

Aldous Huxley (1894–1963)
***The Human Situation*, lectures at Santa Barbara, 1959.**

Lecture 1 – *Integrated Education*, 9th of February, 1959¹

Mr. Vice-Chancellor, Ladies and Gentlemen. I confess, I feel a considerable apprehension at finding myself in this novel situation of being a professor. However, I'm slightly comforted by the qualifications of this title, which is "Professor-at-Large", which is a nice old-fashioned phrase which used to above all be applied to escaped lunatics.

One used to be told upon walking near an asylum—"Be Careful: There are Lunatics at Large"

And another thing which comforts me is this; that although as we all know, a little learning is a dangerous thing, we can also say that a great deal of learning which now especially means a great deal of highly specialized learning—a great deal of learning is also a dangerous thing and maybe sometimes even more dangerous than a little learning.

Indeed, this has become one of the major problems of higher education now, is how to reconcile the claims of much learning, which is essentially specialized learning, with the claims of little learning, which is the wider but shallower approach to human problems in general.

And this of course is by no means a modern problem. I can quote a rather interesting example in this field from the case of my grandfather T. H. Huxley (1825–1895), who was a man who was never happy unless he was doing about three or four whole-time jobs at once.

And among his whole-time jobs in the 1870s was the creation of modern English education. He worked a great deal on the elementary education and secondary education in London.

And he did a great deal too to turn London University into a modern university, that is to say, into a university with a high degree of specialization in its various fields. But the interesting thing is that before he died—a few years before he died in the early nineties, he was already deeply preoccupied with the problem of excessive specialization. About three years before he died, he actually worked out a plan for trying to coordinate various specialized departments in the University of London so as to create some kind of integrated education.

Well, I need hardly say the plan was never put into effect, and the problem of integrated education remains exactly as it was; it's a problem which concerns everybody in the field. And a number of attempts have been made of course to solve it. And most of the attempts don't seem to be entirely satisfactory. There is the attempt of simply adding pieces of humanistic information to the specialized scientific information.

There is the attempt to coordinate science and the humanities by means of a historical approach to the subject, which has certain merits but I don't think is completely satisfactory. And there is the rather closely related attempt to use what is called "the hundred great books" to do the same thing. Again, I don't think it's altogether satisfactory.

My own feeling is that an ideal integrated education calls for an approach to the subject

1 This and the following 17 lectures were given at the University of California, Santa Barbara (UCSB) in the spring and fall semester of 1959 titled *The Human Situation*. Huxley was the first person to have received an honorary doctorate degree from UCSB. For further details on the organizing process around these lectures, see lectures IX – *Art, Artist and Society* and XVIII – *The Natural History of Visions*. Thanks to Yoni Osteen and Steve Mendoza for making this transcript available. Please contact the editor, Hans Frederik Ross Nielsen, for any suggestions, corrections or improvements: hf1985@gmail.com.

in terms of the fundamental human problems. If we start with these fundamental human problems—problems, for example, such as “who are we?”, “what is the nature of human nature?”, “how should we be related to the planet on which we live?”, “how are we to live together satisfactorily?”, “how are we to develop our individual potentialities?”, “what is the relationship between nature and nurture?” – if we start with these problems and make these central we can obviously bring together information from a great number of, at present, completely isolated disciplines. And my own feeling is that it probably is only in this way that one can create a thoroughly integrated form of education.

Meanwhile, however, this integrated education doesn't really exist, and here I think may be found the reason why a person like myself, who has only a little learning—who may indeed has what may be called a kind of encyclopedic ignorance in many fields—why he may be of use in an institution of higher specialized learning like this.

A man of letters, can I think, perform a valuable function in the world at present by bringing together a great many subjects, by showing the relationships between them. It's a question of building bridges.

Interestingly, the word bridge builder, or pontifex, exists in Latin. It was the name of the college priests in Rome and the head of college was called Pontifex Maximus. Actually, the etymology of pontifex is probably a false etymology. The almost certainly original meaning of the word was not pontifex, but “punftifex”, which in an old pre-Latin, the Oscan language, means the maker of propitiatory sacrifices. But then the Romans translated this into their own language as Pontifex, the maker of bridges.

And this is actually a very interesting and satisfactory word, because it's a word which in the religious context means that you make a bridge between earth and heaven, between the material and the spiritual, the human and the divine. And the whole idea of the pontifex, the bridge builder, I think is a very profitable one, one which we can make use of and meditate over and chew upon in a very useful way.

Now the function of the literary man, it seems to me, in the present context, is precisely to be a bridge builder – to make bridges between art and science, between observed—objectively observed fact and immediate experience, between morals and scientific appraisals.

There are all kinds of bridges to be built. And this is precisely what I shall try to do in the course of these lectures.

Now there are great problems facing the man of letters who tries to build bridges. It's interesting to go back into the history of literature and to see that this problem was considered with—quite carefully by <William> Wordsworth (1770–1850) at the end of the 18th century in the preface to the *Lyrical Ballads*². Wordsworth has a very interesting passage where he says that the remotest discoveries of the chemist, the botanist, the mineralogist will become subject matter for the poet no less suitable than any other subject matter at such time, on condition that these subjects become interesting to human beings at large and can be considered in the context of what they do for human beings as enjoying and suffering creatures.

Well this of course is profoundly true. If the facts of science are to become incorporated into art, they must in some way become something more than mere facts and scientific theories must become something more than mere abstractions and generalizations. They must in some way come to be facts of direct experience, facts which mean something, facts which have an emotional content.

And here we are up against really a kind of vicious circle, for it's quite clear that on the

2 A collection of poems by William Wordsworth and Samuel Taylor Coleridge, first published in 1798.

one hand, the facts of science cannot become suitable material for poetry and literary art in general until they have become emotionally tinged and involve us as persons. On the other hand, it is also clear that it's very unlikely that they will become so emotionally tinged and involved in the general feeling tone of humanity, until they have been expressed in artistic form because the function of the artist is to make available for the rest of the community large areas of value and meaning.

People become aware of things. You can say in a sense that the emotional and value-pattern of people's lives is largely created by the artist who finds the suitable expression and suitable form of words for making what was previously either unknown or else uninteresting to people known and interesting.

So that is as I say, we have this curious—we're on the horns of this dilemma. We need to have the facts of science become tinged with emotion before they become the material of art, but we need to have them already transformed into the material of art before they can become fully valuable for us in emotional terms.

And I suppose that the only way out of the vicious circle will be through the providential arrival at some time or another of some vast genius who will break through and somehow create for us what we don't already have—the necessary verbal apparatus through which the facts and theories of science can become the fitting material of art.

Naturally we can't foresee how and when such a person will arise, but "the wind bloweth where it listeth"³ and possibly this mysterious bridge builder, this Pontifex Maximus, may someday come into existence. For all we know, he may be or she may be on this campus at this present time. I hope he or she is.

But for the time being, I am certainly not a Pontifex Maximus, but even a Pontifex Minimus can do something for the time being.

And as I say, the question really is one of finding a suitable vocabulary in which to deal with these problems. At present, we have a large variety of vocabularies. We have the vocabulary of ordinary speech, we have the vocabulary of literature, we have the <vocabulary> of prose literature we have the heightened vocabulary of poetry, and we have the abstract vocabulary of scientific theory, and the absolutely catastrophic vocabulary of textbooks. Which I must say as a man of letters, I find extremely painful. And no wonder that—given such a vocabulary—that these scientific facts and theories are not held to be relevant to us as Wordsworth says as suffering and enjoying beings, although perhaps as suffering beings, yes. But certainly not as enjoying beings.

And one cannot, of course, overstress this necessity of vocabulary, of words.

There is a very interesting and instructive story which concerns the great French painter <Edgar> Degas (1834–1917) and the equally great French poet <Stéphane> Mallarmé (1842–1898). Degas in his spare time used to write verses, and one day he met Mallarmé and said to Mallarmé "It's a terrible thing Mallarmé—I don't know what happens. I have such wonderful ideas, but when I write them down the verse is very bad; it isn't poetry." And Mallarmé answered "My dear Degas, poetry is not made with ideas, it is made with words."

And this is the profoundly important fact—it is this genius for handling words, of putting the ideas into words which somehow an x-ray power of penetration, which marks of course the great man of letters.

And this is, as I say, is our major problem at the moment—to find this form of words

3 John 3:8 (KJV)

which must express this coming together of the scientific fact and the scientific theory with our direct experience.

In a certain sense, we can say the whole program which we need to fulfill if we are to have an integrated viewpoint, in a sense it is summed up in an extraordinary phrase in Shakespeare, where Hotspur says:

*“But thoughts the slave of life, and life’s time’s fool,
And time, that makes survey of all the rest,
Must have a stop.”*⁴

This is one of those fantastic things one finds in Shakespeare where in a line and a half he throws out an entire philosophy and then passes on to something else. But here one sees quite clearly what the basic problem is. “Thoughts the slave of life”—that we cannot think abstractly without being involved as physiological beings, as members of this living community on the planet. “And Life’s, Time’s Fool”—that duration, the passage of time, tends to undermine everything and produce constant change. And yet there is this side of eternity, this religious, spiritual side—“and time that takes survey of all the rest, must have a stop”—must have a stop in the timeless and eternal world.

And these are the three worlds—the world of abstractions and concepts, the world of immediate experience (<i.e.> the world of objective observation), and the world of spiritual insight, which require in any integrated point of view to be brought together.

Well, needless to say, this is a pretty difficult proposition. And we have, as I say, to find this language. For example, let us take a specific case.

We—at present time, how can we attempt to describe, for example, a mystical experience? What we need is some kind of language—which would have to be created for us by a major poet, a pontifex maximus—some kind of language which would permit us to speak of this profoundly personal experience, both in terms of philosophical concepts and in terms of biochemistry, which after all it involves the most elaborate biochemical processes, and in terms of theology.

These are three—at present—these are three totally separate and unconnected vocabularies. And our problem is somehow to discover a poetical vocabulary, a literary, artistic vocabulary, which shall make it possible for us to parse without any serious jolt from one point of view to the other. From one universe of discourse to the other universe of discourse.

Well when one poses the problem in a specific form such as this, one can see very well that it is excessively difficult. We really do require some kind of Shakespeare to solve it for us.

Well, I, as I say, shall do my best to go ahead with what I can do with my limited resources now, and to see what can be done in the way of building bridges.

Well, now let us change our metaphor a little from that of the engineer to that of the domesticity and speak about a metaphor which I came upon the other day, which I can’t remember who invented it. But it’s a very expressive one where somebody was protesting against what he called “the celibacy of the intellect.”⁵

Now the trouble of all specialized knowledge is that it’s a whole organized series of celibacies. That it’s uhm—we have these people living—so to speak, these subjects living in

4 Shakespeare’s original goes: “But thoughts the slave of life, and life, Time’s fool,
And Time, that takes survey of all the world,/Must have a stop.”
- King Henry IV, Part I, Act 5, Scene 4.

5 A. N. Whitehead (1861–1947) in *Science and the Modern World*, 1953

their monastic cells apart from one another and simply not intermarrying and producing the children that they ought to produce.

And the problem, it seems to me, is to try and arrange marriages between these various subjects in the hope of producing a valuable progeny.

The celibacy—it may be added—is not wholly of the intellect. There is also—and this is a very characteristic feature of contemporary literature—a celibacy of the passions, a celibacy of the instinct.

If one goes to see plays for example by Tennessee Williams (1911–1983), a dramatist whom I greatly admire, an enormous talent. But here one sees an almost complete celibacy of the passions. These things exist in, so to speak, a pure—chemically pure state without any connection with the intellect whatsoever.

They are living a life entirely of their own, and if you were to take these plays as a serious picture of contemporary life you would certainly be extremely deceived because, I was thinking the other day when I saw one very well staged in a theater, but the mere fact of putting this play on in a theater required such an immense combination of people using their intellects, using responsibility, using their will and keeping their will firmly fixed on the subject, which was itself a complete denial of the reality of this picture of life in which the passions are divorced from the intellectual and voluntary life of human beings.

So what we need to do is, as I say, to arrange marriages or rather to bring back into the originally married state these different arbitrarily separated compartments of knowledge and feeling which have been separated out and, as I say, made to live in their own monastic cells in isolation. We can parody the Bible and say “that which nature has brought together let not man put asunder. Let not the arbitrary academic division into subjects tear apart this closely knit web of reality and turn it in a sense into a kind of nonsense.”

Now here we are up—of course—against a very serious problem that any form of higher knowledge requires specialization. We have to specialize in order to penetrate more deeply into a certain separate aspect of reality. But although specialization is absolutely necessary, it can be, if carried too far, absolutely fatal.

And we—therefore, we must discover some way of making the best of both worlds, of making the best of the highly specialized world and of what may be called the married world of immediate experience in which nothing can be separated cause it is all there. We are both intellects and passions, both—our minds have objective knowledge of the art of world and subjective experience and we must, as I say, discover methods for bringing these separate fields together.

Well, this is what I shall try to—as I say—to do in this series of lectures: To show the relationship between the world of objective observation and intellectual abstraction and the world of immediate experience. This is the most important—i feel—the most important problem in current education.

And I would like to quote here a very beautiful and interesting sentence which occurs in a letter written by my grandfather to Charles Kingsley (1819–1875) on the occasion of the death of Huxley’s small son, aged four⁶.

Kingsley had written a letter of sympathy and my grandfather wrote back at great length on the whole problem of immortality and the position of the scientist in the modern world.

And in that letter this very interesting sentence occurs:

6 Noel Huxley, T. H. Huxley’s first born, died from scarlet fever in 1860.

“Science seems to me to teach in the highest and strongest manner the great truth which is embodied in the Christian conception of entire surrender to the will of God. Sit down before fact like a little child, and be prepared to give up every preconceived notion, follow humbly wherever and to whatever abysses nature leads, or you shall learn nothing.”

Well one sees here that the whole scientific process is intrinsically an ethical process. There is this—I think this is a side to science which is insufficiently stressed at present. The whole humility of the scientist in the face of fact and observation is a thing of tremendous importance and ethical point of view.

This was seen very clearly as long as ago as the time of Francis Bacon (1561–1626), who though himself not a serious man of science, did lay down a number of general ideas of extreme importance for the development of science in the 17th and 18th centuries.

What Bacon was chiefly hostile to was the philosophy—above all the scholastic philosophy and even the Greek philosophy which underlay the scholastic philosophy—which presumed to make statements about the universe without taking the trouble to observe what the facts really were.

He was hostile, as I say, intensely to the scholastics and even I think in a rather unjust way he was exceedingly hostile both to Plato (c. 428–c. 348 BC) and even to Aristotle (384–322 BC), who after all was a rather important scientific observer.

And there are a number of very remarkable passages in Bacon where he talks about the real wickedness of these philosophers, he speaks of Plato and Aristotle as guilty men. And there is a famous passage in *The Advancement of Learning* (1605) where he speaks about the scholastics being spiders, weaving webs out of their own heads without any consideration of what was going on outside and the webs were admirable for the fineness of the thread and workmanship, but without any substance and without any fruit.

In the same way he speaks in the preface to one of the minor books, the *The History of the Winds* (1623), in a very eloquent and powerful way about the ethical quality of science. I think I would like to read this passage, which is a very beautiful one. He says:

Wherefore, if there be any humility towards the Creator, if there be any charity towards men, and zeal to lessen human wants and human suffering, if there be any love of truth in natural things, any hatred of darkness, any desire to purify the understanding; men are to be entreated again and again that they should dismiss for a while, or at least put aside, those inconstant and preposterous philosophies, which prefer theses to hypotheses, have led experience captive, and triumphed over the works of God. That they should humbly and with a certain reverence draw near to the Book of Creation; that they should there make a stay that on it they should meditate, and that then washed and clean, they should in chastity and integrity turn them away from opinion.”

This is a really very splendid passage. One which should be meditated on, because it is precisely this reluctance to accept preconceived notions, this reluctance to turn your opinion into a thesis rather than a working hypothesis, which is the hallmark of the genuine scientist and which constitutes the essential ethical nature of the scientific activity.

And Bacon, it should be added, felt very strongly that one of the values of science was of course in its fruits—that it could do a great deal to lessen human wants and lessen human suffering.

Well, as we know it certainly can do this, but it also can do other things, which we are

painfully aware at the present moment. And here again, we see another urgent need for bringing together the humanistic and religious on the one hand and the—the humanistic, religious and the ethical on the one hand and the objectively scientific on the other.

Because as Bacon was never tired of saying, “Knowledge without love can be profoundly corrupt and even evil,” and it was for this that he blamed philosophers like Plato and Aristotle, who had pursued knowledge for the sake purely of intellectual satisfaction and not with a motive of love, in order to help human beings, and not with the humility towards the outer world which made them study objective facts and base their reasonings upon those facts.⁷

At present time, of course, the shoe is rather on the other foot. The overweening philosophers are members of the scientific school who have forgotten scientific humility. We are all familiar with the extreme bumptiousness of the earlier behaviorists, who really, I must say, when one reads some of the early of writing of <John B.> Watson (1878–1958), one is absolutely flabbergasted that anybody who professed to be scientific could have made statements so wildly sweeping and who dismissed so cavalierly enormous areas of human experience.

And to these people, certainly Bacon would have brought a reproach that they were a) overweening, and b) lacking in the love which alone can make knowledge precious and valuable.

Our problem, then, is somehow to find this bridge—these various bridges between the different aspects of the world as we know it, and to recreate the married state in which direct experience—with which direct experience makes us familiar. We are always, all the time, familiar with the fact that the world of concepts and abstractions is balanced by the world of immediate experience. That inner experience is there at the same time as objective descriptions of nature built upon inferences.

And this is something I think we shall have to discuss later on in this course: What is the philosophical relationship between these two sides of our knowledge, the inner and the outer? I am inclined to think that philosophically-minded scientists like Max Planck (1858–1947) are right in conceiving the two worlds, the inner and the outer, the abstract and the immediate, as being simply aspects of the same reality.

That there is a—the basic reality is a neutral monism which is seen from one point of view as, for example, as atomic physics and from another point of view as immediate experience of value and love and emotion. But we can’t go into this problem at the moment except as to mention it and to point out that the building of the bridge is an urgent, urgent problem in our world.

Well, what I shall try to do in the course of these lectures is to take various features of the human situation. I’ve deliberately kept the title of the course as vague and as general as I possibly could, so as not to commit myself too far in advance or to pretend that I know too much, but our business then will be to take the various aspects and to see how bridges can be built between the facts and values.

For example, I shall start, I think, next week with a consideration of man in relation to the planet. Where we live on this particular planet, and whether we like it or not, we have to get on with it indefinitely, and unfortunately, I’m sorry to say, that all this stuff about going to

⁷ It is impressive that Bacon, according to Huxley, has such a certain insight into whether Plato was motivated by love of his fellow humans or not. On this question, the reader is challenged to work through the works of Plato and consider the question himself.

Mars and so on, seems to me pretty good nonsense. It's very much more important to see what we can do with Earth, and unfortunately what we are doing with Earth is disastrously bad.

And we have to, I shall try, first of all, to set forth the facts of what we are doing with our planetary environment, and then in a subsequent lecture, to consider what the ethical corollaries of these facts are and what sort of *Weltanschauung*, what sort of philosophy of life would help us to remedy these facts which certainly require remedying because otherwise, if we don't remedy them, we shall find ourselves in a terrible situation.

Well I shall discuss this bridge between two types of facts, but then I shall talk about the relationship between resources as they are available now and as they will be available in the future, as a slight bridge builder--a kind of hypothetical bridge into the future with this lecture.

Then I think we shall turn to the strictly biological problem of the human individual and discuss man from the point of view of heredity and from the point of view of environment and try to establish some kind of balance between the two factors which so profoundly influences existence.

Then will come, of course, the problem of man and society, and there I shall spend a good deal of time discussing what seems to me the most profoundly important sociological fact of modern times, which is the growth of technology and what may be called the technicization of every aspect of human life. And to discuss what, if anything, can be done about this.

Then I will move on to other aspects of the social life and in due course, I hope to get down to the problems of the individual, the problems of human potentialities and what can be done to realize these potentialities which at present remain to such a large extent latent in such a large proportion of the people. Whether something can be done to make our efficiency greater than it is, to bring out the potentialities which certainly lie within us.

And there will—needless to say—in this field there will have to be discussions of art and problems of creation and insight. And we shall wander very far afield, in this search for bridges back and forth.

As I say, the more distant parts of this course still remain rather vague to me, but I hope they will clarify themselves as we go along and by the time we're at the end, we shall have covered a great deal of ground, and I think by that time we will also be extremely bored with what I have to say, but fortunately I shall then quietly disappear.

{applause}