

■ On Liberal Education

From the very beginning, if it is possible to speak of a beginning in this case, liberal education meant the education of free men. From the very beginning one detects an ambiguity in the meaning of "free men." In ancient times free men are contrasted with slaves and, moreover, with men who, though not slaves, are engaged in menial labor and have to do that to cope with the necessities of life. To bring up children to the level of free men means to bring them up for the enjoyment and duties of a life which, secure in its subsistence, is attuned to the pleasures of bodily, sensual and intellectual exercises and to the challenges of military and political activity. Such life tends, however, to move along traditional lines, be it in games, in polite conversation or in the turmoil of public affairs. Its freedom is endangered by the dominance of accepted opinions, the "idols of the market-place," in Baconian terminology. However "free" the free man may be, he has thus still to free himself from the shackles of conventional views which pass for the truth of things. He has to cultivate pursuits in which the truth of things is truly made an attainable goal. These pursuits constitute the arts of

freedom, the "liberal arts." Liberal education, then, consists in the acquisition of the liberal arts. And again from the very beginning there are genuine difficulties in the understanding and the practice of these arts. These difficulties relate (1) to their content and (2) to their preservation through generations of men. Let me first speak of the difficulties which relate to their content.

The quaternity of the original liberal arts—Arithmetic, Geometry, Music, Astronomy—is characterized by the immensely fascinating fact that their content can be *understood* and therefore *learned* and therefore *known*. The Greek word that embodies these three meanings is *mathēma*, the learnable. Thus the traditional liberal arts are originally "mathematical," that is, understandable, learnable, and knowable. Cassiodorus calls therefore such a liberal mathematical art quite suitably an *ars doctrinalis*. We should not forget that antiquity had, unofficially, as it were, a fifth liberal preoccupation—the inquiry into nature (*hē peri phuseōs historia*), natural history, as it was called later. There was something to be "learned" here, too.

And we know that Grammar, Rhetoric and Logic were added to the list, the emphasis shifting gradually from the quaternity of the mathematical arts to these trivial supplements. Why this shift? The answer is: The ultimate foundations of the original four or, if you please, five liberal arts remained doubtful, becoming the concern of a deeper investigation, the subject matter of philosophical reflection. The pursuit of truth in these arts, through which the freedom of man was meant to find its integrity, seemed to become truncated and encroached upon by definitions and hypotheses which lacked certainty and persuasiveness and put limits to our understanding. This could not be said of the trivial arts. It can be said, however, that integral knowledge was not achievable in any of the seven arts. That is why it is proper that they preserved the name of "arts" (*technai*) in contradistinction to "knowledges" (*scientiae, epistēmai*). Philosophical wisdom was meant to supply what they were lacking. And, whatever else may be said about liberal education, we are justified in setting down as a first rule that liberal education requires—for the learner as well as for the teacher—the practice of philosophical reflection and the awareness of its guiding role.

Let me turn to the difficulties inherent in the preservation of the liberal arts through generations of men. Words used in common speech do not always preserve their commonly accepted meaning. This commonly accepted meaning itself ranges, more often than not, over a series of connected shadings and connotations. In the perspective of a detached inquiry the meaning of a word usually loses its "natural" ambiguity, becomes more fixed, gains a definite significance determined by the scope of the attempted and sustained investigation, which investigation may lead to the establishment of a science, an art, a *technē*. The inquirer then turns, of necessity, into an "expert" who is able to pass his knowledge on to others, who is able, in other words, to become a teacher. It is thus that words do indeed become "technical" and transcend the habitual and familiar. Special terms, moreover, may be coined to satisfy more fully the understanding gained in the investigation. And yet, the "technical" use of words tends, in turn, to become accepted and to win a familiarity of its own. The passing on of sciences, arts, and skills, especially of intellectual ones, cannot quite avoid the danger of blurring the original understanding on which those disciplines are based. The terms which embody that understanding, the indispensable terms of the art, of the *technē* in question, the "technical" terms, acquire gradually a life of their own, severed from the original insights. In the process of perpetuating the art those insights tend to approach the status of sediments, that is, of something understood derivatively and in a matter-of-course fashion. The technical terms begin to form a technical jargon spreading a thick veil over the primordial sources. Again, whatever else may be said about liberal education, we are justified in setting down as a second rule that liberal education has to counteract this process of sedimentation and to find the proper ways of doing this.

The background of what I have been saying so far is classical liberal education. But in the last four hundred years the background of the educational scene has changed tremendously. The pertinence of the two rules I mentioned has increased accordingly. Let us take a glimpse at this change.

Music has almost ceased to be a liberal art. Arithmetic, geometry, astronomy, and natural history have merged and

expanded into a towering, multi-storied edifice called mathematical physics to which are attached a number of ancillary disciplines, the mightiest among them named biology. Analytic mathematics has formed an entirely new New Atlantis. The arts of grammar and rhetoric have transformed themselves into the preoccupation with diverse languages, and especially with the classical ones, which preoccupation is called philology, and embrace quite disparate subjects as, for example, classical philosophical texts, poetic works, literature in general, and the modern novel in particular. The art of logic has become, on the one hand, an adjunct of mathematics and has usurped, on the other hand, the place of the uppermost level of all knowledge. Philosophy is taught as a special discipline by professors of philosophy and is, more often than not, identified with mathematical logic. I omit mentioning a plethora of other sciences cultivated in our universities. All these disciplines are supposed to be classifiable into two vast domains, that of science proper and that of the humanities. The subject matter of liberal education is thought to belong almost exclusively to the latter domain, the domain of humanities, which includes — we ought to note — history and all kinds of historical disciplines.

The multiversity of our universities is likely to increase in the future rather than to decrease. Will a genuine liberal education be able to remain a desirable goal? Will the idea of a "free man" persist? This will depend, I submit, on whether the two rules I have referred to will be observed in the process of learning. It is safe to say that in any *good* course of study — whatever the subject matter — these two rules find, to a greater or lesser degree, their application: the learner is made to reflect on the assumptions underlying the way the subject matter is presented to him and the technical notions governing the presentation are shown to arise from fundamental insights freed from their status of sedimentation. I would not venture to state how often or how rarely this actually occurs. A little later I shall have to come back to this question again. What is to be aimed at, at any rate, is the setting up of a program of study in which those two rules can be consciously and persistently applied at all times.

Let me talk, then, about such a program. It has first of all to select the material which would compel the learner to reflect

and to get rid of the sediments in his thinking so as to enable him to reach the level of intellectual clarity. This material is available in the great documents of human seeing, hearing, imagining, and understanding, that is to say, in the Old Testament, in the works of Homer, Aeschylus, Sophocles, Euripides, Plato, Aristotle, in the New Testament, in Augustine, Thomas Aquinas, Dante, Francis Bacon, Shakespeare, Galileo, Descartes, Newton, Locke, Hume, Rousseau, Kant, Hegel, Darwin, the great novelists of the nineteenth century, Nietzsche, Freud, Whitehead and many others. The task is to read these works, which contain our intellectual heritage — which, in turn, is permeated by vagueness and sedimentation — in such a way as to re-awaken the insights in which they are rooted and to reflect on these insights and their ultimate assumptions. This task is tremendous; at best, only a beginning can be made.

Those works present human speech, bereft of its spontaneity, but composed artfully and purposefully. To understand the content, the art, and the purpose of this speaking, help is required. The signifying function of words and the ramifications of this function are at stake. It is necessary, therefore, secondly, to arrange for a concentrated study of the interconnection of words, of their inflections and concatenations, of the grammatical rules in which they are bound and of the flexibility they still may preserve. This study should bypass the familiarity of the mother tongue and its sedimented use. Two foreign languages, preferably an ancient one and a modern one, should be chosen, the scrutiny of which may provide the learner with an understanding of what grammar entails. And it is in translating that the learner should be able to recognize the similar, yet different structure of his mother tongue. Translation, moreover, should acquaint him with the various rhetorical devices language uses to articulate thought by means of combinations and stratifications of sentences, by means of figures of speech, metaphors and idiomatic expressions. To understand the embodiment of thought in speech — this is the aim of such a study of language.

What characterizes words is the union of their sound with their functioning as signs. This union can be broken: both sound and sign may become autonomous. The naked signs, turned later on into symbols, constitute the skeletal language of mathematics;

similarly, the naked sounds become the tonal language of music. Liberal education cannot dispense with the task of focusing its attention on both.

It is necessary, therefore, thirdly, to study mathematics, always bearing in mind that this studying has to be reflective and cannot be satisfied with a sedimented understanding of mathematical relationships. How to begin here is an open question. But it is not questionable that, whatever the beginning, the mathematical considerations have to be tied to the inquiry into nature, be it to the observation of celestial phenomena or to the investigation of events and conditions on this our earth. Everything around us, as we know, all motion and change, hangs on number, weight, and measure. After a while, the shores of the new New Atlantis of pure mathematics may be within our reach.

And fourthly, music too, the region of sounds, either tied to words or received in their purity, should be opened to our understanding though vying with our pleasure. I cannot omit mentioning in this connection the mysterious link between musical sounds and sequences of numerical ratios. Music's formalism in pitch, rhythm and meter, seems to be an ultimate formal reflection of the rhetoric inherent in human speech.

I have been speaking of modern pure mathematics as a new New Atlantis, using a Baconian phrase. Now, Bacon's *New Atlantis*, as we know, pictures this island not as a mathematical one, comparable to Swift's Laputa, but as treasuring a vast laboratory in which man "interprets" Nature in extracting her secrets from her and subduing her to his will. Thus Bacon, though neglecting the tie between mathematics and the inquiry into nature, anticipated the work of the centuries that followed him. We have indeed transformed our habitat from a place of nurture into a place of experimentation. Our relation to Nature is quite Baconian. Can liberal education ignore this tremendous change? Has not the Baconian enterprise added a new dimension of freedom to man's life — the freedom to control the ways of Nature and to put them to our use? Yes, it has done that, but it has also brought us face to face with forces which we seem unable to control. Liberal education has, therefore, fifthly, to apply itself to experimentation, not to increase the storehouse of our powers, not to reach any new and unexpected results, but to gain insight

into the condition of possibility of such undertakings so as to understand how they come about and what caution they demand. The ways of the inquiry into nature proper to physics and to biology have to be scrutinized and marvelled at.

This program of liberal learning I have been trying to sketch is the program of St. John's College. Needless to say, we do not live up to our own goals. But I am not here to speak of our faults and defects. What I have to speak about, briefly and in a most elementary way, is what both learning and teaching mean and do not mean. Learning and teaching are mysterious processes. To understand them fully would mean to discover the secret of our lives. For we are, perhaps above anything else, learning and teaching animals. I hope we all agree that teaching does not consist in telling and insisting, nor learning in listening and repeating. The image of the learner's soul is not an empty pitcher into which the teacher pours the fluid of knowledge. This picture of teaching and learning, by the way, however wrong, is ineradicable.

There are perhaps two ways of describing teaching and learning in an appropriate manner. The one is that of begetting and conceiving. The word of the teacher acts as the form which in-forms the material of the learner's soul, in-forms the capability this soul has, and trans-forms it into a knowing soul. This is, on the whole, the Aristotelian view. The process of learning and teaching is a generative one, and a great deal depends not only on the activity and effectiveness of the teacher's word but also on the receptivity and potentiality of the learner's soul. The other way of describing teaching and learning is that of eliciting answers and gaining insight from within. Through questioning and arguing the teacher compels the learner to pull out of himself, as it were, something slumbering in him at all times. This is, on the whole, the Socratic and Platonic view. Here again a great deal depends on the quality of the teacher's questions and on the quality of the learner's soul. But just as questioning has its place in the Aristotelian scheme, begetting is an important element in Socrates' practice. Learning from books, by images, through associations, and whatever other ways of learning may be mentioned, falls easily into the patterns of those two fundamental views. I doubt whether modern psychologies of learning have added anything to them.

It is perhaps not unimportant to note that the role of the teacher who engages in questioning cannot simply be identified with the role of the "midwife" that the teacher has occasionally to assume. This "midwife" image, mentioned in only *one* of the Platonic dialogues, in the *Theaetetus* and nowhere else, is a tricky one. The midwife, the *maia*, delivers women of children that have been fathered, and the teacher is a "midwife" only when he delivers the learner's soul of opinions, mostly wrong ones, "fathered" by others. Truth, according to Plato, has no father.

At any rate, a program of liberal education implies teaching both as begetting and eliciting, in fact, more the latter than the former. The great vehicle of learning is discussion in which begetting, questioning, refuting, and again questioning take place. This is not to say that all drudgery, all routine work is eliminated. The learning process requires that too. But it is not the pivot on which failure or success depends. How to gauge whether learning has actually occurred is extremely difficult. For what has been formed in the learner's soul or what insights have been re-awakened in him depends on factors often totally unknown to the teacher. Both learner and teacher are members of a learning community. Inasmuch as this learning community is an institutionalized one, it is bound to fall short of its goal. All the institution can do is to set the *conditions* for learning. This in itself is an immense task. Learning under these conditions does not consist in "mastering" a body of knowledge. The conditions merely provide the horizon in which fruitful learning can take place. The conditions determine the existence of a "school."