concept. The object was to get on with the story or article.

However, when the object is to develop comprehension—not to test comprehension—the circumstances are different. Now the reader has dealt with the material and is ready to give attention to other intellectual opportunities associated with the materials. Of course, not all comprehension checks occur at the end of a story; and this fact needs to be kept in mind. Each stop made in the process of accomplishing different schemes in a Directed Reading-Thinking Activity sets in motion the “predicting-reading-proving” cycle.

Pupils capable of reading at a third-reader level and reading a story such as “Danger on the Cliff” (33, pp. 93–97) may, when the first step is made to check on purposes and on comprehension, have questions about Lookout Mountain. If so, before more reading is done, a quick look at a map to locate Lookout Mountain, Tennessee, is in order. This will to a large degree orient the pupils geographically. Similarly, questions about a bobcat may be dealt with through a quick check in a dictionary or encyclopedia. At this point in the reading of a story, primary attention remains focused on getting on with the story. Even so, at this comprehension-check time pupils need to turn their attention to concepts of this kind. Questions of clarity result from the discussion and may reflect a group need rather than an individual need. At the end of the story, time allows for a more careful check on Lookout Mountain, on the bobcat, or on Mr. Stover’s decision about the mutt. Pupils native to the area may be especially interested and may wish to check more carefully on the nature of Lookout Mountain, the animals that do or did inhabit the mountain, and so on.

At the intermediate level, pupils reading a story like “Handy Sandy” (40, pp. 15–24) may at the first step have questions about shells and how these kinds of cannonball shells were used. Some may not be clear on the meaning of foundry and may wish to check what they gathered from the context and the glossary against what others in the group gathered. This is a good time not only for the teacher to note the needs voiced, but also to direct pupils’ thinking as to add some clarity to their notion of foundry. The paragraphs in the story describing the foundry might be reread. When the story has been read, other ideas such as: “Sandy was his father’s name,” and “a chip off the old block” may be clarified immediately, as may the term head cracker.

**Fundamental Skill-Training Activities**

Only one phase of a total Directed Reading-Thinking Activity has been accomplished when a basic reader story has been read. What is done after a story has been read is equally as important. This is the time when skill training of a different kind is accomplished. Now special attention is given to developing such skills as firming up and refining word-attack skills,
clarifying and developing concepts, increasing powers of observation and reflection, developing adeptness in the use of semantic analysis, and so on.

While reading the basic reader story, pupils were learning how to make educated guesses, how to be reading detectives and ferret out the facts, how to deal selectively with facts, how to adjust rate to purpose and materials while under the pressure of a reading act performed in a reading group, how to prove or refute conjectures, how to apply word-attack skills already learned, how to deal with unknown words, how to acquire concepts, and so on. Even though all these actions may be in progress in any one directed reading-thinking session, the time required for a D-R-T-A should not be unusual.

A question frequently asked by teachers unschooled in teaching reading as a thinking process is: "How much time will a D-R-T-A consume?" To those experienced in the art, the question seems almost artless. Children, even six-year-olds, are quick to respond to the challenges of a D-R-T-A. They are quick to seize upon a situation, to make conjectures, to read, to prove, and to get on with the story. At the first-reader level, for example, a typical seven-page story can be dealt with as prescribed in ten minutes. True, the inexperienced teacher and the untrained pupils may, as they get started, require twice as much time; but this is no reflection on the approach. In almost any circumstance in which skills are acquired, the neophyte requires more time than does the experienced person.

Examined differently, one may ask: how long would it take a six-year-old who is instructional at a first reader level to read a five- to seven-page story? An illustrative five-page story, "Two In One" (36, pp. 21–25), has five pictures, one on each page, and consumes the space of slightly more than two full pages. This leaves the equivalent of slightly less than three pages of language context, or a total of 335 running words. Of this number, eighty-four are different words—which means there are 251 repeats. Even so, only eight of the eighty-four different words are used ten times or more. Of the eighty-four words, seven are introduced in this story.

A seven-page story, "Happy Again" (36, pp. 171–177), in the same book has seven pictures, one on each page. These seven pictures consume the space of about two full pages. This allows about five full pages of language context for a total of 654 running words. Of this number, 161 are different words, which means there are 493 words that are repeated. Even so, only thirteen of 161 different words are repeated ten or more times. In addition, only four of the 161 words are being introduced in this story.

It is apparent that the demands of word recognition in either story are not excessive; this includes both the number of different words and the number of so-called "new" words. The 161 different words represent a use of over 56 percent of all the words introduced as new in the materials designed for use at the first grade level in this series. If all this is taken into account, it is evident that, if the pupils read through either story without a stop, the total
reading time would be quite short, ranging most likely from two to five minutes.

Similar word-recognition demands are made at subsequent levels. A third-reader level story entitled "The Red Arrowhead" (33, pp. 200-206), is seven pages long. It has six pictures consuming the space of slightly less than two full pages. The total number of running words is approximately seven hundred. The number of new words introduced in the story is four.

In addition, the method for handling each story varies. This, in turn, means that the number of steps made (to check comprehension, to set or reset purposes) varies. In some stories there may be as many as four stops, whereas in others there may be only one. This variance influences time consumed.

Some groups are more responsive than others and, of course, this needs to be taken into account. Also some days are better days, so to speak, because a group's performance will vary.

In short, the arguments advanced here are to support the fact that when a Directed Reading-Thinking Activity is well handled there should be ample time to devote to fundamental skill training.

A search through books of different basic-reader series reveals that skill activities incorporated in the basic readers are so infrequent that they are negligible. Most series do not have any such activities in the basic readers. Where, then, are the skill-building activities to be found in a basic reader series?

The answer is easy to give. Skill-building activities are located in the studybooks or skillbooks that accompany each basic reader, and in the teacher's manuals. In all instances, studybooks are an integral part of a basic series. The studybooks and manuals together with the basic reader form the one-two punch needed for effective instruction.

Basic readers should not present skill-training activities. Basic readers present stories and articles to be read and enjoyed and, in the case of articles, to be studied. The word studied is used here to mean to understand so as to conserve in memory and be regenerative in character.

The attitude required to read to follow a plot development and enjoy its progress and outcome, or to follow an article to understand and to assimilate is quite different from the attitude required to acquire a skill. When pupils read a basic reader story or selection, they do so to seek answers to pupil questions or purposes. They do the conjecturing and seeking, and proceed as reading detectives trying to unravel the uncertainty of the unknown.

When pupils approach a studybook activity, they deal with carefully defined purposes and instructions that they are to follow. This task should be approached with the attitude that work is to be done. The business at hand is serious—it requires full attention, it requires effort. Now the interest and enthusiasm are governed by the attitudes and habits appropriate to the
business of learning and mastering a skill. In short, the approach to the studybooks and skillbooks is to be businesslike.

**Increasing powers of observation**

The process of getting information through seeing is extremely important because of the role sight plays in the life of human beings. In Chapter 7, "Concept Development," we shall consider some of the principles of visual perception. At this point it will be sufficient to point up its importance and its role in the reading-thinking process.

What a person sees in a picture as well as in the world around him depends not only on what is being looked at but on the state of the person looking. What is seen involves discrimination and judgment. The relationship between a picture or a scene and what a person sees is a complex one. Much depends on what a person wants to see.

Different observers, or the same observer at different times, may get different information from a picture or illustration. Each person contributes ideas or imaginings of his own. We cannot help but recognize, though, that a certain amount of training in seeing is necessary.

By the time children start to school, they have already had a long apprenticeship in seeing (11). Children brought up in the same culture, the same neighborhood, the same family, actually live in a world of their own insofar as what they see is concerned. Even so, the constant need to communicate, the acquisition of verbal symbols to represent experiences, strongly affects what is seen, modified, and remembered. Even though children and most adults are unaware of how language influences and dominates their thinking, they are still making constant use of their ability to compare and contrast things. The aim in teaching is to help children learn how to extract information of predictive value.

At the primary level the abundance of pictures can be used to great advantage in the teaching of reading as a thinking process. This is especially so if the pictures have been carefully planned and arranged so that they help carry a plot forward. A principal complaint of many teachers at the primary level is that "the pictures tell the story." In many instances this complaint is justified and reflects the fact that in instances pictures are thought of largely as a colorful way of attracting attention—and this is about all they do contribute. Where, however, pictures are an integral part of a plot, these conditions do not exist even though the pictures may also be colorful and attractive.

Pictures can be used to develop concepts and thus aid in word attack. For example, in the story "Two In One" (36, pp. 21-25) seven new words are introduced and each is supported by picture clues. On page 21 the new words are: bus, and drink; and the picture shows two boys setting up lemonade stands at a bus stop. Page 22 presents the words ice, and lemons; the
picture shows both being used in the lemonade. Page 23 presents cold, but; the picture shows one woman enjoying her drink poured from a pitcher filled with ice and another woman holding her glass and looking puzzled as if to say: "but my drink isn't cold." Page 24 presents Mr., and the picture introduces a third customer: a man, Mr. Black.

In the story "Are You Magic?" (36, pp. 95–100) the pictures help carry the plot forward in the following fashion. The first picture shows a group of children, either playing a game or preparing to. One of the boys is new and apparently is being questioned by the others. Reader questions are: Is he new? Are they playing a game? If so, what are they playing? Do all play? The story carries the plot forward. The second picture shows Cherry, one of the girls, spotting a boy in a cornfield. The other children are watching from a nearby tree serving as a base. Is this the boy being sought? Has Cherry caught him? Why is the boy not running for the base? And so on.

In the story "The Bear In the Hat" (39, pp. 6–20), the first two pictures can be studied for plot clues and for information of predictive value. Shown is the rustic interior of a kitchen; a stout, red-headed woman with hands on hips, head tilted back, mouth open as if shouting. About to go out the door is a thin man, slouched over, and wearing a big, black hat. The second picture shows the man with the black hat in a field as if sowing seed. He is looking over his shoulder in an anxious sort of way at a man behind him. This man is dressed in street clothes and is wearing a black derby. He appears to be bellowing angry orders at the man in the black hat. Both pictures are loaded with clues, and alert children, trained to use all clues relevant to unraveling this plot, will see clues that untrained pupils would ignore or not even see. Picture diagnosis is a kind of reading detective work essential to efficient reading.

At the intermediate level, particularly in articles of a scientific and informative nature, a study of pictures and other graphic aids takes on increasing importance. In the article "Arranging An Orchestra" (42, pp. 177–179), there are two pictures, three sketches, and a chart. The first picture shows an orchestra leader in the process of conducting. It is a close-up and shows quite clearly his gestures with his hands, and his facial expression. The second picture shows the Philadelphia Orchestra in position. Many of the instruments can be identified, and the picture can be studied to see the seating arrangement. The three sketches show two woodwind instruments, a percussion instrument, and a bass violin. The diagram depicts a seating arrangement. Color is used to differentiate the different kinds of instruments. In addition, the color areas are labeled (first violins, cellos, French horns, bassoons, and so on) along with a small picture of each of the instruments. Certainly each of these aids should be carefully examined and all the information used.

Pictures and graphic aids can be worth anywhere from a hundred to a thousand words. No reader would want to leave a picture unstudied. No teacher would want to overlook teaching the “seeing of pictures” or “pic-
ture recognition” any more than she would want to ignore teaching the phonetic and structural analysis skills essential to word recognition.

**Increasing powers of reflection**

It is generally conceded that systematic instruction in abstracting, judging, and reasoning can be done at an earlier age than was once thought possible. In fact, Bruner says:

> One wonders in the light of all this whether it might not be interesting to devote the first two years of school to a series of exercises in manipulating, classifying, and ordering objects in ways that highlight basic operations of logical addition, multiplication, inclusion, serial ordering, and the like. (8, p. 40)

Then he goes on to say that a comparable approach should be taken to the teaching of social studies and literature: “Can one teach the structure of literary forms by presenting the child with the first part of a story and then having him complete it in the form of a comedy, a tragedy, or a farce—without ever using such words?” (8, p. 46)

Hullfish and Smith (18) designate thinking as the critical educational issue and describe reflection as controlled thinking. They use the term thinking to name the activity of creating, using, and testing meaning, and indicate that in a more limited way this might be referred to as problem solving. They also declare three interrelated aspects of what constitutes thinking: sentiency, memory, and imagination; and then they describe a fireplace scene to distinguish the three. A man seated by a crackling fire, when asked what he is doing, says: “just thinking.” By this he may have meant two things: maybe he was largely recalling the past, or maybe he was both recalling the past and thinking about what might have been. The former is primarily memory; and the latter, imagination. The raw data of experience—the light and heat and sound—bestir the mental activity known as sentiency. Knowledge, then, is always mediated (an interplay between sentiency, memory, and imagination) and never immediate or just sentient.

When conscious control of knowledge is exercised, there is an intermingling of emotional involvement and reflective activity. Now something more occurs than to “just think.” More than reverie is involved. Effort is now directed or controlled by a *purpose*. As Hullfish and Smith say: “Thinking is good or bad, better or worse, only in relation to its directing purpose.” (18, p. 36) And the key to all this resides in the controlled use of sentiency, memory, and imagination.

To increase powers of reflection by reorganizing old ideas, conceiving new ideas, distinguishing between ideas, generalizing about ideas, formulating propositions, and reasoning requires controlled thinking. The growth of the mind stems from its power to start and direct significant inquiry and
reflection. To accomplish this, pupils must be required to look ahead and foresee, and to do so in such a way that their curiosity and responsiveness result in orderly activity and are based on earlier experience and knowledge. As Dewey indicates, a reflective and truly logical activity is native to the mind and manifests itself at an early period. He says: “There is an innate disposition to draw inferences, and an inherent desire to experiment and test. The mind at every stage of growth has its own logic.” (9, p. 83) Unquestionably, it is the attitude and actions of the teacher—her mental habits, her personal traits, her inspiration—that will translate these processes of reflective thinking into appropriate attitudes and mental habits for the children. This will cause them to think with the arteries of the mind as well as the skin of the mind, to use Ellen Glasgow’s terminology (12).

If, as Dewey says, all reflective thinking is the process of detecting relationships, then—when basic reader materials have been read—the time is at hand to reexamine those elements of a story or an article that warrant further study. Plots can be reexamined to see how evidence piled up; to note where a turning point occurred, how a climax was reached; to sense and appreciate human and social factors. At the primary level in particular, as the attitude of effective thinking is being fostered, it is the human elements that provide the bond. They are the common elements that connect the readers to one another, to the group, and to the characters in the artfully contrived plots. Elements connected with a plot development are of such a kind as to have occurred and reoccurred in many of the experiences of the young student. They furnish the materials that are well suited for the development of generalized thinking abilities.

In the story “A New Way To Fight” (35, pp. 129–134), animals and an animated bulldozer reach a peaceful settlement. The animals were being driven out of their forest homes and being pushed back further and further by the housing needs of an expanding population. A crisis was approaching. Some of the extremists among the animals wanted to fight. The prudent among them prevailed and a conference was called. It was decided that a line would be drawn beyond which housing for people would not be built. This is a situation that has many overtones: game preserves, reservations, and so on. After this story had been read and enjoyed, a teacher asked a group of seven-year-olds what they thought about the outcome. One young fellow spoke up in a loud, firm voice, and said: “They did the right thing”; then the group discussed why. These readers were at once actors and spectators. Although some impressions were subdued, all seemed to grasp upon the basic emotion stirred by the values of fairness and equality. No matter where this story is read or by what group, each can observe the laws of their own perceptions.

In the story “A Fight Against Fear” (37, pp. 11–18), it is fear itself that Omar fears. He hopes to prove himself to his older brother Gomez and to his father by passing the test of courage. A brash act by Gomez results in the need for brave action by someone. Brotherly love overcomes Omar’s fear
and Gomez is saved. In the section on "Extending and Refining" in the Teachers Edition for Above the Clouds two recommendations are made that warrant repeating here:

**Concepts—Feelings of Status.** We read daily of tragic accidents resulting from misguided attempts to prove "courage." When the first world-wide census of shark attacks was released by the American Institute of Biological Sciences in 1960, ten confirmed attacks were listed for the continental United States, of which three were fatal. In addition, it was revealed that some skin divers had taken up a dangerous and foolhardy practice—riding sharks or hanging onto their tails. Some skin divers were looking for thrills, some were showing off, and some were proving their courage.

Frank discussions of the need to feel "I'm just as good as anybody" may develop quite naturally from a discussion of Omar and Gomez. Children quickly recognize the show-off and the room clown, but do not have many opportunities to talk out the possible cause of such behavior. There has been and always will be the need for maintaining good feelings toward one's self and toward others. The exploration of acceptable outlets for personal stresses and strains is an important phase of either formal or informal education.

**Organization of Ideas**

1. It has been pointed out by scientists that the likelihood of being attacked by a shark is even less than the probability of being struck by lightning. Nevertheless, they give the following advice to skin divers:
   a. Always dive with a companion.
   b. Do not provoke small or seemingly harmless sharks.
   c. Place speared fish in a boat; do not tow them or tie them to your waist.
   d. As a rule, a shark will circle several times before attacking. Get into a boat quickly after sighting a circling shark.
   e. If there is not time to reach a boat, you can sometimes discourage a shark by releasing air bubbles, or, at close range, by hitting it on the snout with a club. Do not hit a shark with your bare hand. Shouting underwater sometimes—but not always—will discourage a shark.

2. Some of the above advice is based upon obvious reasoning; some is less obvious. Give the pupils an opportunity to exercise their thinking abilities by attempting to spell out the rationale behind the various do's and don'ts. (38, pp. 49–50)

The selection "Words Under Water" (40, pp. 161–165) is about cables. It tells about the history of cable laying, cable repairing, underwater communication. Then, in the section on "Extending and Refining" in the teacher's edition the following recommendations are made:

**Organization of Ideas**

Have the pupils list the steps in sequential order for repairing an underwater cable. Such a list might include:

1. The cable station engineer measures electrically how far the break is from his station.
2. The captain of the repair ship figures out how many nautical miles away the break is and navigates to that point.
3. A mark buoy is dropped over the break.
4. The cable is hooked, cut, and one end brought over the side of the ship.
5. The ends of the cable are tested until the faulty piece is found.
6. The faulty piece is cut out.
7. New cable is attached to the remaining good portion.
8. The new cable is fed from the tanks over the bow sheaves very slowly as the ship moves toward the other end of the cable.
9. The two pieces are joined, and dropped back to the floor of the ocean.
10. The shore station checks the cable.

Concepts—Insulation. Ask the pupils what they think of when they hear the word insulation. Most of them will think of the type of insulation placed between outer and inner walls in houses to keep heat or cold out (or in). Storm windows and doors improve insulation by providing an area of air space which does not conduct heat or cold as easily.

Some pupils may have watched their fathers repair wiring and have observed how the wires are insulated so that electric current will not be conducted.

Others may have observed some type of acoustical tile which helps to deaden sounds and thus forms insulation against the transmission of noises to another room.

In wintertime we also try to wear the type of clothing that will serve to keep us warm when temperatures drop. Air trapped between layers of clothing acts as insulation.

Nautical mile. From their use of the glossary, the pupils know that nautical pertains to ships, sailors, or navigation. The information is also given that the nautical mile is equivalent to 6,080.2 feet. Whereas the pupils know that when they ride in a car the speed is measured in miles per hour, most of them do not know that the ship’s speed is measured in knots. When a ship travels at 15 knots, it means that it is going 15 nautical miles in one hour.

The pupils may be interested in working out an arithmetical problem that has a car going at 20 miles an hour and a ship going at 20 knots. Measured by statute (or land) miles they will find that the ship would have traveled more than a mile farther than the car. However, to keep the proper perspective, they should also know that when a luxury passenger ship manages to make anything over 30 knots, it is considered to be going very fast for a ship.

Buoy. The group will probably know that buoys are used to mark channels and danger spots. They may be interested in knowing that the color of the buoy indicates on which side of it a ship should stay. Those living close to a navigable body of water may know that while some buoys warn pilots by their color, others use lights, and still others have sounding devices. Each kind has a particular value which the pupils will readily see. In addition, there are marked buoys so that a particular place on the surface of the water can be relocated.

Radar. Pupils have undoubtedly heard of different uses for radar, and they may be more knowledgeable about its wartime uses than of its peacetime role.
It is used to prevent collisions of aircraft or ships, and to warn ships of icebergs. It can be used to bring airplanes down for a landing and to show them their height from the ground. It is used in weather forecasting.

Some pupils will know that they can tell how far away lightning is by counting the seconds between the time they see the lightning and the time they hear the thunder and dividing by five. Recalling this will help them to understand how distance to an object can be estimated by noting the time it takes for radio waves to rebound after striking an object. Actually the flash and the thunder begin at the same time. Light (lightning) travels at about 186,000 miles per second and this is much faster than sound which travels at about one-fifth of a mile per second. This is why one must divide by five. (41, pp. 149–151)

Mastering the skills of word recognition

Skill in word recognition needs to be taught. It involves ability to use context clues or meaning clues, phonetic clues or sound clues, and structure clues or sight clues when decoding a word that is not recognized at sight.

The word skill is defined as: the ability that comes from knowledge, practice, and aptitude to do something well and make practical application. Skill in word recognition means to be facile and adept so as to be serviceable in new situations or with new words. The acquisition of such skills cannot be left to chance or to undirected practice. It is a training that must be expertly guided, carefully planned, and frequently practiced.

It is common knowledge that year after year bright children tend to work out rather effective systems of word attack almost completely on their own. When under the guidance of an expert teacher, they frequently need no more than teacher reassurance that what they are doing is correct or needs only minor change.

This implies three things. The skills of word attack cannot be extremely complex or these bright young people would not—generation after generation—work out their own reliable systems. Second, the skills they develop must be fairly uniform and almost standard; otherwise there would be such great variance that the skills developed independently could not be readily converted into a more uniform system. Third, the skills developed in a firsthand situation where their immediate need is recognized are very likely to be functional.

This leads to two conclusions. First, there are skills of word attack that are useful and therefore are functional. Second, if the bright readers do so well when using their own system, they will be even more skilled and efficient when using the techniques that educators have found to be most functional.

As already indicated, skill-building activities are presented in studybooks or skillbooks and in teacher's manuals, and not in basic readers. The directions given state clearly how frequently the skills should be taught and when they should be taught. All signify, too, that the activities should not be
used as busy work. The skills need to be taught, and this means teacher guidance.

As has also been stated, the number of activities provided at a level is astonishingly large. At the first-grade level in one series, the number of studybook activities totals 131. For the primary grades (1–3) the number of activities totals 323. If to this is added the number of exercises in the teacher's manual made available, the number totals well over seven hundred. It would seem to follow that if each skill activity were used as planned, each step taken as directed, skill in word recognition should result.

Developing adeptness in semantic analysis

Semantics is the study of symbols (signs, pictures, words) and their referents (meaning). As indicated in Chapter 1, another way to define it is to quote the title of Ogden's and Richards' book: The Meaning of Meaning. Since to read is to comprehend or to get meaning, the reader should be taught to see the likenesses and differences among meanings.

The primary purpose of language is to communicate. To communicate, Lorge says, is to "transmit stimuli to another to modify the receiver's behavior." (20, p. 327) This means, of course, that the words used to communicate need to have conventional meanings—meanings established or sanctioned by general concurrence or usage. Morris put it this way: "...the meaning of a term is completely specified when it is known what objects the term designates, what expectations it produces in the persons for whom it has meaning, and what its connections are with other terms in the language of which it is a part." (24, p. 13) Language, then, is social in origin and function.

The teacher of reading is interested in the semantic aspects of communication because the use and function of words aid us in thinking more clearly and in making sense when we communicate. While some work is being done on the role of nonverbal learning, it is generally agreed that language is indispensable to human thinking. Words are the symbols used most frequently in reading texts. Graphic aids (pictures, maps, charts, graphs) are used also to communicate but are not used as frequently or for the same purpose as words.

The story of Victor, the wild boy—a lad of eleven or twelve—found living in the Caune Woods in France is related in detail by Brown (7, pp. 3–8) and is relevant here. This little savage of Aveyron lived and acted like a beast and was ignorant of any language. Dr. Jean-Marc-Gaspard Itard believed that the boy could be taught to read and speak the French language even though the psychiatrist, Pinel, labeled the boy a congenital idiot.

Working patiently and carefully, Itard did teach him to speak some words by an auditory approach but discovered that he might be more successful on a visual-auditory level. After a time Victor could "read" quite a few
words but he did not understand them. So Itard set out to teach him about the meanings of words. Again, as a result of infinite patience and much repetition, the boy learned the meanings of a few object words, like pen, key, box, and book. He did this by always using the same book, pen, box, and key. One day he put aside the objects that had been used and substituted other books, pens, boxes, and keys. Victor failed to make the category association. For him, the word book stood for that one book.

Now Itard began to teach him that book stood for a category: books. At first the boy confused paper, pamphlets, and magazines; but gradually he learned to distinguish books. Then began the task of teaching him the understanding of words that name qualities and relations. By means of big and little books, he acquired understanding for size and was able to transfer this knowledge to big and little nails. Itard proceeded similarly with action verbs. So, little by little, Victor learned to read quite a large number of words.

What Itard did was to show Victor that words had referents. What Victor needed to learn was that words name classes or categories and that not all referents are objects, but that some label qualities and relations. Brown goes on to say that: "Any sort of recurrence in the nonlinguistic world can become the referent of a name and all such recurrences will be categories because recurrences are never identical in every detail." (7, p. 8) Brown defines category as a class or a grouping of objects or events. To this he adds the word attribute meaning: "any dimension on which objects and events can differ." (7, p. 10)

It is true, of course, that the children who come to school are not Victors. Yet the problems that Dr. Itard and Victor faced—learning to recognize words and their meanings—were like those faced by teachers and children. At the same time it might be said that most of our children are deprived semantically as was Victor in not knowing a language. Therefore, we must proceed in the same wise and patient manner as did Dr. Itard and teach children the skills that will lead them out of the semantic jungle.

**Levels of Abstraction.** Levels of abstraction might be best defined as a means of grouping or categorizing concepts by an ever more definitive recognition of attributes. Symbols acquire meaning by constant association with their referents and their essential attributes. The essential attributes are those which experience has shown to be usually present. Some symbols refer to referent attributes that are readily identifiable: ball—size, shape, weight. Others refer to attributes that seem to have a capricious variety of associations: smile—bright, fleeting, shy.

Like Victor, many children find it confusing when they need to recognize attributes that are relative and of different value. At first Victor associated the word book with one book and probably did so by some of its distinctive attributes of size, shape, color. When he needed to associate these attributes