# Presuppositions of the Teaching of Thinking

The question of "thinking skills" has been put on the table for discussion. It has not been put there without profound misgivings. Rather, it has been put on the table because it could no longer be kept off. The past 25 years have made it lucidly clear that the traditional repertoire of education has been squeezed dry and exhausted. There is no way of yet more powerfully squeezing it (through longer school days or through paying teachers more or through heavier homework assignments) to make it yield the kind of education we have begun to realize a democracy demands, which is to say a reflective education.

Before the end of the 20th century, the educational system which will serve throughout the 21st century will have been set in place. It is not just on the drawing boards — it is already in the classrooms; it is creeping into the curricula; it is making inroads into traditional modes of teacher education. "It is like some rough beast, slouching towards Bethlehem to be born," and it is our job to find it, before it is too late, and domesticate it for our purposes. We must, for the present, see ourselves as so many John Lockes, underlaborers whose task it is to clear the ground on which the new beginning is to be made, not so much learners of the new as unlearners of the old, for the new will quietly take its place in the sequence of years only if our minds are first cleared of the clutter and detritus of worn-out assumptions that inhibit our recognizing the new for what it is.

The present paper will begin with some distinctions — four, in fact, like the legs of a table — but only the first three will be relevant to the specific illustration of the "thinking skills" involved in reading comprehension. The fourth will be utilized in the more general discussion of the teaching of "thinking skills."

## PART ONE: FOUR DISTINCTIONS

### 1. *"Higher-order and "lower-order" thinking skills*

The discovery that children who have acquired language have also, in the process, acquired logic is something that never fails to amaze us, much as M. Jourdain was astonished to discover that all his life he had been speaking prose. This logical fluency on the part of the child may cause us to be a bit resentful (at heart we suspect ourselves of being logical ignoramuses), and in this we resemble the newlywed princess who, on being told that lowly, scruffy peasants enjoy the very same pleasure as that which had just provided her with such incomparable delights, could only murmur, "What a waste! It's really much too good for them!"

Our revenge — or perhaps it is merely our adult one-upmanship — is to claim for ourselves certain "higher-order thinking skills" which, we are convinced, callow youngsters cannot possibly possess. Even so, our conviction on this score is apt to be a troubled one. The developmental theories in which we had placed our confidence had assured us that maturation was like stepping onto a cognitive escalator which would whisk us automatically to higher and higher levels of cogitation. Instead, what cognitive prowess we possess seems to have been developed in only a few narrow corners of our lives. The acuteness and brilliance we proudly detect in ourselves often turns out to be limited to just those areas in which we have been motivated to study and practice; in the remainder of our lives we must confess ourselves to be, much of the time, the merest clods. Differences of age may assure us that the *experience* of adults is vastly greater in cumulative quantity than the experience of children, but experimental evidence attests that the elementary *reasoning* skills of adults is at about the same level as that of fourth graders.[1] Of course, this is an insult to our intelligence — but was it intelligent of us to have so uncritically assumed that "higher-order thinking skills" were vested exclusively in adults, while "lower-order thinking skills" were vested exclusively in children? Surely it had once seemed obvious enough, as the intellectual superiority of males over females had once seemed obvious enough. But now, when we encounter a financial wizard who reasons superbly only about finances, or a masterful chess player who reasons superbly, but just about chess, we are inclined to wonder if perhaps they are merely caricatures of us — or we of them. And we begin to suspect that whoever coined the phrase "higher order thinking skills" had no clear idea of what they were, but merely supposed them to be those cognitive proficiencies that "we" had and "they" lacked.

Those who bandy the phrase "higher order thinking skills" about seldom bother to identify them or to spell out the identities of the ignoble skills which presumably belong to the less elevated order of the thinking skills hierarchy. We are given to understand, however, that "higher order" is to be taken as highly commendatory: these skills (which evidently enable us to "analyze," "synthesize" and "evaluate") are worthy of great respect and are always to be described eulogistically. The same honorific approach is not to be taken towards the other skills which, as skills go, are unimaginative, uncreative, pedestrian — mere day-laborers.

Now there is a sense in which the elements of logic, being among the things one learns when one learns language, are acquired without one's realizing that the acquisition is taking place. For example, we can imagine *modus tollens* being learned in conversations like this: "If I give you my blue crayon, you give me your rubber duck." "I won't give you my rubber duck." "Then I won't give you my blue crayon." Or *modus ponens:* "If you can't stay out of puddles, you'll have to hold my hand." "I can't stay out of puddles." "Then you'll have to hold my hand." It is not, of course, that we learn to reason according to certain patterns; rather, the patterns are found to conform to the ways in which we have learned to reason. In any event, we should not be too quick to disparage as "merely mechanical" the reasoning skills we acquire with the acquisition of language. They are the basic tools of the reasoner, just as the pliers, the screwdriver, the hammer and the wrench are the basic tools of the mechanic. They may be humble and rudimentary when contrasted with the more glamorous cognitive performances of a physicist or a poet, but they are nevertheless indispensable to our reasoning — quite as indispensable as

our reasoning is to our lives.

The problem, then, is not to construct two taxonomies, one of "higher-order thinking skills" and the other of "lower-order thinking skills," but to specify under what circumstances the power and scope of our various cognitive competencies are minimized and under what circumstances they can be maximized. The domain of skills is not hierarchically ordered, with some skills being intrinsically more important or more valuable than others. We may like to think that nothing is so elementary as making a distinction or discovering a connection. The child says, "My spaniel is not a cat; it's a dog," and we wag our heads at this infantile instantiation of "X's are not Y's; X's are Z's." But nothing can be so critical as making the right distinction at the right time and place, or so important as, to echo E.M. Forster, the making of connections. When, therefore, people distinguish "higher-order" from "lower-order" thinking skills, what are they talking about?

They may experience a disparity in the qualities of various subject-matters and mistakenly conclude that there is a difference of kind in the skills being used to explore those subject matters. In one situation the subject-matter may be childish, in the other it may be sophisticated, but this tells us nothing about the level of the analytical skills being employed: one can think precisely about lowly subjects and crudely about elevated ones. After all, a mechanic uses the same wrench on Toyotas and Rolls-Royces, and reading is reading, whether it is Mother Goose one reads, or Piaget.

There is a more substantial interpretation of the distinction. When we speak of a "skilled third-baseman" or a "skilled neurologist," we do not mean that they each possess one distinctive skill. We mean rather that they possess a vast number of skills which they can deploy, mobilize, combine and orchestrate at will. The same is true of the competent reader and the competent writer, for reading and writing are not so much skills as megaskills: enormous clusters or galaxies of skills which have been organized to function harmoniously and purposively. It is when we examine the ways in which people deal with computational problems that we realize how important is the step-by-step sequencing of skills, or the alternation between employing skills serially and employing them simultaneously. And it is when we examine the ways in which people deal with artistic problems that we realize how skilled they can be in unskilling themselves, so as to retain for their art a certain randomness and spontaneity.

Of course, even if we were to assent to the view that skills used in combination represent a higher order than skills employed singly, it would still not justify the lack of attention accorded the elementary skills by otherwise concerned and responsible educators. Curiously, such skills are either ignored altogether or it is taken for granted that they are already in place and fully operative. The number of instances in which proper diagnoses of cognitive deficiencies are made and effective steps taken to remediate and prevent them are pitifully few. Taken together, these elementary reasoning skills represent the virtually invisible infrastructure of the entire educational process. Little wonder then that the educational system has disappointed us by failing to provide the reflective and reasonable citizens that are essential to any society that is democratic in fact and not in name only. (Of course, if reasonableness is our goal, the strengthening of logical proficiencies is necessary but not sufficient: to accomplish that which would be sufficient might require so extensive a reform of education that we might conceivably be unwilling even to consider it).

2. *Systemic and semantic skills*

By "semantic skills" in this context, let us understand only those skills involved in transferring meanings. Thus *translation* is a semantic skill, because it requires *carrying over* the meaning of a passage in one language into a passage in another language. *Inference* is a semantic skill, because it requires *drawing out* the meanings that are implied in a passage, and *expressing* them. *Figurative language* obviously must be employed with semantic skill, as when the meanings of human experience are *projected* physiognomically upon nature or when literary meanings are introjected by human beings, through the use of metaphor.

"Systemic skills," on the other hand, are quite different, not because they work with static meanings, but because they do not seem to work with meanings at all. If we think of meanings as *substantive,* then semantic skills are substantive skills, in which event it should be easy enough to see that systemic skills are *procedural* in character. They have to do with enforcing and carrying out the rules and regulations of a system. Thus the grammar and syntax of a language are systemic rather than semantic, and working with the rules of grammar and syntax calls for systemic skills. Mathematical, geometrical and logical skills are likewise systemic insofar as they are involved with the carrying out of procedures. They are the sorts of skills one would expect to find in systems-management experts who are concerned with the rationalization of the manufacturing process rather than with the material that moves through the process on its way to becoming a commodity. (It should hardly be necessary to add that the distinction between systemic and semantic skills is definitional rather than empirical: insofar as we work exclusively with the rules, conventions and procedures of a system, our skills are systematic. Thus it takes systemic skills to organize an encyclopedia, even though all the entries are the products of semantic skills, and even though the organizers are among the contributors).

We see the systemic skills at work (more or less) if we consider some rule violations. If George remarks, "Thirty-five divided by seven equals four," his error is due to his having violated certain conventions and procedures within the system of arithmetic, and therefore is a systemic failing, not a semantic one. If Ruth leaves a note saying, "Us gone to the stor," she has violated English syntax and spelling conventions, although the meaning she intended to convey is largely intact. To children, a rule-violation that does not cause loss of meaning is a bit like a victimless crime: they are puzzled as to why such moves are prohibited, and feel put upon by the teacher when these systemic strictures are enforced.

3. *Preserving truth and preserving meaning*

In inference, where the premises are either known or presumed to be true, the conclusion is drawn in such a way as to preserve the *truth* of the premises. In translation, to which the question of truth seems at first glance irrelevant, the problem is to preserve the *meaning* of the original, despite the changes of language that are involved.

Here is a syllogism that involves a violation of a rule of syllogistic inference: Sally said, "All detectives must be criminals, because they're all interested in crime, and all criminals are interested in crime. Sally's syllogism is formally invalid, and even if its premises are true, it fails to preserve that truth into its conclusion.

Here is a failure to preserve meaning: Tom remarked, "The French word 'chat' means, in English, 'an informal conversation.' " The meaning of the French word is not preserved by means of a properly selected English equivalent. Truth here is irrelevant, since we are discussing the translation of a word, not a statement, and mere words are not true or false: only statements or larger units of discourse are. But the situation would be no different if we had to translate an assertion, for we would try to preserve its meaning, regardless of its truth or falsity.

4. *Generic and discipline-specific*

Just as there are distinctions between "knowing that" and "knowing how," or between "knowledge about" and "acquaintance with," so there is a distinction between "thinking about" a discipline and "thinking in" a discipline. We are familiar enough with the latter distinction when it comes to learning a language: we struggle painfully for a time with the mechanics of looking up words in dictionaries and memorizing tables of regular and irregular verbs, but then there comes the "Click!" experience in which we find ourselves *thinking in* the language to be acquired, and not merely *thinking about* it. It is no longer a foreign object to us: we appropriate it to ourselves. Yet the same process can be said to happen with regard to the academic disciplines: we find ourselves at first thinking *about* them, then later thinking *in* them — thinking historically or mathematically or scientifically or musically. When this sort of thing happens, we are likely to reflect that every discipline is in effect a language, and to become an expert practitioner in a discipline, one has to think in its terms and not in terms alien to it: *in* it and not *about* it.[2]

So far, so good. It would now seem to be a very easy matter to take an additional step and to claim that each discipline has its indigenous thinking skills, skills which are unique to it and to it alone, and that these skills can be acquired only in the process of acquiring that discipline and no other. Thus there are what are sometimes called "discipline specific" skills: mathematical skills, historical skills, writing skills, which are distinctive of these disciplines and which are taught only by the teachers of these disciplines. Is there any danger in taking this small step and in making this modest claim?

It is a step that can be taken, but only with great caution, for although it may be the right move to make, it is easy to make it for the wrong reasons. There are two dangers here. The first is to assume that there are only discipline-specific skills — in other words, there are no generic skills, such as generic inference, but that one learns to make mathematical inferences in mathematics, historical inferences in history and genetic inferences in biology — while at the same time failing to include philosophy, the one candidate to be a source of generic thinking skills, among the disciplines.[3] The second danger is to assume that, even if philosophy were acknowledged to be one of the disciplines necessary for a complete education it would have no greater prepotency with regard to the teaching of thinking skills than any other discipline. But to think that the subject that contains logic — and in particular, deductive logic — has no greater prepotency in this regard than any other discipline is just as absurd as to think that philosophy is not a discipline. Those who are prone to the making of these two portentous but untenable assumptions are likely to be those who foresee no place for philosophy in the elementary schools, but whether they make these assumptions in order to ensure philosophy's exclusion from the schools is not clear.[4]

## PART TWO: THINKING SKILLS IN READING COMPREHENSION

In a typical reading comprehension test, the subject is asked to read a paragraph — usually one that is in a fairly formal prose style such as one might encounter in a social studies text. The subject is then asked to read three or four other statements, usually briefer than the original paragraph, and to say which most nearly expresses what the first passage expressed. (The directions vary considerably, of course).

Now, whether or not any of the competing paraphrases accurately captures the meaning of the original passage is, of course, in doubt. The problem is one of *translation* — not translation from one language to another, but from one form of prose to another, usually from a more formal to a more informal, even conversational locution. All translation involves some degree of interpretation often at the expense of synonymity. Whether identical meanings can ever be captured in different expressions has been seriously questioned. Some philosophers have catergorically denied such a possibility and Nelson Goodman has even gone so far as to deny that any two *words* can have the same meaning.[5]

No doubt those who construct reading comprehension tests do not agonize at length as to whether synonymity is possible. They are probably content with the notion that there are greater and lesser degrees of equivalence between the meaning of the original passage and its paraphrases. One can deliberate effectively among these paraphrases only if one has grasped the meaning of the original passage and can employ it as a basis of comparison. This suggests that the reader understands what the passage states, what it implies and what it assumes.

(a) What it implies and what it assumes can be extracted by means of inference skills.

(b) What it states, insofar as the taking of the test is concerned, is a matter of selecting the best paraphrase, and this is a matter of translation. But what elementary skills are comprised in translation, itself a "higher order" skill? A great many, probably, but two that deserve to be kept in

mind are analogical reasoning and linguistic standardization. Analogical reasoning is pertinent because an analogy is a resemblance between two relationships ("Fingers are to hands as toes are to feet" or "Kissing your sister is like eating an egg without salt.") or between two complexes of relationships (the way the map of Vermont resembles Vermont, or the way the Dutch language resembles the German language). We should therefore expect children who are skillful in analogical reasoning (that is, who can both invent and criticize analogies) to be skillful in recognizing resemblances between competing literary passages. The other important component of translation is linguistic standardization — the capacity to recognize diverse expressions as variant ways of expressing the same, or nearly the same, thing (e.g., the way "each," "every" and "any" are all rendered more or less adequately by the word "all.")

Let us now review the ways in which the distinctions introduced earlier are relevant to the case of reading comprehension. First we would have to point out that reading comprehension perfectly illustrates the difficulty of distinguishing between the higher and the lower, for if we are looking at reading comprehension in the order of academic priorities, then it has a foundational role and can be considered a "basic skill," but if we are looking at it in the order of internal complexity, then it must be considered a skill of a very high order of complexity. Among its major components, nevertheless, one can readily see the importance of inference, analogical reasoning and linguistic standardization.

Next it may be noted that reading comprehension involves grasping meanings, and in this sense rests heavily on the semantic rather than on the systemic skills. Teachers of reading readily invoke both types of skills, but whether, in actual practice, they actively cultivate both is another question.

As to truth and meaning, one might think (given the structure of the reading comprehension test as a comparison of paraphrases to see which one best approximates the meaning of the original) that truth is not a relevant issue. But this cannot be the case, because the entire process of ferreting out the implications of the original passage rests on the ability of the reader to assume the truth of what the passage states, for one could not otherwise determine what it implies. It is because validity is truth-conditional that the ascertaining of meanings is truth-conditional. If a fairy tale tells us that Hansel was older than Gretel, it would be false to say that Gretel was older, even though neither child ever existed. The original passage may be wholly fictional, but the paraphrase must still be "true to" it, or "true of" it, and this is guaranteed by the validity of our inferences.

What does all this add up to, as far as reading comprehension is concerned? It adds up to the fact that reasoning skills are more intimately involved in comprehending what one is reading than many reading teachers seem to be prepared to admit. If the teachers of teachers of reading were serious about their admission that reading is thinking, and is moreover the kind of thinking that involves teachable reasoning skills, surely they would do everything they could to see to it that children possessed such skills *as prerequisites* to their learning to read, or as concomitants to their learning to read, but surely they would not just take it for granted that these skills were in place and one hundred per cent operative. Teachers of English insist that they teach thinking, and they do. But if we examine the skills they stress (the ones they grade for), it is clear that the emphasis is on the systemic skills which are not meaning-bearing rather than on the semantic skills which are. And this is because the semantic skills, they have been told, fall "outside their domain."

Not only reading teachers. In elementary school discipline, textbook are bending over backwards to cite thinking skills, and to urge their fostering by the teacher, because of the relevance of such skills to the mastery of the materials, whether in science, math or social studies. Consider a representative approach in education — for example, the 8th edition of *Social Studies for Children* by John U. Michaelis (1985).[6] Michaelis is a respected educator who has been concerned with the development of cognitive processing in educational contexts, and who is the co-author of *A Comprehensive Framework of Objectives.* His advocacy of thinking skills in a social studies framework is clear and explicit. He presents four modes of thinking: *critical thinking, creative thinking, decision-making* and *problem solving and inquiry.* These four approaches intersect with a knowledge base derived from other thinking skills: *remembering, interpreting, comparing, gathering data,* and *classifying.* In addition to the formation of a knowledge base, concepts must be developed. Examples of concepts are conjunctive, disjunctive and relational concepts. The strategies of concept-formation include *defining, distinguishing examples from nonexamples, listing-grouping-labeling,* and *"problem solving or inquiry."* Additional skills to be emphasized are *generalizing, inferring, predicting* and *predicting* and *hypothesizing, analyzing and synthesizing information, and evaluating.* A few hints are given, in the case of each skill, as to the kind of questions the teacher should ask in order to foster the skill, and then the text turns to other important matters. It is as if only a quick brush-up or tune-up is needed in order to get these skills operating and plugged into the discipline.

The fact is that elementary school teachers, like teachers at every other level of education, are in no position to read the now-obligatory chapter on thinking skills that virtually all new textbooks such as this one, by Michaelis, contain and to operationalize the taxonomies of skills inevitably to be found in such chapters. Indeed, many teachers become rebellious and vow not to be distracted from their lesson plans by futile efforts to strengthen skills that students should have brought with them on the opening day of classes. It may be somewhat beneficial to a teacher to have a neat, new definition of inference, and to be provided with 4 or 5 examples of questions which require inference in order to be answered correctly, but teachers must be extraordinarily naive to believe that such hints even remotely prepare them to strengthen the inferential proficiencies of those of their students who perform uncertainly when inference is called for. And the educators who prepare such teachers in schools of education must be extraordinarily naive to believe that

an educational process that fails to provoke students to think can be successful in making them think better.

PART THREE: THE TEACHING OF THINKING SKILLS

We know that, from the statement "Frank walked stealthily," it can be inferred that Frank walked, but the statement is not convertible. From "Frank walked," it cannot be inferred that Frank walked stealthily. Likewise, from the statement, "Jane thought critically," it can be inferred that Jane thought, but from "Jane thought," it cannot be inferred that Jane thought critically. Now the point of this brief meander into informal logic is the pedagogical point that, if you want Jane to think critically, you'd better first make sure she's thinking. This is fundamentally what is wrong with the approach of Michaelis, just referred to, who identifies a number of skills that children taking social studies (or reading, or any other academic pursuit) should be adept in, but provides no mechanism which will assure that the children in question will be motivated to think, or will be guided into the particular channels of thinking excellence which have come to be known as thinking skills. And in fact, this is also what is wrong with many approaches to critical thinking, insofar as they lack a curriculum, a discipline, a tradition and a pedagogical methodology which would assure that the students to be converted into critical thinkers would be thinkers to start with. What critical thinking lacks — the methodology, the tradition, the discipline, the curriculum — is precisely what the subject of philosophy has, in addition to the critical thinking approach itself, which is wholly internal to philosophy. Or, insofar as critical thinking does possess these desirable requirements, it is because it has borrowed them from philosophy.

If one browses through 19th century efforts to justify the school curriculum, one finds with impressive frequency the invocation of the classic languages on the grounds that they "teach children to think," and later in the century, we find the sciences being invoked for the very same reason. Exit classic languages and enter sciences. From mathematics and the natural and life sciences we were to learn how to infer and explain and do all those good things that good thinkers do, but transferred into the other, more inert disciplines. This cheery Victorian optimism collapsed with Thorndike's finding, in the first decade of the twentieth century, that such transfers were an illusion.[7] Undaunted, the professions which had taken over the curriculum stuck doggedly to their teaching, and if challenged, drew up lists of thinking skills which they straight-facedly claimed to teach.

To this day, the air is filled with claims as to which discipline is the most legitimate and at the same time the most successful teacher of thinking. We find the humanities once again engaged in their perennial effort to re-enter elementary education, and once again we find them claiming superiority in inducing student cerebration. Philosophy goes unmentioned: it is not considered, even by fellow humanists, a humanities discipline capable of entering the elementary school with integrity. It is not even thought of as a discipline by some philosophers, who speak of "discipline-specific" thinking skills but who never discuss philosophy as one of those disciplines. Why is this so? Is it because, to admit that philosophy is the custodian of reasoning would mean that it teaches generic thinking skills, and that this would in turn cause the entire argument that thinking skills are all specific to disciplines other than philosophy to collapse like the proverbial house of cards? One can respond only by saying that such an admission would be a necessary condition for bringing about the collapse of that mischievous argument, but it would hardly be sufficient. Here are some of the other conditions that need to be provided:

a. *Further investigation of the relationship between philosophy and thinking.*

Any discipline can be taught reflectively — in a way that will cause students to think about what is being taught, as well as about their own thinking about what is taught. That is to say, any discipline can be taught in a philosophic spirit. But there is a tradition that goes back to Plato and that insists that philosophy itself is nothing but "good thinking." This tradition suggests that the relationship between philosophy and thinking is different from the relationship between thinking and other disciplines — that the former relationship is somehow an "internal" one, while the latter is "external." It would be most useful to conduct an inquiry into the difference between philosophy and the "cognitive sciences," for it may very well be that, in order to *be* sciences, these disciplines must take an objective and distant attitude towards their subject-matter, with the result that, while they might be adept in describing and explaining thinking, they are little qualified when it comes to provoking, modeling, instructing, disciplining, guiding and otherwise *teaching* thinking, which must emerge from a discipline that has an internal rather than an external relationship to the thinking process. The fact that the cognitive sciences treat thinking as a subject-matter to be discussed in no way guarantees them a special insight into the interventions needed in order to get students to think better.

b. *Are there other disciplines with an internal relationship to thinking?*

Let us hazard a guess that, if philosophy has an internal relationship to thinking, one reason will be that it is inherently *aporetic,* to use Aristotle's term for "difficulty-seeking." A second reason would be that it is inherertly *dialogical.* A third is that its content — the stuff it works with — is made up of ideas, and if thinking is like a bloodstream, then ideas are its red corpuscles. None of this, however, rules out the possibility that other disciplines — e.g., poetry — might also have an internal relationship to thinking. Now, not only is this possibility overwhelmingly persuasive, but the fact is that, except for a handful of philosophers, most philosophers have presented philosophy in a format that is provocative of thinking only among professional philosophers. The didactic expository style provides distance and objectivity rather than the easy access to the thinking process which literature often provides, where the reader becomes privy to the author's consciousness, as it were. If, however, the philosophical text were to be given literary form, the text would cease to be opaque and would become transparent, with the thought of the author passing over effortlessly into the thought (and responsiveness)

of the reader. When philosophy is presented in the form of an accessible literary vehicle, its internal relationship to the thinking process is greatly intensified.

c. *What is the relationship between philosophical discussion and the strengthening of thinking skills?*

When discussion is disciplined by logical considerations, as in the case of philosophical dialogue it must be, then engagement in such discussion virtually guarantees that reasoning, inquiry and concept formation skills will have to be employed, and it is by employing such skills in a classroom community of inquiry, where their use can be monitored and corrected by one's fellow students, that one's cognitive dispositions can be enhanced and one's cognitive proficiencies sharpened. Thinking philosophically with others provides assurance that one's reasonings will not be limited to the mechanical applications of deductive logic, but will be turned again and again upon one's own premises and the presuppositions upon which those premises rest, constantly re-examining them for their plausibility.

d. *What is the relationship between philosophy's aporetic focusing upon the problematic, and the promotion of thinking?*

It is well known that we generally begin to think only when problematic situations emerge in which we feel deeply involved, but in which we can no longer take certain of our beliefs for granted, and we are forced to think our way through the ensuing bewilderment by redefining the situation, contriving hypotheses as possible avenues to resolution, then testing the hypotheses, first imaginatively and then in fact. Now, when a subject is presented as *known* and *complete,* the student is not invited to think; rather, the invitation is clearly *not to think*. This can be true of philosophical essays and treatises, and it can also be true of literature. Many a story is read avidly for sheer entertainment, almost in the same passive way one watches a soap opera on television. This is particularly true with children's literature, and in particular the literature children are given to peruse in reading courses. Apparently the assumption is that children can be motivated to read by the sheer pleasure of appreciating a good story, whereas offering them literature so problematic as to force them to think can only have the effect of dissuading them from reading. Unfortunately this assumption itself rests upon the underlying presupposition of reading specialists and child psychologists that the bliss children seek is the passive lethargy of the totally immobilized spectator, itself akin to the presupposition endemic in the culture that the happiness workers crave is retirement to a condition of utter impotence only partially disguised by the flood of hypnotic stimuli in which one luxuriates.

The conclusion we reach is that, if philosophy can devise a way of presenting itself to children through literature, if the conceptual problems that then force themselves upon the readers are subjected to free and open, yet logically disciplined classroom discussion accompanied by appropriate exercises, and if the teachers can be properly trained to conduct such discussions sensitively and expertly, then philosophy can become the trunk of the educational tree, the discipline that prepares students to think in the other disciplines.

NOTES

1. A recent study by the Institute for the Advancement of Philosophy for Children, involving the use of the New Jersey Test of Reasoning Skills with some 6000 schoolchildren in many different parts of the United States showed that children between grades 4 and 8 performed just about as well on the 22 reasoning skill areas as did college freshmen. Since remediation of reasoning deficiencies is rare and since preventive efforts are virtually unknown, the plateau of performance children reach by the 4th grade is one from which they do not budge thereafter. If and when they get to college, they must do college work with the reasoning skills of middle-school children, who can be said to reason correctly only three-quarters of the time.
2. Thus, for example, Abraham Ascher writes, "The critical point is that all young people ought to be exposed to the study of the evolution of several different civilizations. The purpose is not to turn them into historians, but to give them a glimpse of what it means to 'think historically.' " "The Teaching of History in American Schools," in Benjamin Ladner (ed.). *The Humanities in Precollegiate Education* (Chicago: U. of Chicago Press. 1984), p. 87.
3. One would not be amiss in attributing this view to John McPeck, who has numerous insights with regard to "critical thinking" and its deficiencies, but seems unaware of the difference between such approaches and philosophy. (See his *Critical Thinking and Education* (New York: St. Martin's Press, 1981).
4. McPeck's book has aroused considerable protest from defenders of "critical thinking" approaches, and Stephen P. Norris's review article, "The Choice of Standard Conditions in Defining Critical Thinking Competence" (*Educational Theory,* Winter, 1985, pp. 97-107) is among the stronger of these. Norris, however, concludes his review on a rather puzzling note. Referring to a recent article by McPeck, "Stalking Beasts, but Swatting Flies: The Teaching of Critical Thinking," (*Canadian Journal of Education 9,* 1984, pp. 28-44), Norris cites McPeck as now maintaining that "critical thinkers can be developed by making the philosophy of subject areas an integral part of what it means to learn those subjects." This is all very puzzling, Norris remarks, because McPeck "could be interpreted as setting up philosophy, which many characterize as a way of thinking, as a general discipline." *op. cit.,* p. 107. Norris seems astonished that anyone, least of all John McPeck, might consider philosophy a discipline and not merely "a way of thinking." But this simply illustrates that many people in education — and in philosophy as well, it must be admitted — have no clear idea of the intimate connection between philosophy and education, or are aware that we have so far only scratched the surface of philosophy's enormous potentials.
5. See his "On likeness of meaning" in Leonard Linsky (ed.) *Semantics and the Philosophy of Language* (Urbana, Illinois: University of Illinois Press, 1952) pp. 67-74.

6. John U. Michaelis, *Social Studies for Children,* 8th ed. (Englewood Cliffs, New Jersey: Prentice-Hall, 1985), pp. 233-263.
7. Thus Herbert M. Kliebard: "Most humanists continued to insist that the study of certain subjects *in themselves* had the power to develop desirable habits of thought. Thorndike's experimental evidence notwithstanding, it is still plausible to assume that the prolonged and intensive study of certain subjects results not simply in the gaining of knowledge of skills (the furniture of the mind), but in enhancing certain ways of thinking (the discipline of the mind). What is implausible is that the study of these subjects in itself has that effect. The key to a modern version of mental discipline as a justification of humanism lies not in identifying allegedly disciplinary subjects and then proceeding dutifully to study them. The key lies in *how* the subjects are studied." From "The decline of humanistic studies in the American school curriculum," in Ladner, *op. cit.*, p. 36. Obviously the author cannot bring himself to say that the how question has to do with approaching the subjects epistemologically, logically, ethically, aesthetically — in a word, philosophically.

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