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THE ACADEMIC PROGRAM:

Language and Liberal Education

Language is, without a doubt, the most momentous and at the same time the most mysterious product of the human mind. Between the clearest animal call of love or warning or anger, and a man's least, trivial word, there lies a whole day of Creation. . . . In language we have the free, accomplished use of symbolisms, the record of articulate conceptual thinking; without language there seems to be nothing like thought whatever.

SUSANNE K. LANGER
Philosophy in a New Key

IT APPEARS NATURAL, and if anything somewhat belated, to regard language as one of the most relevant special fields with which liberal education now should be concerned. Some of the reasons for this were reviewed in the first chapter, along with reasons a college should be engaged with innovation in information transfer.

Of course it is true that all colleges are already continuously involved with language and information transfer. They always have been, since Plato's founding of the Academy in 385 B.C., and long before. In this, scholars and students have been one with all men, for, as Sapir observed:

Language is an immensely ancient heritage of the human race. . . . It is doubtful if any other cultural asset of man, be it the art of drilling for fire or of chipping stone, may lay claim to a greater age. I am inclined to believe that . . . these developments, in fact, were not

strictly possible until language, the tool of signifi-
 cant expression, had itself taken shape.¹⁴³

All learning and living, in the human sense, deal with language and the exchange of information.

Hampshire College proposes to deal with language and information transfer as a major field of liberal education rather than only as a given in the general life of the institution. This field will be the concern of the School of Language Studies.

Education's concern with language, when explicit, characteristically has been limited to certain discrete fragments of the academic program in schools and colleges. Schools, more than colleges, have been preoccupied with the formal grammar of conventional "language" as human verbal communication, and with a relatively narrow view of rhetoric in prose or verse. In mathematics, with noble exceptions among the best teachers, schools and colleges have scarcely been at pains to clarify that the essence of the discipline is that it is a *language*, behind whose symbols "lie the boldest, purest, coolest abstractions mankind has ever made."¹⁴⁴ Logic has fared somewhat better, in the better colleges if not in the schools. Logic usually finds a small home in the collegiate department of Philosophy, and leads at least some students into examining questions of clarity, validity, fallacy, inference, and analysis. A few other students are led into symbolic logic enough to gain a first acquaintance with formal deductive systems, including the propositional calculus, the first order calculus of functions, and some semantics. In college studies of literature language is treated mostly as rhetoric; and, where anthropology is taught, language may be handled in the run of things as an example of one way to formulate a theory of the structure of human behavior. Most collegiate catalogues in psychology refer directly to language not at all, although course work must deal with it implicitly. Questions of information transfer are assumed in courses on cognition, perception, learning, and motivation, but are not usually dealt with holistically, or as aspects of coherent heuristic systems.

These things are the case in most of undergraduate education. In graduate study at certain universities and in the work of some of the world's leading scholars, the story is quite different. Consider some examples in language for a moment; after these, it may be useful to look at the matter of information transfer once again.

1. THE LINGUISTIC REVOLUTION IN PHILOSOPHY

During the past four decades or more, what Professor White calls "a slow and silent revolution in philosophy" has gone virtually unnoticed by those outside the discipline. An earlier era of speculative metaphysics which had produced works on a grand, not infrequently inflated, scale, has given way to a modern concern with analytic philosophy. Analytic philosophers may and do differ in doctrine, but the "temper and tone of the movement is deflationary and critical; its method linguistic and logical."¹⁴⁵

This change owed much to the revolutionary implications of developments in science in the first decades of the century. At the frontiers of science, observation had become almost wholly indirect, and the sense-data upon which scientific propositions might be proposed were most often not direct observation of actual objects of inquiry but *readings* of index needles, revolving drums, sensitive plates, and other indicators.¹⁴⁶ These data were empirical enough, but they were not the actual phenomena: "what is directly observable is only a sign of 'physical fact'; it requires interpretation to yield scientific propositions." Thus Susanne Langer and others saw the problem of observation as all but eclipsed by the problem of *meaning*, by the fact that in advanced science of the 20th century the available empirical sense-data were primarily symbols whose meaning must be somehow gotten at.¹⁴⁷

Philosophical books of the 1920's and 1930's had come at the implications of the question of meaning in science with a vengeance. C. K. Ogden and I. A. Richards, Ralph Munroe Eaton, A. J. Ayer, Rudolph Carnap, Gustav Stern, Alfred North Whitehead, Ludwig Wittgenstein, and others had explored aspects of the symbolism of science. Not all, by any means, were qualified to consider the problem of scientific knowledge *as scientists*, but this deterred very few. That the edifice of human knowledge was not a vast collection of sense reports but a structure of facts that were symbols and laws that expressed their meaning, excited the whole intellectual world.

Excitement stirred younger disciples in the universities, in the realization that science (which Cassirer called, with at least a little hyperbole: "the highest attainment . . . in human culture . . . the summit and consummation of all our human activities . . . the most important subject

of a philosophy of man."¹⁴⁸) required new analytic tools to cope fully with its symbolic content. Science, with philosophy's analytic aid, might build up a symbolic universe that would help man "to understand and interpret, to articulate and organize, to synthesize and universalize his human experience."¹⁴⁹ It was a moving prospect; helping build the language of science would build the world anew.

The Bolsheviks of this part of the revolution in philosophy were the logical positivists, whose school, as Professor White reminisces:

... was still a modish philosophy in the 1930's when our young traveling fellows were carrying home the doctrine of the Vienna Circle, but time . . . rubbed off a bit of its bloom and blunted some of its thorns. The philosophy of science, sponsored by positivists when it was a philosophical pariah, is now an important philosophical discipline, and symbolic logic, that natural child of mathematics and philosophy, has become the respectable concern of a distinguished journal. . . . A good deal has happened since those days when it was worth a graduate student's academic life to be caught turning the pages of Carnap, Reichenbach, or Wittgenstein unless he was scrawling nasty remarks in the margins.¹⁵⁰

The revolution in philosophy has had many other partisan troops than those the positivists have mustered. In America and England there has been a half-century of growing emphasis on logic, on exactness and precision in statements in philosophy and a growing wariness of large-scale metaphysical pontification. Pragmatism asked that any statement be able to stand the test of practical meaning and examination of its empirical consequences. Operationalism, coming out of a physicist's thinking, had significance for language and meaning beyond science, as Nobel laureate Professor Bridgman saw it:

The essence of [operationalism] is that to know adequately the meaning of a term we must be able to describe what we do when we use it. It is my personal opinion that this way of dealing with meanings has a wide application to all our language, in so far as that language is an activity of intelligence as distinguished from a purely emotional activity.¹⁶¹

Professor Bridgman insisted on only one point: that we can always ask what the meaning of any term that we use is, and that, in answering we must satisfy *some* criterion of meaning. If we can formulate the cri-

terion explicitly, we are in a better position to judge from our other experience whether any term has the meaning we supposed. Often we will find it does not.

Bridgman found this to be the case in physics and thought it might well turn out to be true of terms of a humanistic sort as well. Few of these (e.g., justice, freedom, duty, responsibility) had been, he felt, subjected to rigorous criterion analysis. He did not at all propose discarding such concepts, but rather endowing them, through critical analysis, with a fuller potential of more exact and clear meaning than we usually give them.

Professor Bridgman also saw the grammar of a language as almost compelling certain attitudes. In English and other European languages, for example, reification (i.e., conversion from an abstract concept into a concrete thing) is virtually inescapable in discourse. One cannot say "I do" without implying "I do something," and the "something" then becomes reified. The implications that specific language structures have for cultural patterns are interesting. There are cultural languages in which it is uncongenial or very hard to form universal statements and syllogisms. "It begins to look," commented Professor Bridgman, "as though formal logic, as we know it, is an attribute of the group of Indo-European languages with certain grammatical features."¹⁶²

The excursion which this discussion has taken into linguistic dimensions of modern philosophy is so superficial and fragmentary that it would drive any working analytic philosopher up the wall. Hopefully not all the way up, because its only intention is to underline in a few broad strokes the attention philosophy today is paying to language, not only the language of science but that of the humanistic tradition. Such attention appears of great relevance to liberal education as Hampshire defines it, and argues that the matter is too important to be left to the graduate schools and the philosopher's closet alone. Hampshire will therefore bring linguistic and analytic philosophy, at least in introductory form, into the heart of undergraduate general and specialized education through its School of Language Studies.

2. THE EMERGENCE OF PSYCHOLINGUISTICS

The first chapter noted the emergence of psycholinguistics as one of

the most interesting intellectual developments of the past twenty years. This alone would not justify attention to it in a new construction of undergraduate curriculum; the "interesting intellectual developments" of the past two decades provide a richness which could not only embarrass the undergraduate program, but overwhelm it. The justification Hampshire College sees in introducing students to psycholinguistics is the same justification which supports an inclusion of analytic philosophy in the new undergraduate field of Language Studies. Both psycholinguistics and analytic philosophy are relevant to conceptual inquiry and the development of clearer understandings of man and his universe. They are intellectual tools of the first order; even though they are far from perfection, they are instrumentalities whose uses men and women should learn in liberal education. To leave an introduction to these tools to the graduate schools would be to confine things of general importance unnecessarily and undesirably.

Mrs. Langer, along with Professor Cassirer and others, distinguished between two conceptions of symbolic communication, as did Bridgman in writing of a kind of language that "is an activity of intelligence as distinguished from a purely emotional activity." Mrs. Langer assumed that one conception of symbolism leads to logic and helps meet new problems in the theory of knowledge, e.g., in the comprehension of science. The other conception she assumed was psychologic, not concerned with assisting science in the quest for certainty, but taking us in the opposite direction, towards understanding emotions, religion, fantasy, and art. Susanne Langer believed both conceptions of symbolic communication had a relevance to human response. Her work was an effort to establish a general theory of symbolic transformation in language which would reconcile these two symbolic modes:

... rather than restricting intelligence to discursive forms and relegating all other conception to some irrational realm of feeling and instinct. . . . The parent stock of both conceptual types, of verbal and nonverbal formulation, is the basic human act of symbolic transformation.¹⁵³

Defined, this "basic human act" was the brain's active transformation of experiential data into symbols which might be communicated in speech, expressed in art, or acted out in ritual. All of these, Mrs. Langer comprehended as language.

Psycholinguistics is itself a bridge among cognitive and affective views of language. Basically, it is concerned—in its presently developing form—with the overlap of linguistics and psychology, just as linguistic philosophy is concerned with the relationship between epistemology and linguistics. In both psychology and philosophy, a number of modern scholars have not been timorous about moving into connection with linguistics. The move is a modern one. It is far from a move congenial to all psychologists and philosophers, but it is certainly where a lot of the action is at present in both fields.

Little has been said here about the *linguists* themselves. Since they are now being related to both by philosophy and psychology, and will have a genuine place in Hampshire's field of Language Studies, the nature of their work is important to note.

The linguist (as distinguished from philosopher and psychologist) attempts to provide a description of a particular language. He deals with its phonology (phonetics and/or phonemics), syntax, lexicon, and, where possible, its history. He may do so as an aid to those who wish to learn a language. His studies of linguistics may be pursued as a guide to other aspects of a particular language-culture. He may study a language in these terms in order to develop an alphabet and written form for it. His linguistic work may aim at supporting the interpretation of a language's literature, or at aiding translation, or at other goals. He has been principally a technical expert in natural languages, considered from a descriptive and classificatory viewpoint. More recently, modern linguists have realized that their own field may gain significantly in sophistication by association with other disciplines concerned with knowing and communication. An overzealous independence reduces linguistics to a kind of cryptographic taxonomy of linguistic forms.¹⁵⁴ The conjoining of other disciplines and traditional linguistics becomes most crucial as problems of *meaning* are faced in natural language.

Psycholinguistics stands in relation to the understanding of social life in a fashion analogous to the relation of analytic philosophy to problems of the nature and interpretation of knowledge, scientific and otherwise. Both fields are concerned with language and communication, and interest more often than scholars in either field seem yet to realize. Both fields deal to some extent with traditional linguistics as described above. Both deal with mathematics on occasion, as well they might.

Psycholinguistics, like linguistic philosophy a bit earlier, is considered a puzzling newcomer by its own larger discipline. Psychologists most often simply take for granted the fact that language is the form of communication that above all others best supports the complex workings of our social order. For many of them, language is a basic undefined term of their science, from which to go on, without stopping for detailed analysis, to their special interests. For others, and this is very relevant to the role of Language Studies in a liberal curriculum, the *effects* of communication have been the attractive objects of study. Thus social psychology has produced research in persuasion, propaganda, content analysis, mass media, and rumor which can contribute substantially to a multi-faceted program of Language Studies.

The major contribution of psycholinguistics to undergraduate study, however, is in raising questions about the linguistic *processes* people use and depend on. Psycholinguistics is an exciting field because it is almost wholly in the question-asking stage of its development. It might be argued that this is abundant reason to keep it *out* of the undergraduate curriculum. Hampshire disagrees. There is no thought, and it would be foolish if there were, of trying to bring into undergraduate study the kind of research that Professor Miller is carrying on in psycholinguistics at Harvard's Center for Cognitive Studies. But there seems every reason to introduce interested undergraduates to psycholinguistic questions and a degree of content they can usefully work with, even as a field for concentration.

Questions and content, appropriate to undergraduate instruction in psycholinguistics, might be drawn from such parts of the field as the following: phonology, syntax, and semantics; the biological capacity for language; early grammatical speech; change in child language; the growth of transformations; the role of parental speech; the Whorfian hypothesis that man's personal experience of the world he lives in is shaped by the language he speaks; linguistic universals; paralinguistics (the function of cues, tempo, loudness, and other aspects of speech not connected with grammar); kinesics (communicative body motions, gestures, and the like, that add a visible dimension); linguistic reflections of social structure; and the heterogeneous experimental methodology (not methodolatry!) of a varied and lively field.

3. INFORMATION TRANSFER AND THE TECHNOLOGY OF LANGUAGE

The first chapter of this paper argued that revolutionary technological and conceptual developments in information transfer cannot intelligently be ignored by any part of higher education, including collegiate instruction. The society as a whole cannot afford to ignore or mis-use such innovations. The fact that responsible and enlightened educational leadership in America *will* respond to the immense new technological opportunities for the diffusion of knowledge and culture was dramatically illustrated by an action of the Ford Foundation on August 1, 1966.¹⁴⁸

On that date, President McGeorge Bundy of the Foundation submitted a statement to the Federal Communications Commission presenting a possible model for the use of synchronous space satellites in a non-profit system which would guarantee the nation adequate access to non-commercial and instructional television, as well as to commercial television. The model was not presented as a formal proposal. But its technical feasibility, legal basis, economic validity, and television programming practicality had been tested in highly expert studies. The model suggested, in a brilliantly ingenious combination of social engineering and the bold use of satellite technology, a new broadcasting plan which would so assist commercial television that the latter would be impelled by self-interest to fund educational television at a sufficient and stable level. Mr. Bundy commented that

satellite communications may permit a revolution both in the technology and in the economics of television. Intensive exploratory studies have convinced us that . . . these revolutionary possibilities offer the promise of building a cost-free highway system for multiplied regional and national non-commercial services—and also of providing a large part of the new funds which are desperately needed for non-commercial programming at every level.¹⁵⁰

The Ford Foundation's model is now under close study by the FCC and other groups. It is opposed by Comsat and AT&T, and apparently favored by the three commercial networks and National Educational Television (NET).

The Ford brief on satellite technology and its social uses demonstrates that creative educational leadership *can* intervene to invent striking new ways to exploit the remarkable communications technology now available

and still to come. The huge scale of the Ford Foundation proposal should not obscure the clear implication that its fundamental style of bold imaginativeness has for the approach education generally should take to newer technologies. The point, for Hampshire College, lies in a matter of attitude and understanding of necessities. The College proposes, as the second chapter of this paper indicated, to be bold in exploring the potential educational and economic advantages of new technologies for information transfer. The College intends not only to use new technologies where it is sensible and economically possible to do so, but to introduce its students to their meaning and use as a part of liberal education in the present age. In the process, Hampshire College will explore possible relationships that could be developed with industry, government, and private foundations.

In the following chapter, some of the features of the College's design for incorporating INTRAN (a modified acronym for information transfer) as an integral component of the institution are presented. The short-hand name may easily suggest an erroneous conception; e.g., *intransigent* as in devotion to gimmickry. Hopefully, it will carry more of the flavor of *in transitu*, since through INTRAN, a function physically and conceptually located in the School of Language Studies, the College will try to be "on the way," in terms of understanding and exploiting technology that will help its program. The spirit of INTRAN at Hampshire will be experimental and innovative; from the beginning, however, it will be a generative point for systematic service to faculty and students. The College will not indulge itself in a kind of science-fiction fantasy at the "Gee whiz!" level. But it will deliberately develop its technological information-transfer capability as far and as fast as economic feasibility and the criteria of liberal education established in this paper will allow.

Among other specific things, this means that Hampshire College will be concerned through the instrumentality of its INTRAN Center with

- a. *Open-Circuit Television.* The College has been in consultation with Mr. Hartford Gunn, general manager of WGBH, Channel 2, for the past year. Mr. Gunn and his staff operate what in many ways is the best educational television station in the United States. The station is operated in connection with the Lowell Institute Cooperative Broadcasting Council, a group of fourteen leading educational and cultural institutions, including most recently in its association

Yale University.* Hampshire will continue to explore with Mr. Gunn the possible uses open-circuit television may have in its program. The new Ford ETV proposal may greatly increase the availability and repertoire of ETV for college instructional purposes.

- b. *Open-Circuit Radio.* Hampshire is aware of the contribution already being made to the Valley by WFCR, the FM station operated under the joint auspices of the Four Colleges. This station originates some of its own programs, but it makes heavy use of taped material, of high quality, from WGBH-FM in Boston. The College hopes to have an active relationship with WFCR and will investigate ways it may contribute to this shared enterprise.

- c. *Closed-Circuit Television.* This system involves coaxial cable interconnection of points on a single campus, or of points on several campuses. The coaxial cable can be capable of carrying a great deal more than television signals. At Harvard, as the first chapter noted, a \$100,000 network has been installed this year, connecting forty different locations. Among these are the Widener and Lamont Libraries, the Littauer Center, the Computing Center, and the Loeb Drama Center. The Harvard installation is what is called "a wide-band information transfer system." This means that the same cables that carry television signals can also carry pulse data for computer operation and transmittal. The cables have been run underground, in the same tunnels that distribute steam for heating Harvard buildings. The main production studio and technical center for the Harvard hook-up is WGBH, whose facilities are on Harvard land rented for a dollar per year.

The possibilities for present use at Harvard are simple; they are principally the piping of conferences, demonstrations, lectures, and ceremonies from one part of the campus to other parts. But future possibilities—not far off—are great and varied. President Pusey foresees that the development of such local systems may open the way "for extensive interuniversity co-operation"; such a vision provided the main reason for Yale's recent decision to join the Lowell Institute Broadcasting Council.¹⁶⁷ Uses of the Harvard closed-circuit cables for computer-access, library-access, and many other purposes in the relatively near future are foreseen. As these things occur,

* Present members of the Council are the Lowell Institute, Boston College, Boston Symphony Orchestra, Boston University, Brandeis, Harvard, MIT, Museum of Fine Arts, Museum of Science, New England Conservatory of Music, Northeastern, Simmons College, Tufts, and Yale.

it will be possible for one wired campus to hook-in to another as needed, thus strengthening the total resources of both institutions. Hampshire will make provision for coaxial cable interconnection on campus from the beginning, including in consideration the possibility of interconnection direct to student carrels in residential rooms.

The basic purposes that wide-band coaxial cable interconnection could serve are evident. Fundamentally, it should provide students with greater access to materials and experiences; it should enable teachers to demonstrate and display material to large groups with films or tapes that communicate sound and motion; it should make the educational process more flexible by making access to material easier and by making it duplicable or repeatable on command; and it should relieve teaching of repetitive, time-consuming tasks that are better and more cheaply done by electronic-mechanical means.

The best known, most widely applied tool of information transfer in undergraduate education is the language laboratory. The designs are very similar everywhere: a large room filled with student stations, usually as semi-carrels built into large table tops. The student has earphones and a microphone. A central source, with greater or lesser flexibility, transmits the lesson to the headset via magnetic tape. Students can respond and replay and hear their responses. In some places the language laboratory is also used as a playback device for music courses. The next logical step, as Hampshire sees it, is to equip each student's room with a language laboratory station and make the languages available to him whenever he chooses to study. Educationally, such access could mean that a language would be learned wholly without "courses," and that competence would be measured by examination, satisfactory completion of which is a prerequisite for graduation, as in the Hampshire plan. Further, it is technically possible to build into the student's room a more versatile and flexible unit consisting of a tape recorder, microphone, headset, television screen and oscilloscope, all tied to a central resource center, making available to the student on demand tapes (video, audio or both) of lectures, films, recordings of plays, music, readings, language materials and the capability of doing some "laboratory" experimentation. IBM, for example, has developed course programs in biochemistry and other disciplines for use through teletypewriter connection to a central computer. The IBM programs of computer-assisted instruction (CAI) can be de-

veloped and modified by teachers themselves; to make this possible without being a computer expert, IBM has developed a simple "Course-writer" language which a teacher can readily learn and use in translating what he wants taught into material the computer can use. Hampshire is already in close touch with IBM on these and other developments, and plans to remain so.

Another example of a tool of information transfer being used increasingly is the short moving picture. The problems ordinarily associated with showing films in classrooms are well-known: broken film, burned out bulbs, ill-adjusted machines, and other burdens. Now, through closed-circuit television, a film clip (from archive film for a history lecture or a carefully prepared, expertly done laboratory demonstration, as examples) can be previewed in the teacher's office and can be signalled for during the lecture to be projected from a resources center on a reflecting screen or a set of television monitors. Or, without using television at all, it is possible to show short closed-loop single concept films on automatic cartridge-loading projectors now available.

The full utilization for any one college of information transfer systems depends on the creation and accumulation of files of suitable materials in central facilities and the creation of distribution networks to bring resources and users (users usually have resources) together. Eventually, for instance, great distribution centers may be built in several spots in the United States, as the current Ford Foundation model suggests, with networks among the centers and subnetworks interrelating the libraries, universities, colleges, museums, and other resources and users with each other and, if necessary, with any other source or user in the country.

There is little science-fiction in any of this. Great institutions, great foundations, and great corporations would not be moving towards these kinds of information-transfer capabilities if there were. To get a realistic but eye-opening view of what is coming, one may read dispassionate and informed discussions such as those presented in the *IBM Research Reports* (e.g., the January, 1966, issue on "Computer Assisted Instruction"); in *The Revolution in the Schools*, edited by Ronald Gross and Judith Murphy;¹⁵⁸ and in William Clark Trow's *Teacher and Technology*.¹⁵⁹ Or to be very local, one may take a second look at *The Amherst Record* of August 11, 1966. The lead article on page one concerns the

installation of a Centrex telephone system by the New England Telephone and Telegraph Company designed to serve all University of Massachusetts students directly in their rooms, and all Amherst College faculty and staff. In passing, the local telephone executive comments, somewhat wistfully it seems, that "these room telephones offer potential for sophisticated learning techniques such as access to language lab tape banks, registering by phone, and, eventually, access to computers."

4. THE SCHOOL OF LANGUAGE STUDIES AT HAMPSHIRE COLLEGE

Considerations of the kind touched upon in the foregoing discussion and in the first chapter have led Hampshire and its advisers to decide that one of the four major fields of liberal education in the College will be that of Language. The School of Language Studies will require much further study and discussion in its development than can be accomplished in the present paper. But some of its main lines are clear. Language will be regarded as a comprehensive rubric including aspects of linguistic philosophy, psycholinguistics, information transfer, the history and nature of natural languages, and studies in foreign languages as described in the fourth chapter.

Hampshire feels that Daniel Bell was too tentative but on the right track when he said of general education at Columbia that:

The question of 'language' is so important that the question may be raised whether or not in coming years that a course in *language*—dealing with the nature of symbolism, communication theory, psycholinguistics (and computer languages), structural linguistics—should be a basic course, required of *all* students, as the foundation for many different lines of study. The striking advances in linguistics itself—raise this as an important question.¹⁶⁰

Hampshire College was challenged to a bolder line in regard to Language by the 1966 Report of the Educational Advisory Committee. One of the most original and persuasive recommendations in this thoughtful document was that the College should establish a fourth division, dealing with Language:

It should be the function of the division of languages to promote an understanding of the variety of languages that have been developed as instruments of human communication and as intellectual and artistic tools. . . .

It is understandable and inevitable . . . that the great majority of Americans have not even considered it necessary or worth the time it takes to know anything much about the origins, background, history and development, the multiplexity as well as the paradoxical constancy and mutability of their own language and thus the fascination of it, not to mention its importance and wide-ranging influence. Such a rich subject need not be left to scholars who communicate only with other scholars, nor has it been entirely. But the study of it needs to become more widespread. It would in fact seem wise to persuade our whole educational system to be permeated by a knowledge of the nature of language, our own language and concomitantly the languages of other peoples.

Such a radical innovation will, of course, not be introduced, much less elaborated on, in one year or even one decade within our total educational fabric. But it could easily become part of the curricular scheme of a new educational venture like Hampshire College, which in its own way will be educating not only future community and regional, but also national and perhaps even world leaders. It would seem evident, then, that Hampshire College students will not be able to afford to neglect the story and study of language and the diverse functions of language, including primarily language as a means of multiform communication—language, therefore, as a potential power to keep or to liberate men and minds from stubborn, stifling provincialism that can lead, at best, to sterile or, at worst, to explosive, even tragic encounters between people and nations.¹⁶¹

The 1966 Committee considered that, in addition to their being connected with one of the other three fields, certain faculty members would serve in Language Studies. The Committee foresaw a need for a Languages faculty including philosophers, mathematicians, linguists, computer theorists, and others. Courses suggested by the Committee were thought of in an earlier framework of "freshman seminars," non-major courses, and courses for majors, as follows:

Freshman Seminars

- Game theory
- Linear graph theory
- Philosophical analysis
- Geometric inequalities
- Irrational numbers
- Logic in use

Theories concerning a hypothetical language
 Language as word, sound, or sight; *and* as symbol
 Grammar and culture
 Grimm's Law of Consonant Shifts and other significant linguistics laws
 Assumptions concerning the place of origin of the Indo-European family of languages
 The Germanic Language groups, including English

Courses for Non-Majors

Finite mathematics
 Computer linguistics
 History of languages
 Semantics
 Foundations of mathematics
 Linguistics
 Language and psychology

Courses for Majors

Symbolic logic I
 Symbolic logic II
 Metalogic
 Linguistic analysis: Metaphysics
 Linguistic analysis: Epistemology
 Linguistic analysis: Value theory
 The syntax of language
 Topology
 Modern algebra
 Number theory
 Geometry
 Advanced calculus
 Statistics
 Complex variables
 Computer theory

The recommendations of the Committee will be discussed further during the whole period in which the School of Language Studies takes form. The essential point will not be lost: Language, in this broad sense, will be a new major undergraduate field at Hampshire College.

Further, the School will signify the College's strong interest not only in knowledge about communication, but in improving information trans-

fer capabilities at the collegiate level. Hampshire College is far from being committed to any idle notion that gadgetry will do the job in liberal education. But the College is not going to try either to repeal the 20th century or revive the 12th. Its eye is on the human uses of technology in education of the kind this paper describes—with a strong orientation toward maintaining high quality, developing individual capacity for self-education throughout life, and economizing sensibly at the institutional level where instruction occurs. Hampshire College will use the new technology of education whenever it will serve these things. Assignment of responsibility for continuous awareness and evaluation of developments in information transfer is made directly to the School of Language Studies and the INTRAN Center within it (see next chapter). The College will design its physical facilities and review them continuously in order to achieve the greatest possible flexibility for the installation or adaptation of genuine technological improvements in education.

In doing these things, Hampshire will serve its own students more fully. The College hopes that the School of Language Studies will be seen by students of the other institutions of the Valley as offering them an opportunity to share in an exciting new field of undergraduate study.