

CHAPTER III.

THE MENTAL BASIS OF LANGUAGE.

1. The place of language in our mental life. Language plays a very important part in most of our mental processes, few of which, indeed, are entirely free from linguistic elements. While it is possible, for instance, with some effort, to picture in purely visual terms the actions we have in mind for the morrow, we hardly ever do so, but rather plan our day not only by visualizing but also by wording what we intend to do. If, further, we try to think of our reasons for these intended actions, or of their effects, or of anything else not in immediate physical connection with them, we must resort to language, framing our thought in words and sentences. In short, a very little introspection shows that nearly all of our mental life contains speech-elements. We cannot conceive of the human mind without speech. The development of language, accordingly, must have advanced in inseparable connection with that of the mental powers generally. To demonstrate in detail the role of language in our mental processes would be to outline the facts of psychology. We are here concerned, of course, only with those mental processes which most immediately underlie the use of language.

2. Total experiences. The animals have in common with us a process which may be called the formation of *total experiences*. Like us, they experience the outside world not as a chaotic jumble of sensations, but as a system of

complex recurrent units, as a world of objects. The perceptual and emotional elements which we group together, for instance, as a rabbit, appear to a dog also coherent and distinct from other perceptions and emotions, such as those of the surrounding trees, the sky, other smells and noises, the internal bodily sensations, and so on. Like ours, the dog's apperception, — or, as we subjectively say, his attention, — may focus the rabbit as the central object, for the time being, of consciousness. The coherence and unity of such a total experience are due to habits of association formed in earlier related experiences: in our instance the surrounding trees and the sky, the bystanders, and those of our internal sensations and emotions that are not connected with the present experience, have all entered into various combinations in earlier experiences and have thereby become familiar enough not to be irrelevantly confused with the present one.

Animals respond to a total experience by an expression varying at best for a few widely distinct emotional qualities; thus the dog barks at the rabbit as he does at a great many other things. Man differs from the animals first of all in that he has a distinctive sound-reaction for each one of a great many types of experience, — e. g. for the type of experience which we call a 'rabbit'. Whenever an experience of a given type occurs, the sound-reaction connected with that type is associatively recalled and reproduced. When we saw the rabbit, for instance, we did not 'inarticulately' cry out, but exclaimed 'a rabbit.'

This also, to be sure, is not an exact way of dealing with experiences. We react to countless experiences of a single type (such as 'rabbit') with one and the same utterance, while in fact no two experiences are wholly alike. When we associate the present experience with certain past experiences and utter with it the sound-se-

quence which we heard and uttered with them, we do so not because the present experience is exactly like the past ones, — it is not, — but because certain elementary features are common to it and each of them. These elementary features are known as *dominant elements*. Thus a rabbit of different size or color, or one running in the opposite direction might call forth the same utterance. We use the word 'book' for objects of many sizes, shapes, and colors, provided they present certain features. Even a clearly defined scientific term, such as 'triangle' applies to an infinite variety of experiences with but a simple common element. In short, our reaction to experiences, though much more differentiated than that of animals, is not just to the individuality of each experience, but groups great numbers of experiences together under types within each of which all the experiences are designated by one and the same reaction.

The association of experience-types with fixed and distinctive sound-utterances represents an important step in mental progress. It makes possible attentive and connected thought. When we recall the experience, we repeat, actually or in imagination, the sounds with which it is connected. They are a convenient means of holding the experience in the attention; by recalling the sounds (or their visual symbols) over and over again, — at first as young children do, aloud, but, after practice, in imagination alone, — we can keep the experience before us much longer than is possible in speechless picturing.

An advantage of the grouping together of hosts of individual experiences under one type is this, that all experiences belonging to the type can be dealt with en masse and need not be recalled one by one, if we use the linguistic expression, which deals with all of them alike. This is conceptual or general thinking.

3. The analysis of total experiences. The existence of a fixed sound-reaction, which enables us to hold an experience vividly in our attention, also makes possible the *analysis* of experiences. Every experience is composed of a number of elements whose individuality is due to their having occurred in other contexts in past experiences. Thus we have seen the color of the rabbit, other four-footed animals, other running animals, and the like. Each element recalls those past experiences in which it figured. But it does this obscurely, until language has given the experience a fixed and easily handled symbol with which we can keep it from slipping, as it were, through our fingers. Once language exists, however, the analysis of the experience into these elements is bound to develop. At least it takes place in all known languages and is in all of them, as time goes on, being perfected by a gradual but unceasing process of development, to which we must ascribe also its origin.

This process is the assimilation of expression-relations to experience-relations. We may illustrate it by a schematic example. Suppose that in some language the utterance connected with the experience of a white rabbit is *patilu* and that connected with a white fox is *meko*, — in other words, that these experiences, of different emotional value, are attended by two totally unlike expressions. Nevertheless, owing to such elements as they have in common, whenever a white rabbit is seen, not only the past white-rabbit experiences, with their *patilu*, but also, among others, the white fox experiences, with their *meko*, will be awakened. Sooner or later one of these types will assimilate the other's expression; such assimilative processes are constantly occurring, as we shall see, in every language, — as when, in English, Chaucer's word *fader* became the *father* of present English, under the influence

of *mother*, *brother*. For instance, instead of *patilu*, someone will, under the influence of *meko*, say *metilu*. At first this will happen occasionally, but it will be the more likely to happen again when one has once spoken or heard the new form. The associational circumstances are all in favor of it. Finally the new habit will completely supersede the old. When this has happened, there are two utterances: *me-tilu* 'white-rabbit' and *me-ko* 'white-fox'. Corresponding to the perceptual element 'white' is the phonetic element *me-*. When one now utters *me-tilu* a certain amount of analysis is involved: *me-* expresses the color, *-tilu* (or *-ko*) the kind of animal. These phonetic elements may ultimately attain independent use: in answer to such a question as 'What kind of a rabbit (fox) did you see?' one may say *me* 'White', and one may designate 'rabbit' in general by *tilu*, 'fox' in general by *ko*.

When this development has taken place, such an utterance as *me tilu* or *white rabbit* involves an analysis of the total experience into these two elements. When we say *white rabbit* we more or less vividly separate the two elements of the total experience. Sometimes we may not attend closely to the analysis, but at others we shall insist on it, as when we say 'No, a *white* rabbit' or 'No, a *white rabbit*'. Such an utterance analyzing an experience into elements we call a *sentence*.

The relation of the elements of a sentence to each other has a distinctive psychological tone. It is called the *logical* or *discursive* relation. It consists of a transition of the attention from the total experience, which throughout remains in consciousness, to the successive elements, which are one after another focused by it.

The attention of an individual, — that is, apperception, — is a unified process: we can attend to but one thing at a time. Consequently the analysis of a total experience

always proceeds by single binary divisions into a part for the time being focused and a remainder. In the primary division of an experience into two parts, the one focused is called the *subject* and the one left for later attention the *predicate*; the relation between them is called *predication*. If, after this first division, either subject or predicate or both receive further analysis, the elements in each case first singled out are again called subjects and the elements in relation to them, *attributes*. The subject is always the present thing, the known thing, or the concrete thing, the predicate or attribute, its quality, action, or relation or the thing to which it is like. Thus in the sentence *Lean horses run fast* the subject is *lean horses* and the horses' action, *run fast*, is the predicate. Within the subject there is the further analysis into a subject *horses* and its attribute *lean*, expressing the horses' quality. In the predicate *fast* is an attribute of the subject *run*.

Constant repetition, to be sure, mechanizing these processes, saves us the trouble of repeating the entire discursive analysis in every sentence we utter. Such groups, especially, as are very common are no longer felt as attributions (predication is always vividly discursive), the concrete relation alone remaining uppermost. Thus, in a sentence such as *A white rabbit ran across the field*, the first three words are plainly felt to be the subject, and the rest the predicate, and within the subject *white*, within the predicate *across the field* are in vivid attributive relation, respectively, to *a rabbit* and *ran*; but the groups *across the field* and *a rabbit* are not by the normal speaker felt as discursive relations. He would say simply that *a* expresses the 'indefiniteness' and that *the* expresses the 'definiteness' of the thing, while *across* is expressive of local relation. It is only when we give the parts of the

utterance much more than the usual degree of attention, that we may feel these relations as discursive, — as, for instance, when we say ‘It was *a* house, but I don’t think it was *the* house’, where *a* and *the* are plainly attributes. In short, a frequently recurring arrangement of elements may become habitual and not require a vivid discursive analysis for its utterance.

As this circumstance shows, discursive analysis is not an absolute thing: associational identification shades into it. In most languages we find, accordingly, elements that are but partially independent. In our schematic representation above, the stage in which *me-tilu* ‘white-rabbit’ and *me-ko* ‘white-fox’ are used, but neither *me-* nor *-tilu* nor *-ko* are as yet used independently illustrates this. In such an English sentence as *He suddenly ran across the field* there are several such partly analyzed elements. The element *suddenly*, for instance, divides itself into *sudden* and *-ly*, but since the latter cannot be used alone, the analysis is not discursive but merely associative. The same is true of *across*, where *cross* does, in related senses, occur alone, but not so *a-*. The *r-vowel-n* of *ran* occurs also in *run*, and the vowels [æ] and [ʌ] of these two forms are felt to express the relative time of the action, but neither is an abstract *r-vowel-n*, as a term for the action itself regardless of time, in English conceivable, nor is an [æ] or an [ʌ] ever spoken separately to express the time alone. In *father*, *mother*, *brother*, the *-ther* is common to all and thus expresses a common element of all three; or, if we add *sister*, we may say that dental-plus-*r* does so, but neither *-ther* nor a dental-plus-*r* can be used alone in some such sense as ‘near relative’: there is but the suggestion of an analysis. Such imperfectly separable elements are called *formational elements*, as opposed to the independently recurrent units of analysis, *words*. Words only and scarcely

ever formational elements, can be dealt with as conceptual units of general thinking.

4. The naming of objects. If we look into concrete experience, we find that all of it centers round objects. An independent (or, as we say, abstract) quality, action, or relation never occurs. The sound-reactions, therefore, which form language can originally have been called forth, in so far as they refer to perceptual experience, only by objects. Words for qualities, actions, and relations we must suppose to have been evolved in the later course of speech-history.

The linguistic expression of an object-experience, then, is the simplest type, psychologically, of such expression. It is a sound-complex heard and uttered in connection with a number of successive concrete experiences, each of which exhibits certain dominant elements. The words *rabbit* or *book* are associated for each speaker with a long series of experiences having certain dominant features in common, much as these experiences may have diverged in their other features.

Even here we see a certain degree of abstraction. In speech or thought the sound-expression may be used not only for a given object exhibiting the dominant features, but also as a representative of all objects exhibiting them. In a general statement about 'the rabbit', 'books', or 'a triangle' these words save us the task of picturing successively all the rabbits, books, or triangles we can recall or imagine: we need only dwell on the word and the associated dominant features, such as a vague visual image of a rabbit, a book, or three intersecting lines. Thus, to repeat, the easily handled general concept, — the basis of logical thought, — is a product of language.

There are numerous languages, especially on the Ameri-

can continent, which have not gone beyond the naming of objects. In these languages the qualities and actions of objects, which in concrete experience never occur apart from objects, are in expression also always connected with them. 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' — in terms of our diagram, of *me-tilu* or *me-ko*, never of *me*. Every word is an object-expression; qualities or actions are never as such expressed by separate words. One cannot say 'kills' or 'killing', for instance, but only 'his-killing-of-it' or the like. This state of things forbids any distinction in speech between predication and attribution, for, as predication usually has as its subject an object and as its predicate an action or quality, its explicit expression depends on the existence of action-words and quality-words as separate words. Hence in these 'nominal' or 'attributing' languages such utterances as 'white-rabbit' correspond equally to our predication 'It is a white rabbit' and to our attributive 'white rabbit', and such a locution as our 'The rabbit is white' is inconceivable: one could only say 'This-rabbit (is a) white-rabbit' or 'This-rabbit (is a) white-thing'. Owing to the constant possibility of use as what we feel to be complete predications, the words of such languages are often called 'sentence-words'

In addition to the object-expressions such languages have only *pronominal* words. These are expressions of purely deictic value, referring to the speaker in words for 'I', the one spoken to in words for 'you', the object near the speaker in words for 'this', the object farther away in words for 'that', and so on. Their origin is probably to be sought in sounds uttered in connection with deictic movements. At any rate, in most languages

they resemble exclamations: as in English, they are usually short words, and occasionally they differ phonetically from the rest of the word-stock, as when in Russian the word for 'that', [ɛː tət], is the only native word beginning with the sound [ɛ]. These pronominal words thus resemble the purely emotional responses to experience which we shall meet as 'interjections'.

5. The development of abstract words. Language at the nominal or attributive stage has not attained a habit of abstraction which English, for instance, has, — namely the habit of separating, as independent expressions, the qualities and actions of objects. That our concepts of quality and action are purely linguistic is evident upon a little introspection. Experience contains qualities and actions only in connection with objects. If we try to think, apart from the word, of 'white', we can do so only by picturing an object (such as a flat surface) or a succession of fleeting objects whose white color we hold dominantly in our attention, neglecting their other features. Similarly, the concept of 'run', 'running', if we exclude word-images, can be pictured only as a man or an animal or a succession of such running. This is due to the fact that in actual experience there is no such thing as a quality or an action apart from an object. What language does is to furnish a fictitious object, namely the word-symbol, by which we represent the unimaginable abstract concept of quality or action.

The historical origin of words independently expressing quality or action is various. In English such words as *white* used to mean 'white-thing', the 'thing' being defined as to gender, number, and case, and such words as 'runs' used to involve also an actor, meaning 'he-runs'. As to the psychologic character of the expressions as we have them today, the historic origin is, however, immaterial.

In the words expressive of quality the dominant element is a single common feature, permanent in each of a number of objects whose other elements are various. This permanence of the dominant element allows it, in its association with the word, to remain vivid: such a word as *white* is joined to a lively image of a single object or of successive shifting objects of white color. In the action-words the dominant element is a feature also common to a number of objects, but in all of them impermanent. As soon as we attempt to picture the object vividly, the action is lost: the object stands immovable, however suggestive of action we may allow its pose to be. Consequently the perceptual dominant element, aside from the word, of an action-word is never vivid: as a rule, in fact, we do not attend, in thought, to any element except the word itself, which has thus become dominant in the whole complex. That is why the experiment of thinking of an action-concept without using words is much more difficult than in the case of a quality-concept.

The psychologic character of the more abstract words, such as in English, the prepositions (e. g. *under, over, in, by, across*), the conjunctions (e. g. *if, though, because*), and the abstract nouns (e. g. *cause, result, essence, being, relation*), while in itself interesting, need not further concern us here, if we remember that the principle is the same as in the case of action-words. The dominant element when these words are used is always the word itself; in any given occurrence they resolve themselves into concrete collocations or successions of objects, which objects we do not stop to picture more than vaguely when the word is being used.

6. Psychologic composition of the word. The word is thus psychologically a complicative association of those perceptual and emotional elements which we call its

meaning or experience-content with the auditory and motor elements which constitute the linguistic symbol. Where reading and writing are practised the visual and motor elements of the printed and written word join the auditory and motor of the spoken. Disturbances of these associational habits are the much-discussed phenomena of the aphasias.

Among the elements constituting this complex the dominant may, according to individual disposition, be visual, auditory, or motor; whether the linguistic elements alone or the experience-elements also shall be dominant, depends, as we have seen, on the character of the word: in object-words, and, in a different sense, in quality-words, elements of perceptual experience may dominate, while in action-words and more abstract expressions the linguistic symbol is dominant, the experience-elements being but vaguely imaged. This is why in absent-mindedness or aphasic conditions the most concrete object-words (such as proper names) are first and most frequently forgotten, the quality-words next and the abstract words last of all. In learning languages, on the other hand, we succeed better in remembering object-words and quality-words, which we can associate directly with perceptual images, than action-words and abstract words (prepositions, conjunctions, particles, etc.) which we tend to associate only with words of our own language which either do not correspond exactly, or, in any case, remain dominant to the exclusion of the foreign words.

7. Grammatical categories. In the analysis of the total experience into independent elements and in the partial analysis of the latter into formational elements, certain types may become habitual and finally universal in a language. For instance, in analyzing a total experience we who speak English always speak of an actor

performing an action. Many total experiences really are of this type, e. g. *The rabbit ran*; in English, however, this type has been generalized to furnish the mould for expressing all total experiences, — that is, for all sentences, — including those which really involve no actor or action, such as *The rabbit is white*. Here we use a fictitious action-word, *is*, of whose action the rabbit is supposedly the agent. In Latin, for instance, this would not have to be done: one could say *Cuniculus albus*, literally 'Rabbit white', where no such fiction is maintained, — and the same would be true in Russian. In short, actor and action are grammatical *categories* in the English language. Categories like this one, which universalize certain relations between words, are *syntactic* categories.

In the imperfect analysis of words into formational elements also there may be categories. These are called *morphologic* categories. An English verb-form, for instance, always contains an imperfect analysis into a formational element expressive of the action itself and one expressive of its relative time: one can say *he runs* or *he ran*, but there is no indifferent form, as, for instance, in Chinese, where [p'ɑǒ/] means, from our point of view, 'runs', 'ran', or 'shall run', indifferently, but, if the element of time is vivid in the total experience, one can say also, in two words, [p'ɑǒ/la] 'ran' or [jaǒ\p'ɑǒ/] 'will run'. That is, just as we always express future time in a separate word (*will run*), so Chinese also analyzes out the past-element as a separate word. Latin, on the other hand, has also a future category: *currit* 'he runs', *currit* 'he ran', *curret* 'he will run'. We say, then, that the formational expression of present or of past time with actions is a morphologic category in English, that of present, past, or future time, in Latin.

The grammatical categories, then, though always based

on relations common in experience, universalize these, so that they must be formally expressed even where they are not actually present or where there is no occasion for focusing them, even though they are present. We must express actor and action in a sentence and tense in a verb even where they are not very vivid in the total experience, — where, respectively, a Latin or a Chinese speaker could ignore them, just as we ignore numerous unessential elements of every experience, — and also where they are not present at all, as in *Mount Blanc is high*, where the experience presents neither action and actor nor any particular tense.

The normal speaker, however, blindly accepts the categories of his language. If he reflects upon them at all, he usually ends by supposing them to be universal forms of thought. In linguistics, of course, we must be careful to distinguish between categories of a language, be it our own or another, and the features of experience, as apart from any particular language.

8. Psychologic character of the linguistic forms.

The categories of a language originate in the extension of some oft-repeated type of expression. In this they are like all linguistic forms. To the speaker they seem fixed and universal forms of expression and even of thought; actually they are habits of association in vogue in a community. Owing to the similarity of dominant elements, an experience awakens a series of past experiences and is designated by the same word. Owing to the uniformity of the process of analyzing a total experience, all such analyses, — that is, all sentences, — may receive the form of certain numerous past ones: thus arise our syntactic categories. All words presenting certain common features, — belonging, for instance to a certain class, — may take on formational features

that corresponded to experience in only a limited part of their occurrences, — such features as time-expression: morphologic categories.

The best evidence of the purely associational nature of linguistic forms lies in their change in history. The word *dog* once meant 'mastiff'; it came, however, to awaken predominantly the idea of dogs in general, with the species, not the breed, as dominant feature, until it became the universal expression for all these experiences. At one time English sentences could be formed without an actor and an action, but the process of forming a sentence came, in the course of time, always to awaken the process of forming actor-and-action sentences, until this type became universal. Similarly, when a new action-word comes into the language, such as the German *waltz* or the Japanese *hara-kiri*, it recalls the verbs of our language with their time-forms and unconsciously and immediately submits to the morphologic tense-categories, receiving the past-forms *waltzed*, *hara-kiried*.

Thus language is not, as the sight of a grammar and dictionary might lead us to suppose, a system of unalterably fixed and indivisible elements. It is rather a complex set of associations of experiences in groups, each of which is accompanied by a habitual sound-utterance, — and all these associations are, like all others, certain of displacement in the course of time.

9. Psychologic motives of utterance. True to its original form of an outcry under the most violent experiences, language is most easily realized under emotional stress. Some violence of experience must normally be present to call forth loud expression. If this emotional violence is the dominant cause of the utterance, we speak of *exclamation*. Under the social conditions of linguistic development utterance with predominantly com

municative motive, *declarative* utterance, is a natural sequel. Likewise the *question*, an utterance expressive of uncertainty or incompleteness of an experience, is a weakening, as to dominance of the emotional motive, and a transference to communicative use, of the exclamation.

10. Interpretation of the linguistic phenomena. I have troubled the reader with a psychologic description which, though perhaps difficult, would have been all the more so, had there been appended to each step the examples from various languages that would illustrate the specific linguistic phases of the phenomena in question. The most important of these shall in the next chapter be so illustrated. After what follows the reader may find the psychologic description more intelligible, if he will go back to it; so much is certain, however, that the phenomena themselves, without consideration of their mental significance are unintelligible or rather, what is worse, liable to a post factum logical interpretation which substitutes for the actual state of things our reflections upon them.

The points of view from which linguistic phenomena can be regarded are of course various. For those unfamiliar with them the greatest importance lies in the realization that the categoric and other distinctions of one's own language are not universal forms of expression or of experience. It is important also to remember that the meaning of any linguistic expression is due to the associative habits of those who use it. A deictic or a representative gesture is intelligible at once, because it owes its meaning to universal psycho-physiologic characteristics of man. Even a suggestive or symbolic gesture hardly ever fails of immediate understanding, for the constant analogy of the simpler gestures predominates over associative transference. Vocal language, quite otherwise, though

it has its origin in the direct reactions of our organism to experience, is the result of a very different development. The reactions which gave rise to it were reactions of movement, but the effect which became of self-satisfying and of communicative value, was the acoustic effect of these movements. Consequently even the simplest utterances furnished no analogy, comparable to that of the simplest gestures, by which every kind of associative transference and innovation might have been counteracted. The result is that no language has the character of a set of sounds in some way logically derivable from the experiences which they express.