CHAPTER TWO

Kinds and Orders of Discourse

The most sensible strategy for determining a proper learning order in English, it seems to me, is to look for the main lines of child development and to assimilate to them, when fitting, the various formulations that scholars make about language and literature. This strategy is opposed to starting with some notions of structure derived from linguistics or literary criticism and trying to found a curriculum on them by negotiating a compromise between theory and the classroom facts of life. In other words, the sequence of psychological development should be the backbone of curriculum continuity, and logical formulations of the subject should serve only as an aid in describing this natural growth. Meshing learner and learned, in the case of a native

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language, is a matter of translating inner reality into the public terms of the subject.

The chief difficulty with this strategy is the lack of information about how the thought and speech of children do in fact grow. Whereas theories of grammar, rhetoric, and literature can flourish in relative independence of psychological information, theories of child development depend largely on empirical research. Most of what we know today about this development is vague, controversial, and hard to translate into a curriculum. What I would like to do here is piece together a theory of verbal and cognitive growth in terms of the school subject, basing it partly on present knowledge but definitely going beyond what can be proven. A comprehensive rationale for a learning sequence in language may never be provable, but the practices suggested by the rationale can certainly be tested in schools for their efficacy, and some hypothesis is necessary even to acquire more knowledge. In our ignorance we still have to make assumptions for further research and for an interim curriculum sequence. The theory of discourse that makes up most of this chapter is meant to be utilized, not believed. I am after a strategic gain in concept.

Language and Cognition

At the outset let me try to remove a possible source of confusion and at the same time explain why I believe language learning is ultimately a cognitive matter. Both reading and writing are at once shallow mechanical activities and deep operations of mind and spirit. There is no necessary connection between reading and the comprehension of words, or between writing and composition. Comprehending and composing are independent of written symbols. The basic problems of understanding what someone else says to us, or of putting thoughts into words, can and should be separated from mere decoding of letters and mere transcribing of speech, which involve only perceptual and motor skills, not thought and emotion. One could learn to read aloud and take dictation, as did Milton's

daughters, without knowing what the words meant. We acknowledge the independence of composition from print when we speak of oral composition and oral literature. And problems of reading comprehension are simply problems of comprehension; if a text were heard instead of read, the ideas would be no easier to understand, given that the reader knew how to recapitulate voice from a page. And *that* is the chief learning issue at the mechanical level — tying letters to vocal sounds and punctuation to intonation.

The distinction between literal and conceptual levels is obvious, but equally obvious is that we often forget it. For example, a common curriculum assumption is that spelling and punctuation should continue to be taught beyond primary school, whereas this mere transcriptive skill is not developmental beyond the age of around nine. I can't imagine what further maturation taking place beyond then would enable a student to learn more about the relations between print and speech if he had not already learned them. No new powers of conception have to be waited upon. Expansion of vocabulary will not introduce new sound-letter relationships. Further conversational and reading experience may introduce more complex sentence structures but no new principle for punctuating them. Why, then, do we still have to teach spelling, punctuation, and elemental reading to children beyond the age of nine or ten? There may be several reasons, but none concerns normal maturation. Except for some new words that cannot be spelled from phonics understanding alone, all teaching of decoding and transcribing skills beyond this age must be considered remedial. In other words, we continue to teach these things only because we did not succeed in teaching them before, not because students were not developed enough to learn them. If, at the outset, punctuation were taught by speech intonation, and if the sound-letter relationships were taught thoroughly through writing as well as reading, we might well find that teachers beyond the middle years of elementary school would be free to concentrate on the truly developmental issues of mental and emotional growth. In contrast to decoding and transcribing, comprehending and composing do indeed evolve as children mature.

Look at it this way. We have meanings, vocal sounds symbolizing those meanings, and written marks symbolizing the vocal sounds. Rendering vocalization and intonation into graphic signs, and vice versa, is merely matching an auditory symbol system with a visual symbol system. This means, as Vygotsky for one pointed out, that reading and writing are a second-degree abstraction — symbols for symbols — but by school age or before, children seem ready for this second layer of symbols, and learning the regular relations between them is a mechanical matter of pairing associations. It is the matching of symbols to referents that is truly difficult and developmental. Meanings cannot be merely paired off with words by rules of regularity. But most of all, referents are concepts of things, and both our concepts and our ways of interrelating them change as we grow. In recent experiments,[1] Piaget has found that children recalling a design shown to them once could more accurately represent it six months later, in pictures or in words, than they could only a week later, when their memory should have been fresher. He attributes this to the interim development of their ability to cognize and symbolize, since obviously they perceived the design just as accurately at the time of its presentation but could not then show that they did. Moreover, the work of one of his colleagues, Hermina Sinclair-de Zwart, seems to indicate that teaching of language forms cannot hasten this ability to represent reality more accurately.[2] These experiments point up, I

[1] See *On the Development of Memory and Identity* (Barre, Mass.: Barre Publishers, 1967), two Heinz Werner memorial lectures delivered by Piaget at Clark University.

[2] In *Langage et Opérations — Sous-système linguistique et opérations concrètes* (Paris: Dunod, 1967) Hermina Sinclair-de Zwart reports several experiments in which children's language performance was matched against their performance on certain conservation and seriation tasks involving physical operations. She found that the possession of linguistic terms and structures was neither necessary nor sufficient for performing these cognitive tasks, and that teaching the children the relevant verbal formulations influenced little their performance on the conservation tasks. She concludes that some general laws of psychological development govern the parallel growth of language and operations, so that even if language acquisition seems to run somewhat ahead, as it did sometimes in these experiments, it cannot really outstrip or hasten cognitive growth. Although the imitation of verbal models plays

believe, the fact that development of symbolic expression depends on nothing less than general mental growth.

Abstraction

The concept that I believe will most likely permit us to think at once about both mental development and the structure of discourse is the concept of abstraction, which can apply equally well to thought and to language. My effort here will be to make a very qualified equation between levels of abstraction and stages of growth.

I have said that the superstructure of discourse is the set of relations among speaker, listener, and subject — first, second, and third persons. The *I–it* relation concerns information — how someone abstracts *from raw phenomena.* The *I–you* relation concerns communication — how someone abstracts *for an audience.* The first is the referential relation; the second is the rhetorical relation. Although the informative and communicative aspects of discourse cannot in reality be separated, for conceptual purposes they may. I would like to take first the *I–it* relationship, abstracting *from.* It will involve us in information-processing, the transforming of matter into mind, cognizing. Of course "transforming" is only a metaphor. Raw phenomena remain forever themselves, unspeakable, regardless of how much we abstract them. Not all abstraction, furthermore, is verbal. But if we keep these restrictions in mind, we may proceed safely.

In common and technical parlance, the words "abstraction" and "to abstract" seem to refer to both the abstracting and the abstracted and, as the following sentences illustrate, to apply in what appear to be very different domains. "The individual *abstracts* objects from his environment" (perception). "This student has chosen to write on a more *abstract* subject than that student ("size" of referent). "The concept of bartering is easier than the concept of international trade because the latter is

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an undeniably large role in language learning, she says, the functional use the child makes of language as an instrument of thought depends on his operational needs.

more *abstract*" (concept formation). "Proposition two about proposition one is of a higher order of *abstraction* than proposition one" (logic). This diversity of usage might indicate that abstraction is an overly loose and unworkable concept, but I prefer to believe that it indicates a similarity of process underlying all stages of information-processing, from sensori-motor and perceptual to affective and intellectual. At each stage, abstraction means something a little different but it still retains stable meaning through all stages — which is an excellent reason for our using "abstraction" to cover so many different phenomena.

One element of abstraction is the ranging of the mind's materials in *hierarchies* of classes and sub-classes, superordinates and subordinates. The class concept "international trade" is more abstract than its subordinate class concept "bartering." Similarly "mammals" includes "dogs." But what about "international trade" and "dog," which do not belong to the same hierarchy? If these were the respective subjects of two student themes, we would probably consider the first to be a more abstract topic than the second. How so? I think the answer is that we form a rough notion of equivalent altitude between concepts in different hierarchies. We speak of levels of abstraction and assign "international trade" to a higher level and "dog" to a lower one, even though the two concepts are of different classification systems. If asked to rank "international trade" and "parabolic trajectory" we would probably be hard put to assign one a level higher than another. (I would be pleased if the reader were to dispute this.)

What intuition underlies this rough assigning of levels when one class cannot logically include another as a sub-class? It seems to me we use as a yardstick the extension in time and space of the referent. For example, one could observe an instance of "bartering" or of "dog" by standing at one point in space-time, but one could not so observe an instance of "international trade," which is itself a complex of actions occurring at different times and places. "Concreteness," the traditional antonym for "abstractness," is a matter of just this extension of the

referent in time and space. So to the notion of class inclusion we can add this definition of concreteness. "Pop fly" is both more concrete than "parabolic trajectory" and is a sub-class of it. In fact, "parabolic trajectory" is superordinate *because* it has as referent something more removed from the particular circumstance of ball, bat, and baseball field. Its instances are its subclasses, that is, intangible or mental entities whose instances are in turn things observable at a certain time and place.

A second element in abstraction is selection — constructing in one's mind an object out of the indivisible phenomenal world by singling out some environmental features and ignoring others. As Alfred Korzybski never tired of pointing out, we can never abstract *all* the features of our surroundings. First of all, our attention itself is selective; we notice what we need and want to notice and what we have learned to notice. Secondly, even of those things our attention settles on we can only register a few features, for two reasons: our receptors are limited, and our prior gestalts dictate what is significant and what is not. To approach perceptual selectivity — low-level abstraction — I resort again to the communication engineers' definition of coding — the substitution of one set of events for another. When something is coded from one medium to another, the coding must partake of the qualities of the second medium, which can never reproduce all the qualities of the first. All our sensory receptors can do is *simulate,* electrochemically, the external phenomena they are registering. To see a leaf is not to incorporate it, nor literally to transform it (the leaf remains the same), but rather to create in our body a representation of it that is structurally similar to it. A television image is a lineal coding into successive emissions which are later recoded into a two-dimensional arrangement of electrons. Conversely, our vision of the leaf is spatially represented in our retinal structure, then recoded into a succession of neural impulses to the brain. Our perception, moreover, is hardly pure; although not limited like the frog to seeing only a few genetically determined silhouettes, we do impose our gestalts at the very moment of perceiving. Looking is rare. We look at and look for. In short, in

substituting inner events for outer events we automatically edit reality. Information is lost, and it is hard to know what features we are missing. Think, for one example, of the frequencies of sound and light radiation that our receptors are simply not built to pick up. And three-dimensionality is something only a combination of several receptors and our body movements can make apparent to us.

Memory, or recalled perception, selects features at a higher level. What is involved is not just fading of detail; many affective and cognitive factors determine what "left an impression" and what "stands out." From a later point of view, one categorizes and interprets events, partly in the light of new information received in the interim. But most of all, the details of a particular scene "stick" because they become assimilated to similar details from other scenes remote in time from that one. The linking of perceptions of different times and places may be affective or logical. Whether the link is a fear feeling or the gestalt of rectangularity or the notion of fair play, something we can call a category has been formed, and the detail in question is recallable because it is associated with analogous memories, all serving as instances of the category.

Memory operates by and leads to classes and class concepts. The problem with these terms is that they suggest rational, public, conscious categorizations of experience, whereas it is clear from mental illness, intuitive creativity, and interpersonal disagreement that many of our "classes" and "concepts" are irrational, private, and unconscious. The point, in any case, is that whether the generalization is about "what I can and cannot do" or about the similarities among "pop fly," "path of artillery shell," and "course of thrown rock," a great reductive summary has taken place of prior perceptions and memories. Selecting and ignoring are at the heart of such summary. "Parabolic trajectory" ignores bat, cannon, and rock and fastens only on the kind of course produced by any projectile under any circumstance as it overcomes and then submits to gravity. In this case the category is publicly recognized and named, and the verbal learning of this category undoubtedly facilitates the linking and

lumping together of perceptions. In the case of a person whose self-concept prescribes and proscribes certain behavior, the category may well be unconscious and private. He has nonetheless generalized "what I can do" and "what I can't do" by seeing in a number of separate events evidence of the same fact. To do this he ignores other features of the events. By thus summarizing his experience he can, or feels he can, better guide his future actions.

Selection is very subtle. Although it often seems like simple elimination, it means something somewhat different at different levels of the nervous system. Even in perception it does not happen by removing some features and leaving the others unchanged, as if one were to remove several items from a store window display and leave the other items just as they were. What happens — in different ways with perception, memory and ratiocination — is that the features are not only selected but *reorganized,* and, increasingly as we go up the scale of the nervous system, *integrated with previously abstracted information.* Thus selection occurs as part of a larger process of digestion and assimilation. Whereas in perception, it is sensory data that are being selected and rearranged in relation to each other, in memory and generalization, it is the lower-order abstractions themselves that are selected. That is, the "matter" being reduced is increasingly the inner codings and not the external stimuli. Abstraction is "higher" as it is more reflexive — one neural operation integrating prior neural operations. More and more, the "subject" is internal and farther removed from outside phenomena; the referents are other abstractions.

What then of "propositions one and two"? In what sense is a statement about a statement more abstract? The referent of P_2 is an item like P_2 itself, another proposition — not a class of things and not material things themselves. This represents the extreme degree of symbolic reflexiveness, of metalinguistic involution. But P_2 is "higher" than P_1 because it *refers to* P_1. A symbol is always more abstract than its referent, i.e. represents yet another step of mentation. P_2 is a further thought about P_1.

A definition of abstraction, in sum, must center on a notion of selection; but this selection, as it operates through perception,

memory, and generalization, implies some reorganization of features according to the nature of the apparatus doing the selecting and according to previous knowledge systems that have grown in the organism. A definition must also include the notion of hierarchy and hierarchical integration — of orders of symbolization and stages of internal processing. The combining of propositions cannot take place until classes exist, and classes depend on the categorizing of experience, which presupposes memories of perceptions. Abstraction, by selecting and ranking the elements of experience, reduces reality to manageable summaries. To abstract is to trade a loss of reality for a gain in control.

Abstraction and Curriculum

Whenever I ask people to define abstraction for me, they resort finally to talking about how people, especially, children, learn. It is hard to avoid an analogy between stages of information processing that go on in all of us all the time, and developmental stages of growth. A curriculum sequence based on such an analogy, however, needs to be carefully qualified. Although developmental research often suggests that cognitive growth moves in the direction of higher abstracting, such as logical operations, a lot of evidence implies that even very small children make rather high-level inferences, although it is doubtful that they "think out" such inferences as adults might. The linguists, for example, are very impressed — properly, I think — by the generalization entailed in the child's competence in creating structurally well-formed sentences that he has never heard before. From the data provided by other people's sentences he infers some working model of syntax before he enters school. But let's take another sort of example. At a parents' meeting of a nursery school my daughter was attending, a father told about his five-year-old son's refusal to eat, which was becoming a serious problem until one night, in an unguarded moment at the supper table, as if speaking to himself, the child said, "If you eat, you grow up to be big and strong — and die." With rare explicitness he had verbalized the perfectly logical

but usually unconscious kind of thinking that underlies a lot of children's behavior. The boy had combined two generalizations — premise one, that eating makes you grow up, and premise two, that growing older means approaching death — and concluded, with splendid syllogistic sense, that to eat is to die. Because he revealed his logic, the boy's parents could point out that if you don't eat, you die even sooner. But how much of children's inexplicable behavior is based on similar buried abstracting? The fact that the cognitive distortions known as mental illness originate so often in childhood suggests that a lot of abstracting goes on at that age, however unconscious and sub-verbal it may be. There is every reason to believe that a child puts his perceptions and memories together so as to form categories of experience, and that on the basis of these categories he makes some generalizations and syllogisms about the world and himself.

A child is not an empty vessel when he enters school; he comes replete with a set of abstractions about the world and himself, some of which he may have acquired ready-made from others but some of which he generated himself from his own experience. It is these latter that are troublesome to others, obscure to himself, and not very amenable to influence and possible correction. They are unconscious, private, and essentially non-verbal (they sound verbal only because we have to denote them with language). Yet they determine a lot of his behavior. And control of behavior becomes possible only as awareness of these abstractions arises. In short, increased *consciousness* of abstracting has as much to do with developmental growth as has progression up the abstraction ladder. I believe that growth along one dimension fosters growth along the other. This would square with Piaget's insistence on decreasing egocentrism as a dimension of growth. That is, certain cognitive processes which we associate with higher abstraction may become possible only as the child becomes aware that he is abstracting. Because higher abstracting is so much about lower abstractions, it may be impossible to make inferences of a certain generality and complexity without becoming aware of prior

stages. Or the effort to make such inferences may of itself induce this awareness. Also, words seem necessary to higher abstraction and this necessitates greater consciousness.

With this qualification in mind, that the consciousness of abstracting may relate reciprocally to the growth of abstracting, it seems reasonable to propose a curriculum based on the hierarchy of abstraction. And my idea would be to have such a curriculum recapitulate, in successive assignments, the abstractive stages across which all of us all the time symbolize raw phenomena and manipulate these symbolizations. Not only do we grow slowly through the whole abstractive range during our period of maturation, but at any time of life we are constantly processing new experience up through the cycle of sensations, memories, generalizations, and theories.

The essential purpose of such a curriculum would be to have the student abstract at all ranges of the symbolic spectrum and progressively to integrate his abstractions into thought structures that assimilate both autistic and public modes of cognition. The hypothesis is that speaking, writing, and reading in forms of discourse that are successively more abstract makes it possible for the learner to understand better what is entailed at each stage of the hierarchy, to relate one stage to another, and thus to become aware of how he and others create information and ideas. The goal is not so much to attain the higher levels as it is to practice abstracting all along the way. No greater value is ascribed to one level than to another. Both concreteness and abstraction are dangerous and valuable. Increasingly, in the future, people will need to know, not how to store and retrieve information, which can be done by machines, but what the nature of information is and how it can be best abstracted. This is why, ultimately, substance is less important in English than structure. To be the master, and not the dupe, of symbols, the symbol-maker must understand the nature and value of his abstractions. This takes consciousness and an integrated view of the hierarchical, inner processing.

I am not talking here just about dry data and intellectual matters. I am trying to talk simultaneously about effective

thought, emotional health, and active values. The relations among feeling, thought, and values are such that this course seems not only possible but in the end necessary. Psychological disorders are, as much as anything else, cognitive disorders. Autistic, syncretic, unconscious, primary-process symbolizing is just as much abstracting as the public, logical, and verbal symbolizing of secondary process. It is not that one is at the bottom of the hierarchy and the other at the top; both may operate within a large range of the abstraction spectrum. But the former is less open to inspection, less under control, less subject to alteration. And it exerts great influence on the cognition that *is* visible and controllable. For all its subjectivity, a category of "people who will hurt me" is just as much a class-concept, or abstraction of experience, as "international trade"; it too subsumes a number of particular happenings at different times and places (memories of perceptions). "Younger sisters get all the attention" is just as much a general proposition as "A common feature of family life is sibling rivalry." Too often we deem less abstract an idea that is merely less publicly valid. Also, autistic classes and propositions are apt not to be verbalized or consciously "thought" but rather to be expressed in systematic behavior. Such operating generalizations should really be deemed abstractions; otherwise we risk denying something we know, which is that not all cognition is conscious and verbal. Again, the awesome ability of small children to create novel sentences modelled on a paradigm they are unconscious of demonstrates a very powerful operating generalization which they have somehow "inferred" from instances of others' sentences and which they practice in their vocal behavior. Why would they not bring this faculty to bear on the other data of their experience?

The relation of abstraction to value is contained in the word "preference." To abstract is to select and ignore; to value is also to give priority to some things over others, to prefer. Among the claims various stimuli make upon us, we must choose. Among the alternatives for action that we associate with these stimuli, we must choose. Though our conditioning is so potent as to

make "choice" a mere irony at first, I believe it is possible to open up for the young the repertory of options among what can be seen, what can be made of what is seen, and what, consequently, can be done. Our behavior is very dependent on our information, on what we think is so and what we think the meaning of something is. The more one becomes conscious of his own abstracting, the more he understands that his information is relative and can be enlarged and modified. By perceiving, inferring, and interpreting differently, he enlarges his behavioral repertory, sees new possible courses of action, and knows better why he is acting as he does. Choice becomes more real. The function of informing is essentially to guide action. Although we do at times, when free of decision-making, abstract in a spirit of play or of pure curiosity, what we shouldn't forget is that abstracting, like breathing, goes on all the time for the chief purpose of ensuring that we will survive and prevail. Notoriously, we see and interpret according to our needs and desires. Our values are the ways we believe we can fulfill these needs and desires. But a need to feel powerful, for example, can be fulfilled any number of ways; which ways we choose — the values we will live by, our preferences — will depend in large measure on what we "know" about what is relevant and possible. In both abstracting and valuing, the dark issue is what we did *not* select. Do we know there are other features, other inferences, other courses of action? Is a style or a value merely a conditioned reflex, or an election from a large array?

I am convinced that a very large measure of what educators mean by "teaching students to think" is in reality making them conscious of abstracting but is, unfortunately, seldom viewed this way. A salutary approach is to conceive the task as learning how to re-think or un-think. If a student becomes aware of his abstractive process by discoursing progressively up the hierarchy, and by examining his discourses in collaboration with peers and a guiding adult, he has an opportunity to correct and adjust his cognition. Josh Billings once said that people's problems come not so much from their ignorance as from knowing so many things that are not so. A student, even at age six, knows

an enormous amount that isn't so, or that is at least severely limited. His intellectual growth will be more a liberation than an acquisition. An undeveloped nervous system, accidental association of events, the Freudian "family drama," the natural egocentrism of the inexperienced — all contribute to his abstracting ineffectual models of the world and himself. Most of his life will be spent in finding out the hard way that there are other ways of abstracting and that his is private and parochial. That is, most bright ideas he will have later will be an unthinking of what he long felt was a certainty. Most creative breakthroughs and dramatic scientific advances consist of just this kind of revision or rethinking. Copernicus and Galileo had to *remove* an idea; that was their new thought. Einstein had to crash through the culture's "current abstractions," to use Whitehead's phrase. In this sense, a new thought is a further thought about an old one. An abstraction does not get revised except by abstracting about it at a higher level, that is, at a stage of knowledge integration that has broader perspective than that from which the original abstraction was created.

Ideally, a student would spend his time in a language course of study abstracting a large amount of raw material into categories of experience and then into propositions which finally he would combine so as to arrive at new propositions not evident at any of the lower stages. By discussing his productions in a workshop class, he could profit from other points of view, discover what part of his abstracting is peculiar to him and what he shares with a public, and see how the worth of his higher abstractions is determined by the worth of his lower ones. Generally, a student should learn to play freely the whole symbolic scale, and to know where he is on it at a given moment. Most of our faulty thinking, and consequently a lot of our ineffective behavior, come from confusing abstraction levels and assigning to a high-order inference the same truth value we assign to a lower-order "factual" abstraction about which public agreement would be high. The key is the consciousness of abstracting — as general semanticists have insisted for years. This consciousness is worth more than all the courses in logic because it is

something any logician, amateur or professional, stands no chance without. It grows slowly over the years, but different conditions can retard or advance it.

But how do we chart growth across the abstractive hierarchy? Does a child merely climb the ladder slowly over the years? No, for growth is more intricate than that. Embryology provides the best metaphor: a simple cell becomes a complex organism by differentiating itself into specialized parts at the same time that it maintains integrity by continually interrelating these parts. Mental growth, too, consists of two simultaneous progressions — toward differentiation and toward integration. We build our knowledge structures upward and downward at the same time. A child frequently over-abstracts as well as under-abstracts: he cuts his world into a few simple categories that cover too much and discriminate too little, and that display no subordinate or superordinate relations among themselves. Or he makes a generalization that is too broad for the meager experience it is based on. He fails to qualify and quantify his statements. Judging only by the surface generality of his words and sentences, one would conclude that he was thinking at a high level of abstraction. But he may be understanding "international trade" as "barter," not as the complex of activities adults understand by the word. That is, he may use early many concepts that only later will take on the meaning adults give to them. And his concepts are all ranged in his mind on the same plane, awaiting the time when he will rank them hierarchically as super- and sub-classes of each other or laterally as coordinate classes. His generalizations will begin, however, to collide and conjoin, qualifying each other or building syllogistically on each other. This increasing interrelationship corresponds to the organism's continual reintegration of differentiated functions. So, as regards individual concepts and statements, growth is toward internal complexity and external relationship. In the sense that abstraction means hierarchical integration, the child does climb the ladder as he matures, but this integration necessarily depends on a downward thrust into details, discriminations, and subclasses. He is on a two-way street: sometimes he needs to

trace his over-generalizations down to their inadequate sources, and sometimes he needs to build new ideas from the ground up. He needs to place "pop fly" under "parabolic trajectory," to subordinate propositions as well as classes to each other, to derive higher abstractions from lower ones, and to utilize lower ones as instances of higher ones.

But forming concepts and making assertions concern only words, phrases, and sentences. If we follow convention in limiting our concern with abstraction to these small units of discourse, we shall not touch on what are ultimately the most important units, the wholes — the entire essay, the total story, the complete drama. Whatever their mode, let me call these whole pieces monologues, to indicate that each piece, whether spoken or written, is a sustained utterance by one speaker who is developing a subject for some purpose. In other words, *I would like to apply abstraction beyond the word, sentence, and paragraph to whole monological compositions.* Concept formation and propositional statement are very important as parts within the whole and as parts that may expand into wholes, but a curriculum sequence must be based on the growth of entire monologues such as a student would be asked to read and write, not on discrete particles.

At first, children are limited in the kinds of discourse they can produce and receive to those of lower abstraction, but as their conception matures, they add to their repertory kinds of discourse of increasingly higher abstraction. The distinction between a high abstraction level of concepts and statements, and a high abstraction level of whole pieces of speech is crucial, for a first-grader may be able to produce and understand single-utterance generalizations and syllogisms (see the earlier example supplied by the father of the parents' meeting) but be unable to write and read essays that are sustained expositions and argumentations. In other words, he begins with fragments of high abstraction embedded in a discourse of low abstraction and ends with fragments of low abstraction embedded in a discourse of high abstraction. Put another way, he learns gradually to elaborate his generalizations or syllogisms from a single utter-

ance into the organization of an extended monologue. A sentence structure becomes an essay structure; an embedded idea, a framing idea. The elaboration and expansion of small language structures into full discourses is itself a major dimension of growth. It depends on increasing abstractive ability. To understand the importance of this point, the reader may imagine all that is entailed in shifting a generality from a sentence to a monologue.

We do have to distinguish, however, between the capacity to produce a given discourse and the capacity to receive and understand it. It seems clear to me that the reading schedule, though proceeding through the same steps as the writing schedule, and in the same order, would run ahead of the latter in most cases. That is, a student would read, say, essays of generality before attempting to write them. In fact, his own ability to monologue at that level may partly depend on prior familiarity with others' monologues at that level.

But not all discourse is monological development of a subject. Most discourse, as a matter of fact, is dialogical — conversation. Reading and writing have an oral base, which is another way of saying that monologue emerges from dialogue. And that is itself another dimension of growth. To take into account this progression from talk to print, from dialogue to monologue, I must pick up a point made at the outset — that we abstract *for* as well as *from*.

The referential relation of *I–it* must be crossed with the rhetorical relation of *I–you,* in order to produce a whole, authentic discourse. Rhetoric, or the art of acting on someone through words, is an abstractive act. That is, one performs the same activities in pitching a subject to an audience as one does in extracting that subject from raw phenomena: one selects and reorganizes traits of things, digests, codes preferentially. A course in rhetoric teaches how to present material successfully, how to find subjects; how to choose words and sentence structures, how to enchain items in sequence and patterns. Both abstracting *from* and abstracting *for* concern the same kinds of choice. The difference is whether the speaker–subject relation

or the speaker–listener relation is determining the choice — the extracting from the source or the anticipation of audience response. Representing reality to oneself and presenting it to others are merely two aspects of the same process, which is abstraction. Once coding is verbal, we are hard put to conceive of it as solely abstracting from. In fact, I will make the assertion that neither abstracting from nor abstracting for exists apart from the other in the universe of discourse. "Composition" means handling both dimensions at once; a speaker always stands in some relation to both his subject and his audience. It is not always possible, in looking at a composition, to tell which choices of words and organization stemmed from selective summary of the subject and which from an effort at getting certain effects on an audience. When we think it is the latter we call the choice "rhetorical." So to delineate a sequence of kinds of discourse, we must use these two dimensions of abstracting as coordinates with which to map the universe of discourse.

Kinds of Discourse

For the sake of parsimony, the things that make for variation in discourse can be put as a matter of time and space. (1) How "large" in time and space is the speaker, the listener, the subject? (2) How great is the distance between them? (3) Do two or all of them coincide? Since these questions relate directly to the "removal" of phenomena from time and space (the degree of particularity or generality), by asking them we may easily relate "persons" (I, you, it) to levels of abstractions.

For one thing, the very activity of the discourse — thinking, speaking, informal writing, or publishing — is essentially determined by the distance in time and space between speaker and listener. If first and second persons are two parts of the same nervous system, the discourse corresponds to what we call thinking or reflecting. If they are two separate people within vocal range, the activity is speaking. If they are not in the same place, or are in the same place but at different times, the discourse will have to be in writing. Suppose now that speaker and listener are not only far apart but that instead of being a single

correspondent the "listener" is plural, far-flung in space; the writing will have to be published, no mere mechanical issue, since all the substructures of the discourse will have to accommodate something common in that mass audience: vocabulary, style, allusions, logic, rhetoric will all have to gear themselves to what the average person in that audience can understand, appreciate, and respond to.

Let us array these activities in order of increasing distance between speaker and audience, between first and second person:

Reflection — Intrapersonal communication between two parts of one nervous system.
Conversation — Interpersonal communication between two people in vocal range.
Correspondence — Interpersonal communication between remote individuals or small groups with some personal knowledge of each other.
Publication — Impersonal communication to a large anonymous group extended over space and/or time.

Several features relevant to curriculum appear already. (1) The communication system expands throughout the progressions. (2) Each kind of discourse is more selective, composed, and public than those before. (3) Feedback becomes increasingly slower until it tends to disappear, which is to say that two-way transaction is yielding to one-way transmission. (4) Emphasis shifts necessarily from the communication drama between first and second persons to the bare message or content; from the *I–you* relation to the *I–it* relation.[2]

The time distance between speaker and subject at the time of speaking can usefully be represented by translating the subject into a verb tense, since tenses indicate when events happened in relation to when the speaker is speaking. With the so-called time differences, we are actually dealing with conceptual options. I may present the Civil War as *what happened* once upon a time between the North and the South, or as *what*

[2] These four points are very redundant, being merely different aspects of increasing abstraction; rather than pursue how it is they are factors of each other, I leave this to the interested reader.

happens whenever an agrarian aristocracy and an industrial democracy try to co-exist, or as what *was happening* when Johnny was going to college, or as what *will happen* again if we are not careful. In other words, I may symbolize the same phenomena according to different logics, which we may call time differences if we like, but which amount to different levels of abstraction.

The logic of lowest verbal abstraction is *chronologic* (narrative), because it conforms most closely to the temporal and spatial order in which phenomena occur (although already this represents considerable selecting and editing of events by our perceptual apparatus and memory, both of which have minds of their own). After playing historian, we play scientist: we assimilate a lot of narratives into a generalization by the *analogic* of class inclusion and exclusion. First I collect lots of anecdotes about Harry's behavior and then I conclude he is a bum. (I place his different acts into some class, because I see them as analogous). Or Toynbee examines what happened in several societies, classifies some events as stimuli and others as responses, and produces an historical hypothesis — at which point he is, strictly speaking, not an historian but a scientist. After playing scientist, we play mathematician: by means of *tautologic* we transform general assertions into other general assertions which mean the same thing but, because they are now in another symbolic form, imply further assertions which we could not see before. This is the level of equations and definitions. By transforming x through the tautology of an equation into y plus 3 I can now view x in a new light that permits me to infer the unknown from the known. Similarly, defining man as the glory, jest, and riddle of the world transforms an entity into a new symbolization whereby I see it differently. Thus tautologic produces *what may happen,* aspects of phenomena we could not infer merely from chronological or analogical abstractions, although without these two stages of processing the phenomena first we could not arrive at tautology.

For an example of the whole progression, imagine an on-the-spot recording of what is happening before the guillotine, then

an eyewitness account of what happened one day during the French Revolution, then a historical generalization about the Reign of Terror, then a political scientist's theory about revolutions starting right and moving left.

I will now recapitulate what I have just said in the form of another progression, this time of increasing distance between first and third persons, between the speaker and his subject.

what is happening — chronologic of perceptual selectivity
what has happened
what happened — chronologic of memory selectivity
what was happening
what happens — analogic of classification
what may happen (will, could, etc.) — tautologic of transformation

What is important for a curriculum in this are: (1) Just as the logics employed lead us up the abstraction ladder, so do the human faculties successively employed — perception, memory, and ratiocination. (2) One stage cannot take place until the ones before it have taken place. (3) The phenomenal subject expands increasingly in time and space until the subject begins to become logic itself; that is, "events" become less and less space-time bound, and in being processed from narratives to generalizations to theories, an enormous amount of phenomenal material is "used up" and replaced, in assertions, by logic. Or, (4) outer events are more and more substituted for by inner events, in accordance with the definition of codification.

Doing a little tautological transforming myself:

what is happening — drama — recording
what happened — narrative — reporting
what happens — exposition — generalizing
what may happen — logical argumentation — theorizing

Thus some traditional categories of discourse — drama, narrative, exposition, and argumentation[3] — become redefined in

[3] Drama replaces description, which is not truly a distinct mode of discourse, being some kind of either narrative or general statement.

terms of (1) distance between speaker and subject; (2) levels of increasing abstraction; and (3) a sequence of activities or skills which the student should learn how to do — record, report, generalize, and theorize — in that *order* (keeping in mind that we are referring to whole discourses, not just to sentences). In learning these skills he would be also mastering chronology, analogy, and tautology.

But this speaker–subject progression considers only *what,* not *for whom.* So we now attempt to integrate it with the progression of the speaker–listener relation by imagining a speaker recording, reporting, generalizing, and theorizing at each of the four degrees of distance from his audience. Let us suppose, for example, that I am sitting in a public cafeteria eating lunch. People are arriving and departing, passing through the line, choosing tables, socializing. I am bombarded with smells of food, the sounds of chatter and clatter, the sights of the counter, the tables, the clothing, the faces, the gesticulations and bending of elbows. But I am not just an observer; I am eating and perhaps socializing as well. A lot is going on within me — the tasting and ingesting of the food, reactions to what I observe, emotions about other people. I am registering all these inner and outer stimuli. My perceptual apparatus is recording these moments of raw experience, not in words but in some code of its own that leads to words. This apparatus is somewhat unique to me in the way it selects and ignores stimuli and in the way it immediately connects them with old stimuli and previously formed conceptions. It is difficult to separate this sensory recording from the constant stream of thoughts that is going on simultaneously and parallel to the sensory record but may often depart from it. This verbal stream is the first level of discourse to be considered. The subject is *what is happening now,* and the audience is oneself.

Now, while sitting in the cafeteria I may discourse to myself at any level of abstraction: within the frame of what is happening in and around me (introspection and observation), I may embed what happened (memories triggered by ongoing stimuli), what happens (general reflections prompted by the

scene), or what may or could happen (theoretical considerations also generated of the moment). Thus, self-verbalization may be about the four major *whats* of the abstractive hierarchy, but the three higher ones occur as fragments within the encompassing discourse of what is happening; indeed, memories, generalizations, and theoretical thoughts are a part of the ongoing inner action.

Suppose next that I tell the cafeteria experience to a friend some time later in conversation. For what reason am I telling him? Would I tell it differently to someone else? Would I tell it differently to the same person at another time and in different circumstances? These are not rhetorical questions but questions about rhetoric. The fact that my account is an unrehearsed, face-to-face vocalization, uttered to *this* person for *this* reason at *this* time and place and in *these* circumstances determines to an enormous degree not only the overall way in which I abstract certain features of the ongoing panorama of the cafeteria scene but also much of the way I choose words, construct sentences, and organize parts.

If in speaking to my friend I treat the events at the cafeteria as *what happened,* the subject will necessarily partake a little more of my mind and a little less of the original matter. Although the order of events will still be chronological, it is now my memory and not my perceptual apparatus that is doing the selecting. Some things will stick in my mind and some will not, and some things I will *choose* to retain or reject, depending on which features of this scene and action I wish to bring out. Of the details selected, some I will dwell upon and some I will subordinate considerably. Ideas are mixed with material from the very beginning, but the recollection of a drama — a narrative, that is — inevitably entails more introduction of ideas because this is inherent in the very process of selecting, summarizing, and emphasizing, even if the speaker refrains from commenting directly on the events.

Of course, instead of recounting the cafeteria scene to my friend in person I could write it in a letter to an audience more removed in time and space. Informal writing is usually still

rather spontaneous, directed at an audience known to the writer, and reflects the transient mood and circumstances in which the writing occurs. Feedback and audience influence, however, are delayed and weakened. Written discourse must replace or compensate for the loss of vocal characteristics and all physical expressiveness of gesture, tone, and manner. Compare in turn now the changes that must occur all down the line when I write about this cafeteria experience in a discourse destined for publication and distribution to a mass, anonymous audience of present and perhaps unborn people. I cannot allude to things and ideas that only my friends know about. I must use a vocabulary, style, logic, and rhetoric that anybody in that mass audience can understand and respond to. I must name and organize what happened during those moments in the cafeteria that day in such a way that this mythical average reader can relate what I say to some primary moments of experience of his own.

But I do not have to treat the events in the cafeteria as a narrative. Whether talking to a friend, corresponding to a known group, or writing for publication to a mass readership, I may speak of my cafeteria experience as *what happens,* in which case I am now treating my once-upon-a-time interlude at the cafeteria as something that recurs. I have jumped suddenly, it seems, from narrative to generalization. Actually, as we have said, ideas creep in long before this but are hidden in the processing. Now they must be more explicit, for only by renaming the experience and comparing it with other experiences can I present it as what happens. No primary moments of experience recur. What we mean is that we as observers see similarities in different experiences. Only the human mind, capable of sorting and classifying reality, can do this. What I do, for example, is make an analogy between something in the cafeteria experience and something I singled out of a number of other experiences. I summarize a lot of little formless dramas into pointed narratives and then I put these narratives into some classes, which I and others before me have created. In this third stage of processing, then, the cafeteria scene will become

a mere example, among several others, of some general statement such as "The food you get in restaurants is not as good as what you get at home," or "People don't like me," or "Americans do not socialize as readily with strangers in public places as Italians do," or "The arrivals and departures within a continuous group create changes in excitation level comparable to the raising and lowering of electric potential in variously stimulated sensory receptors." It is apparent that these sample generalizations could all have contained the cafeteria experience as an example but vary a great deal in their abstractness, their range of applicability, their objectivity or universal truth value, and their originality.

Finally, in its most distilled form, I might speak or write about the cafeteria experience without referring directly to it at all, even as a brief example, for I might be developing an anthropological theory in which the generalization about how Americans socialize in public places would be combined with other generalizations similarly derived from other material. The events of that scene have been so thoroughly subsumed now by my abstracting that they no longer appear as such — but they are nevertheless a part of my discourse. And again, this theory might be developed in a conversation, correspondence, or publication, thereby becoming subject to the differentiating qualities of colloquial speech and formal writing, private or public monologue.

In this suggestive rather than systematic way, let me pursue the intersecting of speaker–subject and speaker–listener relations, beginning with self-verbalization.

Interior Dialogue

In small children, interior dialogue is vocalized as Piaget's "egocentric speech," or prattle; in older children it goes underground, as designated here. Reflect for a moment on how different the qualities of style, rhetoric, allusion, tone, and organization will be when the same subjects are discoursed about in the "socialized" speech of conversation, correspondence, and formal writing. Although some people talk much as they think, still

we always scan, censor, select, re-name, reorganize, etc., all this material before speaking of it to another. Intent is different (consider the rhetorics of rationalizing to oneself and of persuading another), and we take our first step toward universalizing the material and the expression of it so that our external listener may understand what we say and and be affected by it. In interior dialogue we have subjective, spontaneous, inchoate beginnings of drama (what is happening), narrative (what happened), exposition, (what happens), and argumentation (what may happen). As it bears on curriculum, this means that students would tap, successively, their inner streams of sensations, memories, and ideas, as raw material for recordings, narrative reports, and essays of generalization and theory. This cycle is both immediate and developmental: for example, older students might rewrite a subjective recording as a report to an outside audience, and younger students would not attempt to tap introspections.

Conversation

When the communication system expands from two parts of a single nervous system to two or more separate nervous systems, introspection comes out as something like, "I'm getting tired." Observation comes out as "Yond Cassius has a lean and hungry look" (which, we note, is Caesar talking to himself as much as to Antony; the progression from interior to exterior dialogue is truly gradual). Retrospection comes out as gossip, anecdotes, more or less formal reports. Generalization and argumentation may come out as a socratic dialogue of ideas, or analogy and tautology may be put in the service of emotional dialectic as generalizations and argumentations used to persuade an interlocuter.

This is the place to say that so far in this scheme I have been considering only declarative assertion; we must not forget the imperative and interrogative modes, which fill up a great deal of both dialogue and correspondence. When they prevail is when speaker and listener are proximate and known, when response and two-way transaction are possible. They disappear as feedback disappears. It is commands, entreaties, admo-

tions, and question-and-answer that most strongly assert the action relation of first and second persons. Catechisms and imperatives, along with retorts, make the existential, rhetorical, and behavioral features of *I–you* most keenly felt. On the other hand, the longer one person monologues uninterruptedly, the more his discourse is likely to subordinate his relation to his listener in favor of his relation to his content; that is, he is less and less influenced by the presence and responses of his interlocutor and becomes more like someone writing to someone else at a distance.

Dialogue, internal or external, will establish language as *behavior,* like any other behavior — spontaneous, ongoing, expressive, manipulative — an attempt to *do* something to or for or against or with another "party." This is the genesis of rhetoric. In succeeding kinds of discourse, emphasis will naturally shift to language as *reference to* behavior, then finally to language as *logical transformation,* meta-language.

Correspondence

Correspondence is dialogue-at-a-distance, an exchange of written monologue between parties too small to require publication of the discourse and known enough to each other so that more personal rhetoric, allusion, etc., is appropriate. The designation is meant to include any kind of writing to a small, familiar audience, whether in letter form or not. Writing must somehow compensate for the loss of voice features such as stress, pitch, and intonation, and for the loss of gesture and facial expression. Correspondence offers an excellent opportunity to teach some of the real functions of punctuation, diction, and stylistic devices. Commas, dashes, and semicolons, ironic word choice, reversal of word order often do what we do other ways in speaking face to face. Writing should be taught as an extension of speech. Nowhere is this more sensible than with punctuation. Generally, much of writing technique is a matter of simulating or replacing vocal characteristics.

Also, correspondence permits informal, vernacular practice of the four major subjects — what is happening, what happened, what happens, and what will or might happen — but

still plays up the rhetorical relation or communication drama, which remains relatively intimate and therefore much more obvious than it will be later when the second person becomes anonymous, and still later when the first person "erases himself" (which of course never *really* happens). Correspondence, however, may range from the unremitting attempts to manipulate each other of the man and woman in Ring Lardner's "Some Like Them Cold" to the socratic dialogue-at-a-distance of the Holmes-Laski letters.

Public Narrative

Increasing pluralization and therefore generalization of the second person tends to enforce higher abstractions, formal writing of the sort one would publish. Beginning perhaps with personal journals, certain kinds of diaries that are addressed neither to oneself nor to another person nor yet to the world at large, we may imagine a progression of writing that is personal in the sense that it is about the speaker but that is aimed at a general audience and therefore employs the sub-structures of the language more universally. We may establish a gradient of discourse here going from accounts of personal experience recorded immediately or on successive dates, to retrospective accounts written increasingly longer after the events; in other words, from personal journals to detached autobiography. Then the emphasis shifts from *Tom about Tom* (autobiography) to *Tom about Tom and Dick(s)* (memoir) to *Tom about Dick* (biography) to *Tom about Dicks* (chronicle). First one writes about recent personal experience, then about remote personal experience, then about one's own and others' combined experiences as one recalls them, then only about the experience of other individuals, then about group experience — the latter two being of course secondhand.

A number of the implications of this spectrum need to be brought out. Enormously important for the abstractive process, when writing about one's own experience is the time interval between the events and the recording or narrating of them. Am I writing while in the same state or stage as when I under-

went the experience? How much other experience that has occurred in the interval is now influencing how I tell what happened then? Writing about oneself of a long time ago is very much like writing about another person. Tom-now and Tom-then are in a very real sense two different persons (first and third.) Just as the transition from verbalizing to oneself and vocalizing to another is gradually effected, so is the transition from talking about oneself to talking about other people and things. Eyewitness accounts and memoir, in which the speaker becomes less protagonist and more observer, are steps in this transition. The key to memoir and eyewitness accounts is *resonance* between the main figure or figures (the third person) and the observer-narrator. Why does he choose to tell this? The answer is that he responds personally to what happened, and includes these responses in the narrative; he identifies, he treats that other *as if* it were himself — just as he treated his former self as if he were another.

If the main issue in recording and reporting one's own experience is time distance, the main issue in writing of others' experience is often space distance. Is the writer there where the events occurred? How does he know what he claims to know? Channels of information become now a great concern. They are essentially three for a reporter close enough in time and space to the principals to have first-hand information. Knowledge of what happened externally he knows by virtue of being an *eyewitness;* knowledge of the inner life by virtue of being a *confidant*; and knowledge of background and general circumstances by virtue of being a member of a special *chorus* or limited community in which the principals circulate and are known. Note that the three channels of information are increasingly abstract: what I can know as eyewitness comes from my perceptual recording of sights, deeds and words; what I can know of others' inner life is their verbal abstraction of it for me; what I can know of background and general circumstances is by definition summary, secondhand generalizations and inference. Now, a narrator playing all three roles is able to give most immediate and complete coverage. In fiction, the narrator

opts to play two or three of these roles in varying ratios; in actual reportage, the narrator can only play certain roles in certain ratios. If, say, he has observed the subject but not interviewed him, he cannot report inner life except by inference. The more remote and tenuous the relation in actual life between the narrator and his people, the more he must fall back on chorus information; and the more remote the people and events are in time and space, the larger and vaguer the chorus and the more its information is in the form of written documents, until finally we are consulting reference libraries for all we will ever know about historical personages and events. But these communal documents are what? Well, they are precisely the kinds of discourse we have been discussing before — recorded conversation, letters, journals, autobiographies, memoirs, chronicles, previous histories. So our student writing and reading his way through this spectrum is learning to be a case-writer and historiographer.

He is also learning to be a naturalist. I have neglected for some time now the reporting of non-human phenomena, which began with the subjective sensory recording of interior monologue. The nomenclature for narratives of nature is harder to come by. You will have to imagine their equivalents at various stages of the spectrum — accounts of what is happening and what happened among some animals, plants or stars. I assume a scientist does a lot of writing up of field trips, lab experiments, etc., before he sits down to analogize particular events into an hypothesis about "recurring" or "repeatable" events. Of course he is limited to two roles at the outset — eyewitness and chorus. Alas, he cannot play confidant to animals and plants. He has the same essential problem, however, as his brethren in the humanities: how to tell the observer from the observed, the symbolizer from the symbolized, the information from the informer.

Public Generalization and Inference

Increasing extension of the subject over time and space, and increasing distance between speaker and the original phenom-

ena which he is abstracting about, makes for a gradual transition between the chronologic of reporting what happened to the analogic of generalizing what happens, all by a process of summaries of summaries of summaries. The logic of classes has of course been at work long before this frontier is crossed, but working *implicitly*. Now, in generalization, it becomes more the subject itself and is dealt with explicitly in lead paragraphs and lead sentences as well as in the choice of frankly classificatory nouns. The tense shifts to the present tense of generalization.

Regardless of whether the discourse is about people or things, if it purports to tell what happens (rather than what happened) it is scientific. Science and history are distinguished from each other not so much by what they are about (sociology and psychology are scientific, and geology and evolution are historical) as by the level of symbolization to which phemonema have been abstracted. But what about generalization that did not take off from empirical phenomena in the first place? Precisely, a student who has abstracted from the ground up will automatically know the immediate difference between science and metaphysics — that one creates classifications inductively by sorting narratives and records of empirical data, and the other inherits — *a priori* — its classes and categories. In short, whereas science has worked its way, so to speak, through all the kinds of discourse up to this level, metaphysics *begins* here. Ultimately, of course, the difference between the two is not so great and the student should discover this too. *A priori* categories are inherited from somewhere; their provenance from the evidence of the senses is simply much less direct and evident than with science, which, for its part, rests ultimately too on assumptions, the assumptions built into that very neural apparatus which must do all the symbolic processing and about which science knows yet so little.

In these upper reaches of the spectrum, rhetoric becomes increasingly synonymous with formal, explicit logic. That is, the classes the speaker creates and the inferences he makes on the basis of them constitute his main way of appealing to and acting on his reader. Since formal logic is such by communal agree-

ment, rhetoric becomes as impersonal as it can get, in keeping with the growing anonymity of the speaker. As a loose rule, we may state that the pluralization and generalization of one "person" tends to bring on the pluralization and generalization of the others.

Of course chronology, analogy, and tautology are frequently found in mixture; discourses combine narrative, expository generalization, and inferential argumentation. For the student, however, it may be helpful to assign readings and writings in a purer form first, so that in mixing them he will know what he is doing and so that he will recognize the mixture in others' writing. At a fairly concrete level, for example, a biology textbook, a government manual on procedures, Montaigne's essay on friendship, and Pope's *Essay on Man* represent sustained generalization. At a higher level, *Summa Theologica, A Critique of Reason,* and *Language, Truth, and Logic* represent sustained logical combining of some prior generalizations assumed as premises. But many an argumentation of a theory contains not only the generalizations from which it derives, but also, embedded in the generalizations, some bits of narrative as illustration or documentation of the generalizations (Einstein's *Relativity* is an example). In fact, most high-order discourses contain, like parentheses within parentheses, successive embeddings of the lower orders which they have subsumed.

Eventually "English" passes into symbolic or mathematical logic, à la Russell, Quine and others. This is where the two subjects can be integrated to form a continuum from raw phenomena to the abstractest symbolizations. I think I have already indicated how the more substantive subjects of history and the sciences could be integrated, and at which levels. Literature tends to fall along the lower ranges, with drama as the point of departure, fiction coinciding with the range of "personal history" that precedes communal history, and poetry playing the whole scale. It is interesting that poetry cannot be located by abstraction and person. To distinguish it from other discourse we have to invoke a different concept altogether — Suzanne Langer's division between discursive symbols and presentational

symbols, a split which we may imagine as running vertically down the abstractive spectrum. To the extent that it *does* differ, poetry is presentational symbolization, akin to music and art.

The Spectrum of Discourse

Now for a highly schematic representation of the whole spectrum of discourse, which is also a hierarchy of levels of abstraction.

Interior Dialogue (egocentric speech)			P
Vocal Dialogue (socialized speech)	*Recording, the drama of what is happening.*	PLAYS	O
Correspondence			
Personal Journal			E
Autobiography			
Memoir	*Reporting, the narrative of what happened.*	FICTION	T
Biography			
Chronicle			
History	*Generalizing, the exposition of what happens.*	ESSAY	R
Science			
Metaphysics	*Theorizing, the argumentation of what will, may happen.*		Y

This linear model falsifies a lot. For example, it tends to take the speaker–listener relation first, *then* the speaker–subject rela-

tion. Only a model of one or two dimensions more could justly represent the simultaneous play of both relations and the many wheels within wheels. I will try to indicate some of this multidimensionality a little more than I already have, because it is what would make the schema more realistic.

In either inchoate or vestigial form, something of every level is found at every other level. The major movement of drama-narrative-exposition-argumentation is contained already in interior dialogue — in streams of perception, memory, and ratiocination. Likewise, the three main logics — chronology, analogy, and tautology — operate at every level. Fragments of generalization and theory, for example, are embedded in narrative as single utterances and embodied in narrative as implicit classes and propositions upon which selection and emphasis are based. Although these three logics have a phase where each emerges fully as the dominant organization, each also appears in the others as a germ or vestige. Conversation and correspondence can be monologuist narrative and exposition as well as dramatic interplay. Biography may contain all of the discourses that precede it, either en bloc or assimilated — dialogue, letters, diaries, and first-person documents by the subject himself. In general, the spectrum begins by featuring rhetoric and secreting logic within it; it ends by featuring logic and looking barefacedly unrhetorical, but anyone who has climbed the abstraction ladder knows how much the rhetoric of history, science, and metaphysics is merely buried in the previous processing.

None of this theory, however, deals explicitly with one extremely important dimension of growth. What about the mythic mode of representation? The schema just presented is based on the hierarchic symbolizing of actualities, on information-processing. But people fictionalize. They project into invented stories those unobjectified forces of the psychic life that are hard to name or even recognize. Storying is a mode of abstracing, allowed for in the foregoing theory but not actually treated there. At any time of life we have some inner material that we cannot express directly and explicitly; we have to say it indirectly and often unconsciously, through metaphorical fiction.

Usually, the older we grow the more we can objectify and talk explicitly about feelings and ideas, but a child must for a long time talk and read about these things through a sort of allegory. There are two reasons for this. One is that he is not ready to acknowledge to himself a lot of his thoughts and feelings because he must defend against them. Another is that his abstractive powers are not developed enough to enable him to conceptualize, name, and interrelate these intangible things. As regards their deepest inner material, adults are in the same boat, and so we have art. In other words, students progressively push back the frontier of the unknown by converting the implicit into the explicit, but no one can go all the way.

Whereas adults differentiate their thought into specialized kinds of discourse such as narrative, generalization and theory, children must for a long time make narrative do for all. They utter themselves almost entirely through stories — real or invented — and they apprehend what others say through story. The young learner, that is, does not talk and read explicitly about categories and theories of experience; he talks and reads about characters, events, and settings. For children, though, these characters, events, and settings, are charged with symbolic meaning because they are tokens standing for unconscious classes and postulations of experience, the sort we can infer from regularities in their behavior. The good and bad fairies are categories of experience, and the triumph of the good fairy is a reassuring generalization about overcoming danger. In the *Wizard of Oz* the wizard is a humbug and the bad fairy can be destroyed by water; Dorothy is stronger than she thought, and the adults are weaker than they appear at first. *Alice in Wonderland* is amazingly similar in statement. A tremendous amount of thought — and intricate, at that — underrides these plots. Objects, personages, and settings are categories of experience; actions are relations among the categories; and plot is a kind of syllogism or postulation — all of which is to say again that children must represent in one mode of discourse — the narrative level of abstraction — several kinds of conception that in the adult world would be variously represented at several

levels of abstraction. Growth, then, is toward a differentiation of kinds of discourse to match the differentiation in abstraction levels of thought. Myth, legend, fairy tale, and fiction only appear to be a low level of discourse like narrative reportage; actually they are a compression of several levels into one, which accounts for their multiple layers of meaning.

Growth in the fictive mode runs somewhat the reverse of the abstractive order I have been describing. Whereas the symbolizing of recognizable, objectified experience does, I believe, proceed up the ladder from the here-now to the there-then, it is in the nature of disguised psychic material that one symbolizes it first in the there-then and only gradually comes to represent it in explicitly personal terms. In other words, as regards his external observation and his acknowledged feelings, a child moves, in his speaking and writing, from the firsthand, first-person concrete levels of abstraction toward the secondhand, third-person timeless realms of abstraction. But as regards his unconscious psychic life, he moves along a continuum that begins in the far-fetched, with things remote from him in time and space, and works backward toward himself. As children we project ourselves first into animals, fantastic creatures, folk heroes, and legendary figures. Slowly, the bell tolls us back to our sole self. Gradually we withdraw projection as we become willing to recognize the personal meaning symbolized in our myths, and able to objectify inner experience to the point of treating it explicitly.

One can question whether this seeing through our own fictions and fantasy is really a good thing, since the original function of such symbols, obviously answering a profound need, is destroyed by such rational lucidity. The contemporary trend, for example, to scientize mythic literature by abstracting archetypes out of the stories and translating their figures and actions into explicit categories and statements of experience, converts this literature from a mode which serves a psychic function into a common declarative mode having other functions. The same is often true of critics' expository essays interpreting the symbols

and "hidden meanings" of poetry and fiction. It is interesting that authors and children are aligned in their antagonism to this analytical process of de-symbolizing, perhaps because it breaks the unconscious psychic engagement with the symbols that is the point of the creations in the first place. The fact is that as people grow up, they tend to withdraw projections anyway, to become lucid realists who see through symbols. Is there any point in hastening this de-mythologizing by talking in class about archetypes and by chasing down literary symbols?

There is a way, however, in which a theory of literature such as Northrop Frye's can help the teacher in describing the growth of his students along the fictive dimension. I have in mind especially his five kinds of heroes — the supernatural or divine figure, the mortal but miraculous man, the king or exceptional leader, the average man, and the ironic anti-hero. This progressive scaling down of the hero not only traces the history of literature, with its shifts in dominant literary modes from epic and myth to legend and romance, to tragedy, to bourgeois novel and play, to a very inner and underground fiction, but it also corresponds to what I have been calling the withdrawal of projection or the movement from the far-fetched there-then to the actual here-now. Every child recapitulates the history of the species to this extent: he first embodies his wishes for power in fantasies of omnipotence akin to the myths and epics of divine and supernatural heroes; the figures, actions, and settings he likes to read about and create are as remote as possible from himself and the circumstances of his own life. Starting at this extreme, he shrinks his fantasies increasingly toward figures like himself dwelling in his own time and place, thus passing through legend and romance, tragedy, and realistic fiction. This passage comes about partly because he is gaining real power as he grows up and consequently needs less and less to fantasize about power, and partly because he is becoming more aware of and explicit about his wishes and fears and thus wants to read and write about them for what they are. All this, however, does not mean that in the beginning he cannot already

appreciate familiar realism in some conscious areas of experience, or that later, he will not still need the far-fetched modes for unconscious areas of experience.

Any sort of fiction is as much an abstraction of reality as any other mode of discourse — and a high level one at that. The concrete aspect of story is misleading because, as I have implied, it actually compresses the logic of classes and the logic of propositions into a chronological mode. What psychoanalytic theorists have called "condensation" in the primary-process thinking of dreams is, I feel sure, just this compression of three logics into one: concrete figures, objects, and settings are doubling as classes of experience; concrete actions as the relations among classes; and plots as syllogisms. Hence so much rich ambiguity and potent symbolism. Stories have a "logic of the events" and reach a "conclusion." Obviously, it would make no sense to blandly place fictive stories on the same rung of the abstraction ladder as narrative reportage of actualities just because they both follow a chronological order, for the previous assimilation of experience underlining each is different. The story of Odysseus or of Beowulf, for example, is actually very abstract in the sense that it condenses the experience of a whole culture as much as, though not in the same mode as, obviously more abstract books such as today's sociological treatises. Like earlier man, the child cannot read and write psychology and sociology, but he can handle these subjects through ambiguous concrete symbols that, in effect, but not in appearance, span several stages ahead in the abstractive hierarchy.[4] A piece of narrative reportage too, however, may span upward in the same way, as with the case history, where the personages and their behavior are clearly offered as representative of a type of person and a type of behavior. Indeed, typological narratives, including a lot of biography and history, are one of the transitional ways that one order of abstraction becomes a higher order. Thus a stu-

[4] The thesis of Claude Lévi-Strauss's *The Savage Mind* is that primitive people do not think less, or less intricately, than civilized adults; they merely think in a different mode.

dent might, like case writers and novelists, say in effect *what happens* by telling *what happened.* Narrative becomes generalization gradually, by embodying ideas in representative peoples and actions (as in Orwell's "Shooting an Elephant"), and by embedding generalities in the text of the story to "point" it (as in fables with morals).

But what about a sequence of specific linguistic structures and rhetorical issues? Shouldn't these be serially focused on one at a time? I think this naturally happens as one reads and writes his way through some kind of progression like the one sketched here. That is, the various abstraction levels of discourse — recording, reporting, generalizing, and theorizing — and the varieties of audience relationships, automatically program, if you will, a meaningful series of linguistic structures and rhetorical issues. This can only be an hypothesis of course, but I think that shifting, say, from narrative discourse to that of explicit generalization necessarily entails shifts in language and rhetoric and thus tends to bring successively to the fore different language structures and compositional issues. Tense, as I have indicated, is one thing that changes. But so do other things. Adverbial phrases and clauses of time, place, and manner that abound in recording and reporting give way, in generalization and theory, to phrases and clauses of qualification; temporal connectives, transitions, and organization perforce yield to logical ones. The kinds of paragraph structure one tends to use shift. And generally, the increasing complexities of sentence structure, described as embeddings by transformational grammar, accompany the increasing cognitive ability to interrelate and subordinate classes and propositions. What will further the normal growth of sentence elaboration is practice in language tasks that are at bottom intellectual. The point is that a specially devised program of isolating these structures and issues for the student is unnecessary and probably misguided, since those very things will arise in developmental succession anyway if the correspondence I am claiming between levels of discourse and stages of growth is true.

Qualifications about Sequence

This whole theory of discourse is essentially an hallucination. Heaven forbid that it should be translated directly into syllabi and packages of serial textbooks. I say this for two reasons. The first is that the theory is far too schematic to be true. I know from research I have conducted in grades 4–12 that the development of writing is unbelievably relative, to the point that pupil capacity seems to vary as much horizontally throughout a population of one grade as it does vertically through the grades. The second reason is that we would know a lot more now about growth in reading and writing if textbooks had not prevented teachers from actually finding out these facts about sequence that the textbooks were guessing at (but advertising as scientific truth). The main source of knowledge about children's language development could be the classroom itself. In an open, trial-and-error approach, pooling experience and utilizing a tentative theoretical framework, teachers could amass specific information about what children can and cannot read and write at various stages of their growth.

This approach was the method of the research in writing I alluded to above, in which a number of teachers in different schools participated, trying out assignments I had devised, and talking over the results with me every week or so. I read a huge number of the papers produced and analyzed them qualitatively (i.e. unscientifically) in all sorts of ways. The theoretical framework was essentially the one I have been developing here. One of my rare privileges was to be able to examine side by side what children of very different ages did with the same assignments.

Here are some conclusions I drew. Among the many non-developmental factors that cloud the issue, the past conditioning of the students (and of the teachers) accounts for more variation than anything else. To separate out developmental differences is virtually impossible when white middle-class fourth-graders write rings around the ninth-grade ghetto chil-

dren in sensory and memory writing, and when eighth-graders of one suburb handle eye-witness nature reportage better than tenth-graders of a similar suburb. An assignment to invent an interior monologue, which we didn't dare try out below the ninth grade, was unwittingly fulfilled very well by some fourth-graders doing a fiction assignment. At every turn of the road we ran into the disconcerting fact that what a student could write seemed to depend more on his out-of-school language environment and previous school training than on his age. It is true, however, that certain assignments were not given below a certain grade because the teachers did not want to inflict a debacle on either the children or themselves. Certain upper cutoff points on the abstraction ladder seemed obvious for certain ages. And only a few teachers of very able twelfth-graders would even consider assigning an essay that argued a theory from premises, a refusal that was undoubtedly based on good judgment but that may show the ineffectuality of present schooling rather than a developmental limit.

But the question is not just what students *can* do but what they *want* to do and *how* they do it. Fourth- and fifth-graders, we found, could perfectly well take sensory notes of ongoing events and write them up, or write streams of memories and compose one of them into a narrative. But they preferred the latter because, as I interpret, memories come out of themselves — are personal and already meaningfully organized — whereas sensory recording is relatively impersonal and hard to organize. But, if the children are taking observational notes on the behavior of pets and intend to put these notes to use afterwards for practical purposes, then the recording assignment again becomes personal and meaningful, and they want to do it. Older students can record at a random locale and *give* the recording meaning, starting merely with an observer's curiosity that is not enough for younger students. Elementary school children can write monologues of various sorts but are more at home with dialogues, which follow a familiar and dramatic social give-and-take and don't require the logical continuities of mono-

logue. The monologues they write most easily are stories, of course, which follow a chronological continuity. But they do not make up stories easily without stimulants and prompters, and when they do, the stories are seldom original. Abandoning stereotypes — creating original classes and vehicles — does seem to be a feature of growth. If asked actually to create, not paraphrase, an essay of generalization, they simply make it so short that the real issue of continuity does not arise. So although one could claim that they can write high-level discourses of generalization, and even theory, this would be true only of utterances so brief as to finesse the basic assumption underlying my whole analysis of discourse — that the linguistic capacity to sustain such monologues depends on a cognitive capacity to explicitly interrelate classes and propositions, and to embed lower-order abstractions, as samples or evidence, into higher orders. Whether they are writing stories or ideas, children over-condense at first, and only later become able to elaborate and expand. But many underdeveloped junior and senior high school students have the same limitations: they write only synopses, and one can feel their reluctance to leave the haven of narrative.[5]

As for reading, it may well be that abstractive limitations hit children more in connection with individual concepts and statements than with total continuity, since all a reader has to do is *follow* the organization. But if he cannot comprehend the concepts and statements, he is lost. It seems to me that elementary school children are *able* to read many levels of discourse if the embedded terms are relatively concrete, but it is also true that many younger children are simply less *motivated* to read exposition than they are stories. I suggest, therefore, that curriculum experimenters look for abstractive problems in comprehension at the level of concepts, but look for them in composition at the level of the whole monologue.

[5] In *A Student-Centered Language Arts Curriculum, Grades K-13: A Handbook for Teachers* (Boston: Houghton Mifflin Company, 1968), I have reported more fully many of the experiments referred to here and have attempted to describe sequences of assignments in English consonant with the theoretical stand taken in this essay.

Towards a Summary

In trying to summarize discursive growth, I find that two current formulations — one by Piaget and one by Basil Bernstein — can encompass many of the dimensions considered here. Like most comprehensive and valuable theories, Piaget's notion that people decenter from an initial egocentricity as they get older is probably not susceptible of final empirical proof. And yet everywhere I look I see evidence. A few days ago my first-grade daughter, who was lining up some miniature bowling pins for me to shoot at, set up the wedge so that it pointed to herself, not to me. I see examples in missing commas, poor transitions, "faulty" logic, lack of focus, incoherence, anticlimax, and a host of traditional compositional problems. Rather remarkably, the theory of egocentricity relates to both abstracting from and abstracting for. This is perhaps because some *consciousness* of abstracting must precede growth in either. Differentiating among modes of discourse, registers of speech, kinds of audiences is essentially a matter of decentering, of seeing alternatives, of standing in others' shoes, of knowing that one has a private or local point of view and knowledge structure. Thus the following list of continuities is merely a set of variations on the theme of decentering.

1. From the implicit, embodied idea to the explicitly formulated idea.
2. From addressing the small, known audience like oneself to addressing a distant, unknown, and different audience.
3. From talking about present objects and actions to talking about things past and potential.
4. From projecting emotion into the there-then to focusing it in the here-now.
5. From stereotyping to originality, from groupism to individuality (this seems paradoxical, but egocentrism, as Piaget says, is basically just centrism, whether ethnocentric, geocentric, or heliocentric; it is regorging received ideas without critical *detachment*).

At this point Piaget's theory overlaps, it seems to me, with Bernstein's theory of restricted and elaborated codes. This theory, I hasten to say, is intended to describe social class differences in the use of language, not developmental differences, but the restricted code of the lower class and the elaborated code of the middle class constitute a dimension remarkably parallel to general growth irrespective of class. Speaking of the middle class, Bernstein says, ". . . speech becomes an object of special perceptual activity . . . The speaker is able to make highly individual selections and permutations. The language facilitates the verbal elaboration of subjective intent, sensitivity to the implications of separateness and difference and points to the possibilities inherent in a complex conceptual hierarchy for the organization of experience." All this contrasts with the code of the lower-class speaker, which "progressively orients him to descriptive rather than analytical concepts."[6]

The code differences run along the same line as the developmental shifts we have discussed: implicit to explicit, ethnocentric to individualistic, increasing choice, increasing abstractness of conception, increasing consciousness of abstracting (speech being an object of special perceptual activity), increasing elaboration. Furthermore, valuable correlations seem to exist between Bernstein's formulations, which are currently being submitted to further investigation by other researchers, and the theories of cognitive style specialists like Jerome Kagan, Herman Witkin, and R. Gardner. Kagan has hypothesized a dimension of impulsive to reflective; Witkin, a dimension of global thinking to analytical thinking and of field-dependent perception to field-independent perception; Gardner, a dimension of leveling to sharpening (non-discriminating to discriminating).[7] Whether

[6] These quotations were culled from two articles of Bernstein, "Social Class and Linguistic Development: A Theory of Social Learning" and "Social Class, Linguistic Code, and Grammatical Elements" and quoted in an unpublished paper, "Social Class, Language and Cognitive Behavior" of a doctoral student at Harvard, Anita Rui, to whom I am indebted for the correlations between Bernstein's work and that of the cognitive style specialists referred to below.

[7] The latter two are important dimensions in Heinz Werner's theory of cognitive growth (*Comparative Psychology of Mental Development*).

from child development or not, any such research-based theories about verbal and cognitive variation are helpful in thinking about curriculum continuity. Bernstein's general hypothesis that forms of social control govern language codes leads to formulations that are especially suggestive when one considers how much the language of disadvantaged students seems to be arrested at a stage that middle-class children go easily beyond. Thus we have fourth-graders writing rings around ninth-graders because the latter's development is constrained by the forms of social controls in their environment. Since I came across Bernstein only after drafting the theory of discourse developed in this essay, I was fascinated to find such statements by him as this: ". . . a shift from narrative or description to reflection — from the simple ordering of experience to abstracting from experience — also may signal a shift from we-centered to individual experience."[8]

The primary dimension of growth seems to be a movement from the center of the self outward. Or perhaps it is more accurate to say that the self enlarges, assimilating the world to itself and accommodating itself to the world, as Piaget puts it. The detailed forms which this movement takes are various and often paradoxical. In moving outward from himself, the child becomes more himself. The teacher's art is to move with this movement, a subtle act possible only if he shifts his gaze from the subject to the learner, for the subject is in the learner.

[8] "Linguistic Codes, Hesitation Phenomena and Intelligence." *Language and Speech*, Vol. 5, Part I (January–March, 1962), 12.