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THE PSYCHOLOGICAL AND PEDAGOGICAL ASPECT OF LANGUAGE.

By MARGARET KEIVER SMITH.

The term language refers especially to the system of articulate sounds made by the human voice primarily with a view to communication between human beings. While it is indispensable to the mental development of every human being, it is not the product of any one mind, but of minds laboring under the necessity of intercourse with one another.

With the purpose of intercourse in mind, we associate the idea of voluntary effort with human speech. Probably for this reason, notwithstanding its mechanical side, human speech is very generally regarded as a mental operation, skill in the exercise of which seems to indicate a considerable degree of mental development.

Through a comparison of persons who have a limited control with those who have an extended control of language, and especially through a comparison of the mental power of a deaf mute who has not achieved the use of language with the mental power of one who has learned to speak and write, we are justified in assuming that in the intellectual development of the human being, language performs a very important part. From such observations as have been made, we judge that the deaf mute, without the advantage of language, has a mental content of images and feelings alone, and that only through these states can an appeal reach him. His power of reflection is as limited as his power of abstraction. His physical desires are strong, and his power of self-control very weak, while his ethical sense remains entirely undeveloped. Romanes states that he has never been able to find a case where a deaf mute without education in language, and, indeed in word language, has been able to acquire any idea of supernaturalism. Even with the best aid of sign-making, *i. e.*, gestures, he has been unable to acquire any idea of a divine being.

The importance of language in connection with mental development may be perceived in the lower animals quite as readily as in the human being. The excess of intelligent attention and memory in the domestic animals as compared with the same qualities in wild animals may very well be attributed in great part to the language of human beings to which the

former in the course of ages have become accustomed. It is a noteworthy fact that in the training of domestic animals, much more dependence is placed upon the use of words than in the training of wild animals. The stories that we have of the dog and the horse, not to mention those of the elephant, or even of the bird family, lead us to infer that those animals not only understand words and sentences, but that they actually show signs of at least primitive judgments. The adaptability of domestic animals to new conditions, and even to modern inventions, may justify us in supposing that the language of ages has brought them into a close resemblance to the human animal, and that their generalizations differ in degree rather than in kind from those of man. As a rule we do not assume that even the most intelligent domestic animals surpass even the lowest of the human family, but we not infrequently hear the owner of a dog or horse proudly assert that the creature possesses more real knowledge than many a man of his acquaintance.

Through derived uses, the application of the term language has become so extended that it stands for any and all means of communication that are in any degree systematized.

Thus, in addition to the language of speech, we have gesture language, and tone language, the one indicating a system of regulated bodily movements, the other working out into a system of sounds developed from the tones of the primitive human voice.

Both gesture and tone language are designed for purposes of communication, and are adapted probably from the crude motions and harsh cries of primitive man (possibly even of the brutes) in his efforts to attract other creatures of his kind.

As a means of emotional expression, both gesture and tone serve much better than as a means of intellectual expression. Among gestures we have those that indicate states of feeling merely as pleasant or unpleasant, and gestures that indicate such emotions as fear, anger, love, pride, etc.

In the second stage we have modulated movements intended to express definite mental states, *e. g.*, the nod of affirmation, or approval, the shake of the head implying negation, or disapproval, the wave of the hand in invitation, and the wave of the hand in repulsion.

Among tones we have those that express emotional states, as the inarticulate murmur of affection, the growth of rage, the whine of fear, etc.

The second step in tone language is toward articulate speech, as the instinctive babble and chatter of the child as it imitates sounds. Something of the same tendency may be observed in the chatter of the parrot, mocking bird, etc. Possibly this step may not be regarded as a step in language, inasmuch as the

purpose of communication is not so much in evidence as in the first step. It seems more properly to be a mechanical preparation for articulate language which is to come later.

As in the case of gestures, in connection with articulate speech, tones are used in modulated and regulated forms for the purpose of enhancing the effect of words which, if used alone, would merely arouse intellectual states. The effectiveness of tone and gesture lies in their use as an outlet for the emotions, and as a means of arousing corresponding emotional states in those who are subjected to their influence.

The inadequacy of these so-called languages lies in the impossibility of their expressing many definite or complicated ideas and connected thoughts. They are both bound to sense-perception, and for the most part are very clumsy instruments in securing generalizations of any high degree of abstraction. As a matter of fact the elaboration of gesture and tone into any extended system of expression is mainly due to the use of words. No people without a well-developed system of articulate language has ever done much with the drama or with music. The highest use of gesture and tone can only be realized when they occupy a subordinate position, viz., that of supporting and emphasizing the spoken word. The skillful speaker realizes their value when he wishes to gain a hearer whom he cannot convince by reason.

The fundamental principle of all forms of spoken language is that of connecting an idea in the mind of one individual with some external sign which is intelligible to another individual. This sign becomes intelligible when it is attached to similar ideas in the minds of the two individuals. For purposes of general comprehension, this sign must be constant. With this sign as a basis, a system of expression may be arranged by means of which mental states are not only indicated, but by means of which thought is formed, defined, elaborated, and transformed into the force that moves the world.

Apart from the convenience of a means of communication, a system of expression is of the greatest importance to the individual, in that it is a means of bringing order, clearness, and purpose out of a chaos of mental content. Without a system of expression, the mind must remain confused, indeterminate, characterless, and ineffective. A writer has said that next to the hope of immortality, expression is the highest hope of the human spirit. Perhaps with equal truth we may say that without power of expression, the hope of immortality could never have been conceived.

While admitting tone and gesture to be legitimate and necessary means of expression in primitive stages of development, we must also admit that for the development of civilization, a

more highly specialized means of expression is necessary. This demand seems to be met by articulate language. As the sign of an idea, the spoken word is constant, while at the same time it admits of modification and elaboration sufficient to meet the needs of the highest intellectual development. Because it is the instrument best adapted to this use, the word has become the preferred means of communication. In every way, the use of the word is economical. Being the most conventional sign of expression, it is the least liable to be misunderstood, while at the same time it is purer and more definite, more condensed, and more effective than any other sign.

Romanes gives four divisions of articulate language. First, the meaningless imitation of sounds heard; second, the instinctive articulation of syllables; third, the understanding of articulate sounds or words; and fourth, the intentional use of words as signs or names of ideas, *i. e.*, the use of words with a meaning attached.¹

Corresponding to the articulate side of language he gives the intellectual aspect in five stages² viz., first, the indicative stage, in which there is an intentional sign though it may be expressed by gesture, tone, or word; second, the denotative stage in which intentional marks are indicated by names. The name in this stage is reproduced merely by mechanical or special association. Like the first this stage is peculiar to many of the lower animals as well as to human beings, and marks no great intellectual advance. The name is in this stage merely a mechanical convenience.

The third, or connotative stage is that in which a name is given to an object by reason of some quality or qualities which it possesses. The word contains a meaning, of which the application is extended to other objects possessing characteristics in common with the first, so that a grouping is made, and the word becomes the name of a class. This is the concept forming stage, or possibly the stage of classifying and naming perhaps without a full consciousness of the extension of the application of the word. This stage probably marks the dividing line between the human being and the lower animal, as the grouping of objects on the basis of common characteristics implies a higher intellectual power than we have as yet observed in brutes.

The fourth or denominational stage is an extension and elaboration of the third, the connotative word being now applied consciously and intentionally. The last stages is that of predication in which denominative concepts are combined into

¹Romanes: "Mental Evolution in Man," Chap. 7, p. 121. (New York, 1898.)

²*Ibid.*, pp. 157-162.

propositions in such a way that the content of one concept is affirmed to partake of the nature of the other to a greater or less degree.

The stages of denomination and predication so clearly indicate a higher intellectual development than appears possible to the brutes, that some psychologists and philologists, upon this ground alone, have assumed for man a special creation.

The power of articulate language as a means of mental development is shown when the word is used as a symbol or type which, while it is constant as a sign, yet is sufficiently movable to admit of such modifications of meaning as the intention or feeling of the individual may dictate. In this lies the real power of predicating, or of attributing varying qualities, or varying shades or degrees of the same quality to an object. It is the power to use one idea in such a way as to modify the application of another idea, and thus to form a new mental product the apprehension of which indicates a decided advance in intellectual development. When an individual can consciously use a word to indicate a class of objects possessing certain essential (as distinguished from accidental) characteristics in common, he has achieved the foundation for the highest mental operations.

The importance of articulate language lies in the fact that without the word, the concept, *i. e.*, the generalization, cannot be held before the attention in such a way as to form an element of thought. Without it no effective thinking can be done, and consequently no clear rule of action can be evolved. It is the agent that differentiates a definite idea, or concept from the confused mass which characterizes the content of the primitive mind. Without it, the mind must remain primitive and confused.

The need for adaptation to the conditions of a progressive civilization creates the necessity for classifying the mental content, *i. e.*, for evolving order and clearness from obscurity and confusion. The human mind in its incapability to grasp in detail the multitudes of objects that are daily and hourly forced upon the attention, is saved from fruitless and even dangerous effort by the word and the proposition which serve as a means of preserving intellectual unity.

In addition to the use of the word in controlling abstract thought upon concrete things, we find a higher use, by reason of the concept name itself becoming an object of thought, thus furnishing a new factor in the elaboration of propositions possessing a higher degree of abstraction than that brought about through generalization upon concrete objects.

To the ordinary individual who seldom rises to the region of higher abstractions, the influence of articulate language is also

of the utmost importance. Without it the attention does not rise above the primitive, curious attention of the brute, the savage or the child. Through the understanding which it carries with it, it rouses the liveliest sympathy among people. It stands as a support to memory, while it exercises a controlling, subduing, and directive power over the emotions.

The intelligent development of language implies a constant development of judgment and reason.

In the formation of the concept, we come to the dividing line between the perception of external, or concrete things (sense perception), and the apprehension of internal, or abstract relations (conception,—apperception).

Here the individual is first conscious of himself, and becomes free to do his own thinking. The extent to which he carries his generalizations (provided always that he classifies on the basis of common essential characteristics) determines the extent of his freedom and of his effectiveness.

Without the intelligent use of articulate language, probably no abstract judgments can be made; no consciousness of self, and consequently no ethical judgments can be evolved.

At this point we are met by a question regarding the pedagogical application of the theory of the dependence of all important forms of thought upon articulate language.

The function of pedagogy is to lay the foundation for developing later a broad minded thinking people whose activities may always be depended upon to work for the highest good of humanity.

In considering the relation between thought and language, we have regarded the beginning of real intelligence, the beginning of rational judgment, the beginning of generalization which lies at the foundation of reason and rational action as coincident with the use of the articulated word naming the concept which results from the free judgment of the individual. If this proposition be accepted, and if the alleged function of pedagogy be regarded as legitimate, then, in connection with the education of children, it follows that from the very beginning of school life, the development of intellectual language, *i. e.*, of the connotative, or denominative term, and the proposition, should receive special and careful attention.

In the United States, the teaching of language is difficult. If, among the tongues of Babel which surround it, the English language retains its characteristics, it must possess marvellous vitality. In the Northern and Western States, unless it be preserved in the schools, it can hardly survive. In not a few of the higher institutions of learning, strenuous efforts are being put forth in its behalf. Many professors whose time might be otherwise employed are obliged to devote no small portion of

their time and energy to the correction of the very imperfect language which the students bring to their work; a language so scanty at times, that instruction in other subjects can hardly be given until greater facility of expression in English is acquired. Yet with all that is done, we have reason to believe that the condition of our language in many parts of the country is but little encouraging.

A few years ago, a prize of some importance that for years had been given annually for a paper upon a literary subject was withdrawn from one of our oldest universities for the reason that among eleven hundred undergraduates, not one had presented a paper worthy of consideration.

Last year, an instructor in chemistry in a large American university wrote: "These students study chemistry! Why they can't talk. They can't spell. They can't read. They can't write."

In a recent number of one of our best magazines, a writer mentions the fact of a considerable prize being offered to undergraduates in a New England college for a paper upon a somewhat abstract subject. Only with the greatest difficulty was a production obtained that would justify publication, and when it appeared, it did not escape censure.

Within the last few weeks, an item has appeared in one of our best daily papers to the effect that eight young men, high school graduates from a Western locality, have successively failed in the examination for admission to West Point, and that in every case the failure was in common English subjects.

As a further indication of the discouragement, concerning our schools and their results, which seems to be felt, the writer has made a list of some of the charges which, from time to time during the last few years, have been preferred through magazine and newspaper articles against the students who enter the colleges and universities of this country. The charges collected read about as follows:

1. They (the students) cannot talk except in a jargon of their own composed of words that have no general application, and are therefore intelligible to only a limited number of people.
2. They cannot write in fairly good English. The words they use are largely the names of material things. Many young men and women of the high schools who present themselves for admission to normal schools and colleges are not capable of writing an ordinarily correct letter upon any subject whatever.
3. They cannot read. In attempting to read aloud, they display an amazing unfamiliarity with the printed page. They pronounce words very incorrectly, and give but little evidence that they understand their meanings. In attempting to read

silently, after perusing a paragraph, they cannot give a synopsis of the thought expressed. They not infrequently give evidence of knowing each word in a sentence, but are incapable of giving the thought expressed by those words when they are combined in the sentence.

They display a marked disinclination to use a dictionary. The unfamiliarity with this book is so great that one might be justified in supposing that in some of the institutions of learning in the United States, dictionaries have not yet been discovered.

4. They take little or no interest in literature, either prose or poetry.

5. They show little or no interest for intellectual pursuits; indeed, they awaken to genuine intellectual effort only with great difficulty. At present education seems to be crippled in its essential idea of intellectual life.

6. They take no special interest in public questions.

7. They know little and care less about social questions.

8. In the educational world, enthusiasms have become restricted, and are very difficult to arouse.

9. They have no special love of country. The fundamental principles of freedom do not appeal to young people; indeed they seem to be losing power with young and old.

10. Appeal to the ethical reason is made only with difficulty. There is a substitution of sensuous for spiritual apprehension, a taking of events at short range, instead of contemplating them in those wide relations in which they compose the universe. They cannot be said to realize moral responsibility in any adequate sense, and they show a lack of moral independence that promises unfavorably for the formation of character.

11. Such interest as they show is largely in connection with concrete things; for example, with the subjects of the laboratory, with the tactics of field sports, and with the commercial advantages that may result from an extended attendance at some higher institution of learning.

These are grave charges for serious-minded people to bring against the very best class of the youth of this country. The writers who make these statements are not prejudiced foreigners who might take pleasure in noting the weaknesses of our educational influences, but they are people who love the country so well that they would gladly open our eyes to the conditions under which we are at present living. Even granting that these evils be exaggerated, they are still sufficiently dangerous to cause anxiety on the part of thinking people who have at heart the best interests of the youth not only of the colleges and universities, but, also, of that larger class who lack opportunity for the broader development afforded by our higher

institutions of learning. No doubt more serious charges could be made, and indeed are made, against the youth and manhood of this country, both within and without the colleges and universities. A list of such charges of weakness, to call them by no harsher name, would include: heedlessness, self-indulgence, lawlessness, greed, brutality, sufficient to fill the mind of any ordinarily thoughtful person with the liveliest apprehension.

Every daily newspaper of this country, every day of the year, publishes events that show unmistakably that these charges are well founded. Even granting that only one tenth part of them may be true, the conditions are still sufficiently serious to excite alarm.

The question whether the schools have done, are doing, or possibly can do anything to influence our present social conditions is certainly a legitimate one. What possible connection can exist between our educational conditions, and the social difficulties that are at present perplexing the wisest men of the country?

During the past half century, a great change has taken place in the public school education of the United States. This change has affected not only the subjects taught in the schools, but it has reached as well the plans of procedure, the so-called methods of instruction.

About the year 1860, "object lessons" so-called were introduced into the schools. Later, these gave place to "objective instruction," and this in turn was succeeded by what has been known as "Elementary Science Teaching." Still more recently the schools have had a course of what we call "Industrial Education."

The principle, "first the idea, and then the word" so vigorously emphasized by Pestalozzi has dominated the educational effort of this country for a little more than forty years, during which time, the end and aim of school life, and indeed of home life as well, has been the acquisition of concrete images, *i. e.*, of ideas of concrete things. Everything that could appeal to the senses of the child has been presented to him. Every conceivable object has been subjected to sight, hearing, touch, taste, smell, etc. When the objects could not be brought into the schoolroom, the children have been taken to them, so that but little has escaped their attention. The result seems to be that our young people (if not also our adult population) have become addicted to things, and that they center their main interests and hopes of happiness upon the concrete world.

With the habit of occupation with concrete things for some twelve or fourteen years of the most impressionable period of life, we can hardly wonder that when a student goes to college he should show a greater disposition to occupy himself with

material things than with abstract questions. We can hardly wonder that later in life, the actual possession of a certain amount of plain hard cash should seem much more real, and far more desirable to him than a clear intellectual apprehension of a man's duties as a citizen, or of the moral distinction between *meum* and *tuum*. This would seem to be the logical outcome of excessive occupation with concrete things.

We can have no quarrel with "objective instruction" *per se*, nor with any form of instruction that leaves the child in a better condition than it finds him, but we must remember that there are other than material objects in a course of education, and it may be well to examine the scope of objective instruction as it is sometimes pursued in the schools, with a view to finding out whether it is calculated to meet the requirements of mental development.

In the first place the material object appeals to the senses, and to the senses alone. The psychical result of this appeal is a concrete image or an image of a concrete thing.

According to the previous experience of the child, and according to the degree of attention brought to bear upon the object at the time of presentation, this image is more or less vague. If the child has never before had anything like it, and if the attention be distracted by the presence of other striking objects, the chances are that no adequate image of the thing presented is formed.

Also, in childhood, the nerves of sense are often so incompletely developed, that the sensations formed through the excitation of eye, ear, etc., are totally unlike those which the teacher expects the pupil to gain, so that the mental product is no adequate foundation for the apprehension of other images to be gained through the presentation of other objects. In order that something like an adequately correct image may be formed, much time should be allowed for repeated observations of the same thing. Otherwise the mental content must be such that nothing but errors can result from its use in thinking. Just here is laid the foundation for that incomplete, inaccurate observation which Herbart has said "trains only dreamers and fools."

Also the clearness or vagueness of the image may be largely determined by the extent and kind of language used at the time of presenting the object. At best only the most simple images can be held before the attention without the use of words, and then but for a short time. The more complicated images depend for their existence upon the awakening of the intellect, which can only be secured through the use of language. The word, merely as the name of the individual image, is not sufficient even for the child of five years (perhaps it is

not sufficient for a normal child beyond three years). Images classified under the concept name can be held before the attention better, and, through the observation of their common characteristics, they become clearer than when each is observed individually.

The evil that objective instruction was intended to counteract was the acquisition of words without the ideas that they were intended to represent. This was the danger of learning books verbatim, as was largely the practice in the early history of public instruction. The stultifying effects of this process cannot be too severely condemned, and a reaction against it was inevitable. The dread of acquiring words without ideas has become so great that not a few teachers appear to be disposed to dispense with words altogether. However, since it is impossible to hold many ideas without words, and since words are indispensable to thinking, the last state of the children threatens to become worse than the first.

It is quite remarkable to find how few complete sentences, each containing subject, predicate, and suitable modifiers are exchanged between the ordinary teacher and his pupils. Presumably in every school, directions, questions, explanations, are given, yet if teachers were to review their own language, they would probably be astonished to find how few sentences composed of well-chosen words they speak in a day. Probably they would be still more surprised to find how few sentences, either correct, or incorrect, their pupils speak in a day. A sustained conversation between teacher and pupils is very unusual, frequently an unheard of thing. Yet it is only in conversation that individuals can learn to talk. A normal school student of more than twenty years stated recently that she never spoke for ten minutes uninterruptedly in her life. She thinks that she never talked in school for five whole minutes. She never conversed with her teachers, and she often spent days and weeks in school without speaking one complete sentence during recitations. Many a day she never recited orally at all. This is perhaps not an unfair representation of the language facilities in the ordinary public school. Questions that are asked are generally elliptical in form, often they are expressed in single words, while the answers are very generally sent back by the children in single words or phrases, not infrequently by the monosyllables "yes" and "no."

Very recently the writer found a young woman who went through her school course without ever reading aloud once, and who picked up such reading as she can do quite by chance.

It is not impossible that the wordless condition of the elementary public schools, may go far to explain the lamentable poverty of language on the part of high school, normal school, and college students.

In some schools, teachers may be found who express themselves well, but who seem to lack the power to secure fluent expression from the pupils. They seem not to recognize the fact that in order to be able to do his own thinking, a pupil must do his own talking.

Sometimes it is urged that in the schools the training in the use of language belongs to the work of the teacher of language. Even here, however, the language is often about as limited as it is in the recitation in arithmetic, and since the material object has also made its way into the language lesson, it is quite as concrete.

It may be remarked that the introduction of the material object into the language lesson is largely for the purpose of providing a subject concerning which the pupils may write. Just here it may be said that instruction in writing seems to be quite in excess of instruction in talking or in reading. The effort expended in this connection seems to be out of proportion to the results secured. Generally lack of power to talk connectedly implies lack of power to write. In both speaking and writing, thought is required. Children waste quantities of ink and paper, together with much energy, in trying to express in writing what they have never had an opportunity to think, simply because they have had no practice in using words to form concepts, and of using those concepts in oral sentences. If half the time which is spent in teaching pupils the art of written composition were spent in training them in oral expression, the results of the other half spent in writing would probably be vastly more valuable than they are at present.

In the work that was done before objective instruction was introduced into the schools, as before intimated, the children learned books by rote and recited them to the teacher. It was a chance whether the text was understood or not. Often no apprehension of the subject was gained. For the pupil's development, this was, of course, very bad, but upon the whole no worse than the accumulation of vague, fleeting, disconnected images, without, in many cases, words either to name or to classify them. Confusion and obscurity among images of concrete objects is just as great a hindrance to mental growth and to effective action, as confusion and obscurity among words. As to the rote-learning, we may say in its favor that the children had a much greater opportunity for speaking aloud than they have in objective work. The sentences were well constructed so that the right relation of subject and predicate was always secured. A copious vocabulary was also gained. Another advantage was that pupil's not infrequently studied their lessons aloud, thereby becoming accustomed to the sounds of

their own voices, so that they were free from confusion when required to speak. There is at least a probability that the habit of silence during school hours during the early years, may have something to do with the rigidity of the lower jaw which is so marked in a large majority of students when they attempt to speak connectedly for some time, or when they attempt to read aloud. Herbart reports that Pestalozzi, himself a very indistinct speaker, secured very fine results in articulation and expression on the part of his pupils by simultaneous oral recitation. Indeed, the well-known story of Pestalozzi's celebrated "hole in the paper," furnishes ample grounds for the inference that whatever the Swiss educator may have done for the development of the idea, he never once neglected the training in language necessary for the formation of concepts.

In connection with the study of objects, one great difficulty is that not infrequently both teacher and pupils regard the material object as the real object of study, instead of which it should be treated merely as a means by which the truths of the subject presented are to be illustrated. Where many and varied objects are presented, this misapprehension appears inevitable. The results are to be seen in many departments of school work. Instead of knowing botany, many of our students know the names of individual plants, and can enumerate their specific parts, together with the length, thickness, form, and color of each part. Notwithstanding the study of objects in both botany and zoölogy, it is not impossible to find high school students who cannot state anything approaching an adequate distinction between a plant and an animal. Instead of knowing zoölogy, the pupils know the hair of a dog, the toes of a horse, and the feathers of a canary bird. They have neither the concepts nor the language necessary for the intelligent statement of principles or rules.

In arithmetic, illustrative objects are numerous, and, as in the other subjects, are continued too long. After the age of seven, concrete objects are probably a hindrance to the apprehension of this subject. Children do not know arithmetic. They know that two blocks and two blocks make four blocks, and that two blocks from four blocks leave two blocks. After the objects are removed, the pupils are still held down to concrete things by the substitution of denominate numbers. It is not impossible to find, even in high schools, pupils who can neither add, subtract, multiply, nor divide, without making most amazing blunders. At this moment the writer has a vivid memory of a young normal school teacher (a graduate of both high school and normal school) weeping bitterly because she could not find the dimensions of the platform in her class room, her principal having given her permission to cover

it if she would tell him how many yards of carpeting would be required.

As to algebra, the concrete processes of adding, subtracting, multiplying and dividing may be fairly well understood, but one not infrequently finds students who cannot shorten a process of any kind by applying a known principle.

Even in grammar the influence of the inaccuracy arising from the study of concrete things may be seen. At least one high school pupil described an abstract noun as an "object not composed of matter, but yet a liquid, for example, water."

The complex character of geography seems to have demanded for its elucidation the introduction of multitudinous and varied objects into the schoolroom. A few years ago, the writer attended an exhibit of things to be used in teaching geography. The material filled two large rooms, and the visiting teachers were cheered by the information that the supply was by no means complete. And yet, the knowledge of geography as displayed by high school pupils is at times calculated to move one to tears. Among those that go to normal schools, some have been known to locate London and Berlin in south latitude. Others have ascribed to the earth two motions, viz.: "notation" and "remuneration." Some have never heard of latitude or longitude, while still others prove themselves quite innocent of any knowledge of mathematical geography whatever. A few months ago a letter addressed to the director of geography in perhaps one of the best training schools for teachers in this country brought this remarkable information: "We do nothing whatever with mathematical geography, as the teachers themselves know no more about it than the children do."

In this connection, it may be remarked that the material objects presented in connection with the study of geography may be divided into two classes, viz.: natural, and artificial objects. The natural objects presented are not infrequently entirely aside from the purpose of geography, being calculated rather to illustrate truths in agriculture, manufacture, art, etc., than designed to make geographical principles intelligible. One writer in this connection presents hints for a study in color, which he admits is not exactly geography but defends his presentation by asserting that color is a very interesting subject anyway. Much of the material suited, perhaps, to the study of physics, chemistry, etc., but presented in geography, must be explained on the same principle. Concrete objects presented in this manner must prevent the acquisition of geographical knowledge no matter how excellent the objects in themselves may be. Perhaps even a greater hindrance lies, however, in the presentation of artificial objects under the name of apparatus; as, maps, globes, mouldings, etc. These objects

are only useful when employed to illustrate a truth, and having filled their purpose, they should at once be dispensed with. After the illustration has been made, the continued use of the material object can only weaken the apprehension of the abstract truth, and must result in the thing assuming more importance in the mind of the pupil than the truth which we wish him to grasp. The object is remembered long after the lesson is forgotten. As an illustration, may be mentioned an incident of a number of normal school girls of about sixteen or seventeen years who were required to assist in laying out a plan of their State on half an acre of land in the school grounds. After an hour's work, one day, during which the director (an experienced and skillful civil engineer and a good teacher) had given very clear illustrations and explanations, the girls went to their class room, and looked at a sand model of the same State. "Oh, girls!" exclaimed one, "How much more satisfactory this is than that thing out of doors!" "Yes, of course!" answered another, "Because it is so much more like the real thing!" "What is the real thing, Emma?" asked a puzzled teacher who was present. "Why, that!" responded Emma as she pointed with an air of conviction to a map of the State which hung on the wall. Further conversation revealed the fact that all the girls were wondering why the "Professor" should make a representation of the map out on the grounds.

The globe used in geography very easily becomes the earth, and may greatly hinder the apprehension of facts concerning the earth itself.

A story is told of a bright school boy who had shown himself remarkably skillful in the use of maps and globes; when he heard a gentleman say that Russia had sent fifty thousand men into Germany, he asked his father how it was possible for so many men to stand upon the small space which stood for Germany on the map of Europe. This very well illustrates the distorted mental content which the excessive use of artificial objects (or indeed, the excessive use of any material objects), furnishes as a mass of ideas for the apprehension of new knowledge. A very successful teacher of geography stated that she was better able to develop the necessary ideas in the minds of her pupils by means of carefully chosen words, than by means of any concrete material that she could find.

In connection with the use of any material object as a means of illustration, careful and adequate language on the part of both teacher and pupil is very necessary. The lesson is not finished until the language of the child convinces the teacher that he is in possession of the concepts which the lesson was calculated to furnish.

It is sometimes urged that, if sense-perception be exercised,

and if concrete images be formed, later in life the pupils will make their own generalizations. This is very like, and quite as futile as the assertion which the people who formerly defended rote-learning were in the habit of making, viz.: that if the pupils learned verbatim the author's generalizations when young, later in life they would fit their experiences to them, and thus come to understand them. As a matter of fact, the latter proposition appears to be the more valid of the two. Students who have had years of school life do not show any special tendency to make their own generalizations.

When, by the nature of the subject, abstract language is required by them, they construct sentences that have at times no signification whatever, or else they say the very opposite of what they mean. A recent graduate being interviewed regarding her apprehension of a definition wrote: "A definition, psychologically speaking is an optical image." When asked to examine this statement, and to criticise it, after some reflection, she declared that she could see nothing wrong with it. Still another, a student of Ancient History, wrote: "The Assyrians became so powerful that they compelled another nation to come over and subdue them."

A third, being required to describe the "Salic Law," wrote: "The Salic Law was no woman or son of a woman could occupy the throne."

A fourth being questioned concerning "Westminster Abbey" wrote: "Westminster is in Montana, Abbey is in Africa."

These amazing statements, delivered with an innocence and a matter-of-course manner that leaves one somewhat dumb with astonishment, are a fair indication of the character of the ordinary expressions of these young people. It is perhaps no matter for wonder that such students should show little or no interest in abstract questions, or in the reading of books that present subjects in the smallest degree abstract. It is perhaps not too much to say that there are many young men and women students twenty years of age, who have been at school at least from ten to twelve years of their lives, who cannot possibly carry on a conversation on any topic beyond the every day happenings of their immediate neighborhood, and of these, they cannot give a listener even a fairly correct idea. When together, with no older persons taking part, their conversation presents a curiously intermingled mass of trivial personalities, expressed almost entirely in concrete terms, relieved and ornamented by slang expressions so specialized that a stranger cannot even guess their meaning. A somewhat appalling thought in this connection is that out of such material a by no means small portion of our public school teachers is constructed.

Since Pestalozzi worked much more by intuition than by

rational insight, it is somewhat difficult to determine just how far he apprehended the scope and the significance of his own procedure. From the interpretation which Herbart has given of his work, however, we believe that he advocated the use of objects in instruction only so far as they were calculated to secure to the child clear images, from the combination of whose common, essential characteristics the concept might be evolved. The denominative term and the proposition was the ultimate aim of the lesson.

The Pestalozzian method of instruction as it was interpreted by Professor Hermann Krüsi, and as it was pursued for the first thirty years at the Oswego Normal School, objective though it was in character, made provision at the close of every lesson, or series of lessons, upon a subject, for generalizations which put the pupil in possession of concepts that were developed through the exercise of his own individual comparison and judgment. The development of "perception, reason, judgment, conception, memory, and language," constituted the object or general purpose of every lesson, and no recitation was considered a success until this purpose was achieved.

As time has gone on, the tyranny of things seen has, to a large extent, excluded things not seen from the schoolroom. In objective work, generalizations appear to be more and more neglected, and, except in a casual and careless way, do not occur. Consequently, the intellectual processes beyond mere primitive attention are not adequately developed. The lack of purposeful connotation implies lack of concepts, which implies lack of power to think except in the crudest fashion.

As in Pestalozzi's practice, so in Herbart's theory, we find marked and ample provision made for the development of concepts, and of power to generalize. In the "Six Interests" and in the "Four Steps of Instruction," only in the first of each is occupation with concrete things implied. The speculative and æsthetic interests, as well as those of the family, society, and religion, all involve the consideration of abstract relations, while the second, third, and fourth steps of instruction afford the largest opportunity for abstract thinking, and for the development of intellectual language. It is doubtful, however, whether much attention is paid to any but the first steps of the Herbartian instruction. Teachers have, in many cases, not been able to understand the importance of association or system, or even of application in their work. As a matter of fact, the first step is only of real value in proportion to the work done in the three succeeding steps. The time spent upon the latter part of the lesson is of the greatest possible value in saving occupation with many things. Herbart, himself, warns teachers against mistaking much occupation with things for

much understanding of principles. He asserted that with only Homer's Iliad as material, he would undertake to develop the six interests in such a manner as to form the foundation for a well-rounded character.

In connection with the use of material objects in the recitation, are two conditions which may, in a way, explain the limited use of language in the class room. The first is that the distribution and collection of material, consumes a large portion of the time allotted to the recitation. The second is that the handling of many different things appears to exert an influence which is unfavorable to connected thinking. As the care and condition of the material is the concern of the teacher, one can understand that she may be so fully engaged with individual things that she has little time or energy left for the real teaching that ought to accompany the presentation of objects.

A teacher of some experience, with young teachers in training in normal schools, states that young students who, when they first enter school, develop considerable enthusiasm for abstract studies, after they have been in the practice school as teachers for ten weeks, upon returning to the normal department for further study, display a marked lack of interest in abstract work. There seems to be an apathy and a difficulty in becoming interested that can hardly be overcome. Principles are not understood, apparently, largely because these students do not develop sufficient energy to apply them. This teacher states: "The condition is not exactly indifference and not apathy. Rather it may be regarded as a complete reaction from tension. The handling daily for ten weeks of some thousands of objects, and the observations of their obvious relations so disperses the attention that these young teachers seem to partially lose their powers of concentration. They can be appealed to only through the senses, and then not for long at one time. Also, they seem less able to take care of themselves during study hours, and are frequently complained of for lack of self-control. They talk about little things not worthy of expression. The students who have done only the abstract work are hailed with relief by both departments, though these also do inferior work after they have returned from their ten weeks' teaching.

Some idea of the number of things handled during a single lesson in Art may be gained from the following data :

For a class of 40 pupils.

1. 40 trial papers,
2. 40 other papers,
3. 40 bowls,
4. 40 times water poured (in each bowl),

5. 40 paint boxes,
6. 40 brushes,
7. 40 specimens from which to paint.

Total, 280 objects.

This number of objects may vary slightly, but not essentially. At the close of the recitation these objects are to be collected and put away, thus making necessary the handling of 560 objects in thirty minutes. Sometimes the teacher employs the children to aid her in distributing and collecting material, but this does not lessen the number of objects handled. It only distributes the handling among more people; nor does it lessen the necessity of the teacher's attending to the individual objects, both in getting the material ready and in putting it away.

If the dispersion of attention incident to handling and caring for so many different things be perceptible in a teacher of ten weeks' standing, what effect must it have on a teacher who works in this way habitually a year at a time?

It is not impossible that this kind of work might go far to explain the apparent intellectual arrest not infrequently observed in teachers who have exceeded five years of continuous work in the primary grades. If adequate investigation could be made, it is not impossible that some peculiarities of much kindergarten and industrial teaching could be explained. As a matter of fact, concrete details do seem to occupy the attention of many of our teachers to the exclusion of abstract questions. At this moment we have in mind a teacher of "Decorative Art" as it is pursued in the public schools. She saw the objects in a landscape, as they would be if she were to represent them in a design on a cardboard of eight by ten inches. When she looked at a sunset, she became immediately troubled to know what proportions of several paints ought to be put together in order to get the glow. In the same school with this teacher was another who told the pupils of her class that the forms of nature were based upon the Prang models. The teaching of the Prang models had been a specialty of this teacher's for some time, and she saw signs of them everywhere.

It is a question whether the strongest mind can long withstand the deteriorating influence of constantly pointing out the characteristics of concrete things. The unsatisfying nature of such work, perhaps, shows itself in a curious restlessness on the part of many of our teachers who seem to be always seeking and never finding. They are eager for improvement and wander hither and thither to clubs, lectures, associations, etc., but it is interesting to observe the excuses which they will make even to themselves, to avoid sitting down to write a simple paper, or to do an hour's hard reading.

If the influence of individual things is deteriorating for a teacher who has some power of resistance, what must it be for children who cannot escape them?

A few years ago the writer had an opportunity to learn the condition of a graded school of five hundred children,—from the kindergarten through the last grammar grade. In the United States no school existed that had for so many years been so thoroughly conducted upon the principles of "objective" "Elementary Science," and "Industrial Methods." Through a change of principals the fact was discovered that the school was beyond the control of the teachers. Teachers from an advanced department came into the lower grades to aid in bringing something like order out of chaos. The children of the three lowest grades were in much better condition than those who had been longer in the school. In the grammar grades were pupils long past the age for admission to the high school. Year after year they had failed in their examinations, until finally there was no hope of their ever being able to enter the high school. The restlessness, excitability, and irritability of the whole school were very marked. The older pupils were noisy, insolent, and ugly. At times they utterly refused to work. The reading and writing throughout the school were incredibly poor, while the work in arithmetic was below that of any other subject. The power of attention was extremely limited, and, if a persistent attempt to hold the children to work were made, many children were attacked with sudden and violent headaches. Through a change of teachers, a change of subjects, and a change of procedure, a change for the better was effected, and an outbreak of school hysteria, or at least chorea, was avoided. The cause of the difficulty seemed to be a long course of ill-digested, or wholly undigested "objective instruction."

One of the most serious difficulties resulting from constant occupation with material things, is the consumption of energy involved. Any person, who, at any time in his life has been addicted to museums, "Worlds' Fairs," etc., will remember how soon during his observation of objects, fatigue set in, and how utterly incapable of thinking he became after an hour or two. Another difficulty is the mental helplessness of the person who is addicted to things. Within himself are no resources for amusement or entertainment. The higher pleasures of the imagination are denied him. He is constantly looking for some new physical excitement. This constant tendency toward excitement is the greatest possible hindrance to the capacity to learn anything that requires reason and reflection. It is, perhaps, not too much to say, that many of our young people in their pursuit of excitement, exhaust their capacity to learn at

a very early age, and seem to acquire a permanent nervous fatigue which may be the reason for the failure of such a large number of our men and women to stand a strain of care or trouble even in early manhood and womanhood.

The absence of the life of the imagination, and of power to think seriously, makes a great void in the life of the individual. To-day the world is full of wanderers flitting from mountain to seashore, from city to country, from island to mainland, from California to Alaska, India, Egypt, anywhere, where they may see or hear a new thing. Social life is full of concrete things; flowers, dresses, foods, play a large part in entertainments of every kind. Theatres are overflowing with things rich, showy, noisy; that shall, night after night, minister to the senses of restless, nervous spectators who are eagerly demanding something that shall excite them yet a little longer.

Occasionally, during the past five years, we have been met by an anxious question as to whether our present social conditions do, or do not, indicate a loss of civilization and a probable reversion to savagery. This dark prospect is certainly not attractive. Nor is it probable. No nation has ever yet passed from civilization to savagery; but, perhaps, not a few have fallen into a worse condition. An awakened and developed activity, without the judgment to direct it to desirable and legitimate ends, must always be more destructive than an activity that is but partially awakened and is still undeveloped. With the latter something may yet be done; for the former there is but little hope, and so long as it exists there is danger.

The school is the conventionalized expression of the social condition of the country. It assumes the form which the real or supposed social need indicates, and presumably fits the rising generation to supply that need. Just now the social need seems to point toward the possession of the material world, even at the risk of losing our immortal souls.

It is, perhaps, not too much to say that our excessive attention to material things, both in the school and in the world, means restriction to the language of material things, which means a loss of intellectual language, which means more primitive and more limited thinking under which our social conditions must deteriorate.

The remedy for existing conditions and the hope of preserving intellectual unity in the country, would seem to lie in everywhere subordinating the material things of life to their earlier and legitimate use, viz., that of making the abstract comprehensible to the end, that it may furnish us with the highest rules of action.