8, 21, 33, 34, 44, 88,
 96, 109, 125 f., 128, 134, 137, 139 f.,
 142 f., 145, 151, 153 f., 162, 169 f.,
 172, 183, 192 f., 196, 199 ff., 209 f.,
 218 f., 230 f., 236 ff., 251 ff., 263,
 265 f., 275, 280 f., 288 f., 291 ff., 302 f.,
 307, 315, 317, 321, 323, 324, 328.
 Johnson, W. E., 328.
 Jones, W., 46.
 Jones, W., 208.

 Kalepky, T., 127, 321.
 Kant, I., 104.
 Kantor, J. R., 19 n., 64 n., 71 n., 87 n.,
 320.
 Kappert, H., 321.
 Karsten, G. E., 324.
 Keatinge, M. W., 321.
 Keilmann, J., 229 n., 326.
 Kieckers, E., 316.
 Kierkegard, S., 70.
 Kitteredge, G. L., 322.
 Kluge, F., 323.
 König, J. L., 327.
 Koschmieder, E., 326.
 Kretschmer, P., 133, 145.
 Kroesch, S., 322.
 Kussmaul, A., 320.

 Låftman, E., 327.
 Laguna, G. de, 69, 317.
 Latif, I., 318.
 Lazarus, H., 51, 68.
 Lehmann, H., 322.
 Leibniz, G. W., 105, 115.
 Lenz, R., 325.
 Lepsius, C. R., 316.
 Lerch, E., 323, 328.
 LeRoy, B., 317.
 Leskien, A., 176.
 Locke, J., 33, 115, 321.

- Lohmann, J., 325.
 Loreck, E., 294, 327.

 Mach, E., 19 n.
 Madvig, J. N., 171 f., 236, 325.
 Malinowski, B., 12 f., 156 f., 318.
 Marbe, K., 319.
 Markey, J. F., 319.
 Marouzeau, J., 317.
 Martinak, G., 322.
 Marty, A., 68, 70, 321, 326.
 Mauthner, F., 9, 181.
 McBride, K. E., 320.
 McKerrow, R. B., 218, 242, 287, 326.
 McPhee, E. D., 33.
 Mead, G. H., 69, 317, 320.
 Meader, C. L., 160, 184, 319.
 Meillet, A., 69, 316.
 Meinhof, C., 208, 209 n., 325.
 Meisinger, O., 322.
 Meyer, R. M., 322.
 Michelson, T., 208.
 Mill, J. S., 115.
 Misteli, F., 316.
 Montaigne, M., 32, 321.
 Morgenroth, K., 320.
 Müller, E. G. O., 133.
 Müller, F., 316, 324.
 Müller, M., 317.
 Murray, L., 228.

 Nagel, E., 127 n.
 Nehring, A., 323, 326.
 Newman, S. S., 170.
 Niceforo, A., 320.
 Noreen, A. G., 17, 99, 110 f., 140, 144,
 193, 222, 246, 251 f., 280, 321.
 Nyrop, K., 99, 171 f., 322.

 Occam, W., 115.
 Oertel, H., 108, 315.
 Ogden, C. K., 36, 60 n., 66, 106, 115 ff.,
 120, 311, 318.
 O'Leary, D., 321.
 Osthoff, H., 323.
 Otis, A. S., 318.
 Owen, E. T., 183 n., 325.

 Paget, R., 317.
 Palmer, H. E., 321.
 Parsons, J. H., 318.

 Pastori, G., 324.
 Paul, H., 49 f., 108, 133, 223, 321.
 Pear, T. H., 318.
 Pedersen, H., 315.
 Pick, A., 320.
 Pillsbury, W. B., 319.
 Plato, 23, 101, 169.
 Poincaré, H., 19 n.
 Pollak, H. W., 321.
 Porzesinski, V., 317.
 Porzig, W., 53 n., 110 ff., 326.
 Pott, A. F., 47.
 Powers, F. F., 319.

 Rappoport, A. S., 258.
 Rask, R., 175, 198.
 Raumer, R. von, 175.
 Reisig, C. K., 99, 108, 322.
 Rexroad, C. N., 319.
 Richards, I. A., 36, 60 n., 66, 106,
 115 ff., 120, 311, 318.
 Ries, J., 17, 132 f., 141, 153, 323.
 Robinson, A., 318.
 Rozwadowski, G., von, 322.

 Sandfeld-Jensen, K., 317.
 Sapir, E., 38, 90 f., 147 f., 153, 162 f.,
 166 ff., 183, 207, 316, 317, 320, 326, 327.
 Saussure, F. de, 69, 162, 172, 317.
 Sayce, A. H., 33, 99, 316, 321.
 Scherer, W., 176.
 Schlegel, A., von, 47, 88 f.
 Schlegel, F. von, 47, 88.
 Schleicher, A., 47, 50 n., 108, 152.
 Schmidt, K., 322.
 Schmidt, W., 208 n., 257, 316, 325.
 Schoenherr, W., 321.
 Schroeder, L., 325.
 Schuchardt, H., 275, 276, 324.
 Schwarz, H., 322.
 Scripture, E. W., 177, 320, 324.
 Secheyay, C. A., 137.
 Shaw, B., 161.
 Sheffield, A. D., 117 n., 321.
 Shelley, P. B., 216.
 Smith, E. M., 318.
 Smith, S., 319.
 Sonnenschein, E. A., 223 f., 229, 283 ff.,
 321.
 Sperber, H., 322.
 Spitta-Bey, W., 177.

- Spitzer, L., 317.
 Stahl, J. M., 109.
 Starr, F., 316.
 Steinmüller, G., 321.
 Steinthal, H., 48 f., 68, 315, 316, 319.
 Stern, G., 53, 120, 322.
 Stöcklein, J., 322.
 Stout, G. F., 54 f.
 Sturtevant, E. H., 151 f., 321.
 Sütterlin, L., 140, 153, 317.
 Swadesh, M., 324, 326.
 Swanton, J. R., 316.
 Sweet, H., 6, 43, 138, 140, 162, 183, 193,
 195 f., 243, 248, 271 f., 279 f., 286, 322.
- Talleyrand, C. M., 70.
 Tarbell, F. B., 324.
 Tegnér, E., 325.
 Tesnière, L., 316.
 Thalbitzer, W., 198.
 Thomas, C., 316.
 Thomson, G. H., 318.
 Thomson, V., 315.
 Thorndike, E. L., 322.
 Thumb, A., 109, 319.
 Titchener, E. B., 111 n.
 Tobler, A., 327.
 Tobler, L., 323, 324.
 Travis, L. E., 320.
 Trench, R. C., 322.
 Trendelenburg, F. A., 181.
 Trombetti, A., 316.
 Troubetzkoy, A., 162 f., 165.
 Twaddell, W. T., 324.
- Uhlenbeck, C. C., 201, 275, 316, 327.
- Vaihinger, H., 318.
 Van Ginneken, J., 304 f., 306 ff., 319.
- Varon, E. J., 170.
 Vater, J. S., 316.
 Velten, H. V., 266 n., 270, 273 f., 316,
 326, 327.
 Vendreyes, J., 53, 69, 154, 182 f., 210,
 212 f., 272, 276, 300 f., 305, 317.
 Verner, K., 176, 324.
 Viëtor, W., 33, 219 n., 321.
 Vossler, K., 54.
- Waag, A., 322.
 Wackernagel, J., 323.
 Walzel, O., 327.
 Warren, H. C., 116 n.
 Watson, J. B., 318.
 Weber, E. H., 104.
 Wechsler, E., 324.
 Wegener, P., 10 f., 27 n., 68, 133, 141,
 244 f., 323.
 Weisenburg, T. H., 320.
 Weisgerber, L., 318, 323, 324.
 Weiss, A. P., 69, 320.
 Welby, V., 99, 323.
 Wellander, E., 153, 323.
 Wheeler, B. I., 324, 325.
 Whitney, W. D., 86, 316.
 Wilkins, J., 105.
 Wilson, P. W., 161.
 Wilson, S. A. K., 320.
 Winkler, H., 212, 325.
 Winteler, J., 162.
 Wolfie, D. L., 319.
 Wüllner, F., 327.
 Wundt, W., 50 ff., 68, 104 ff., 133, 222 ff.,
 229, 258, 277, 282, 317, 319, 324, 325.
- Ziemer, H., 323.
 Zipf, G. K., 317.