

Aldous Huxley (1894–1963)
The Ultimate Revolution
20th of March 1962

This lecture was part of a panel discussion. The recording of the lecture can be found in the Aldous Huxley Papers of the UCLA Library Digital Collections as tape 157a and questions and answers as tape 157b.

Link to collection: <http://digital2.library.ucla.edu/viewItem.do?ark=21198/zz00253vz2&maxPageItems=999>

Link to tape 157a: <http://digital2.library.ucla.edu/viewItem.do?ark=21198/zz002b1414>

Link to tape 157b: <http://digital2.library.ucla.edu/viewItem.do?ark=21198/zz002b140m>

It can also be found at:

Berkeley Language Center - Speech Archive SA 0269

http://dpg.lib.berkeley.edu/webdb/mrc/search_vod.pl?avr=1

Edited by Hans Frederik Ross Nielsen

Thanks to J. Eric Klobas for making a first, crude transcript available [online](#). Thanks to Steve Mendoza for proofreading the transcript.

Suggestions for corrections and improvements are welcome.

hfl985@gmail.com

© This material is reproduced with the permission of the copyright holders of the original material. All further reproduction must refer back to this document and must be strictly non-commercial.

Legend: <Editors addition>, [Editors comment], {Description of non-verbal sounds}.

Mark Brenner:

[Recording starting mid-sentence] Mr. Aldous Huxley, a renowned Essayist and Novelist who during the spring semester is residing at the university in his capacity of a Ford research professor. Mr. Huxley has recently returned from a conference at the Institute for the Study of Democratic Institutions in Santa Barbara¹ where the discussion focused on the development of new techniques by which to control and direct human behavior. Traditionally it has been possible to suppress individual freedom through the application of physical coercion through the appeal of ideologies through the manipulation of man's physical and social environment and more recently through the techniques, the cruder techniques of psychological conditioning. The Ultimate Revolution, about which Mr. Huxley will speak today, concerns itself with the development of new behavioral controls, which operate directly upon the psycho-physiological organisms of man. That is, the capacity to replace external constraint by internal compulsions. As those of us who are familiar with Mr. Huxley's works will know, this is a subject of which he has been concerned for quite a period of time. Mr. Huxley will make a presentation of approximately half an hour followed by some brief discussions and questions by the two panelists sitting to my left, Miss Lillian Rivlin (1936–) and Mr. John Post. Now Mr. Huxley.

Mr. Huxley:

¹ 'The Encyclopedia Britannica Conference on The Technological Order', held at The Center for the Study of Democratic Institutions, University of California, Santa Barbara, March 11-16, 1962. Huxley spoke on the 16th. His speech was titled 'Tangents of Technology'.

Thank You. {Applause}

Uh, first of all, the—I'd like to say, that the conference at Santa Barbara was not directly concerned with the control of the mind. That was a conference—there have been two of them now—at the University of California Medical center in San Francisco, one this year which I didn't attend, and one two years ago where there was a considerable discussion on this subject². At Santa Barbara we were talking about technology in general and the effects it's likely to have on society and the problems related to technological transplanting of technology into underdeveloped countries.

Well, now in regard to this problem of The Ultimate Revolution, this has been very well summed up by the moderator. In the past we can say that all revolutions have essentially aimed at changing the environment in order to change the individual. I mean, there has been the political revolution, the economic revolution, in the time of the Reformation, the religious revolution. All these aimed, as I say, not directly at the human being, but at his surroundings. So that by modifying the surroundings you did achieve, at one remove³, an effect upon the human being.

Today we are faced, I think, with the approach of what may be called The Ultimate Revolution, The Final Revolution, where man can act directly on the mind-body of his fellows. Well, needless to say, some kind of direct action on human mind-bodies has been going on since the beginning of time. But this has generally been of a violent nature. The techniques of terrorism have been known from time immemorial and people have employed them with more or less ingenuity. Sometimes with the utmost cruelty, sometimes with a good deal of skill acquired by a process of trial and error, finding out what the best ways of using torture, imprisonment, constraints of various kinds <is>.

But, as (I think it was) <Klemens von> Metternich (1773–1859) said many years ago, “you can do everything with bayonets except sit on them”. If you are going to control any population for any length of time, you must have some measure of consent. It's exceedingly difficult to see how pure terrorism can function indefinitely. It can function for a fairly long time, but I think sooner or later you have to bring in an element of persuasion, an element of getting people to consent to what is happening to them.

Well, it seems to me that the nature of The Ultimate Revolution with which we are now faced is precisely this: That we are in process of developing a whole series of techniques, which will enable the controlling oligarchy who have always existed and presumably always will exist, to get people, actually, to love their servitude. This is the, it seems to me, the ultimate in malevolent revolutions shall we say, and this is a problem which has interested me for many years and about which I wrote thirty years ago, a fable, *Brave New World*, which is essentially the account of a society making use of all the devices at that time available and some of the devices which I imagined to be possible, making use of them in order to, first of all, to standardize the population, to iron out inconvenient human differences, to create, so to say, mass produced models of human beings arranged in some kind of a scientific caste system. And since then I have continued to be extremely interested in this problem and I have noticed with increasing dismay that a number of the predictions which were purely fantastic when I made them thirty years ago have come true or seem in process of coming true. That a number of techniques about which I talked seem to be here already. And there seems to be a general movement in the direction of this kind of ultimate revolution, this method of control by which a people can be made to enjoy a state of affairs which, by any decent standard, they ought not to enjoy; this—the enjoyment of servitude. Well this process, as I say, has gone on for over—over the years, and I have become more and more

2 Symposium: 'A Pharmacologic Approach to the Study of the Mind', at the University of California, San Francisco Medical Center on Jan. 25-27, 1959. Huxley spoke on the 26th. His speech was titled “The Final Revolution”.

3 The idiom “at one remove” means “at a distance”.

interested in what is happening.

And here I would like briefly to compare the parable of Brave New World with another parable which was put forth more recently in George Orwell's book, "1984". Orwell (1903–1950) wrote his book between, I think between '45 and '48⁴ at the time when the Stalinist terror regime was still in Full swing and just after the collapse of the Hitlerian terror regime. And his book, which I admire greatly, it's a book of very great talent and extraordinary ingenuity, shows—is so to say, a projection into the future of the immediate past, of what for him was the immediate past, and the immediate present. It was a projection into the future of a society where control was exercised wholly by terrorism and violent attacks upon the mind-body of individuals.

Whereas my own book which was written in 1932, when there was only a mild dictatorship in the form of <Benito> Mussolini (1883–1945) in existence, was not overshadowed by the idea of terrorism. And I was therefore free in a way in which Orwell was not free, to think about these other methods of control, these non-violent methods. And my—I'm inclined to think that the scientific dictatorships of the future—and I think there are going to be scientific dictatorships in many parts of the world—will be, probably, a good deal nearer to the "Brave New World" pattern than to the "1984" pattern. They will be a good deal nearer not because of any humanitarian qualms of the scientific dictators, but simply because the "Brave New World" pattern is probably a good deal more efficient than the other.

That if you can get people to consent to the state of affairs in which they are living, the state of servitude the state of being—having their differences ironed out and being made amenable to mass production methods on the social level, if you can do this, then you have—you are likely to have a much more stable and much more lasting society, much more easily controllable society than you would if you were relying wholly on clubs and firing squads and concentration camps. So that my own feeling is that the "1984" picture was tinged, of course, by the immediate past and present in which Orwell was living, but the past and the present of those years does not represent, I feel, the likely trend of what is going to happen. Needless to say, we shall never get rid of terrorism, this will always find its way to the surface.

But I think that insofar as dictators become more and more scientific, more and more concerned with the technically perfect, perfectly running society, they will be more and more interested in the kind of techniques which I imagined and described from existing realities in Brave New World. So that, it seems to me then, that this ultimate revolution is really not very far away, that we—already a number of the techniques for bringing about this kind of control are here, and it remains to be seen when and where and by whom they will first be applied in any large scale.

And first let me talk about—a little bit about the improvement, even, in the techniques of terrorism. I think there have been improvements. <Ivan> Pavlov (1849–1936), after all, made some extremely profound observations, both on animals and on human beings. And he found, among other things, that conditioning techniques applied to animals or humans in a state either of psychological or physical stress, sank in, so to say, very deeply into the mind-body of the creature, and were extremely difficult to get rid of. That they seemed to be embedded more deeply than other forms of conditioning.

And this, of course, this fact, I think, was discovered empirically in the past. People did make use of many of these techniques, but the difference between the old empirical intuitive methods and our own methods is the difference between, a sort of, hit and miss craftsman's point of view and the genuinely scientific point of view. I mean, I think there is a real difference between ourselves and, say, the inquisitors of the 16th century. We know much more precisely what we are doing, than they knew, and we can extend, because of our theoretical knowledge, we can extend

4 Published June 8, 1949.

what we are doing over a wider area with a greater assurance of being producing something which really works.

In this context I would like to mention the extremely interesting chapters in Dr. William Sargant's (1907–1988) *Battle for the Mind*⁵ where he points out how intuitively some of the great religious teachers/leaders of the past hit on the Pavlovian method. He speaks specifically of <John> Wesley's (1703–1791) method of producing conversions which were essentially based upon the technique of heightening psychological stress to the limit by talking about hell fire and so making people extremely vulnerable to suggestion and then suddenly releasing this stress by offering hopes of heaven. And this is a very interesting chapter of showing how completely, on purely intuitive and empirical grounds a skilled natural psychologist, as Wesley was, could discover these Pavlovian methods.

Well, as I say, we now know the reason why these techniques worked and there's no doubt at all that we can, if we wanted to, carry them much further than was possible in the past. And of course in the history of—recent history of brainwashing, both as applied to prisoners of war and to the lower personnel within the communist party in China, we see that the Pavlovian methods have been applied systematically and with—evidently with extraordinary efficacy. I mean, I think there can be no doubt that by the application of these methods a very large army of totally devoted people has been created. The conditioning has been driven in, so to say, by a kind of psychological iontophoresis, into the very depths of the—people's being, and has got so deep that it's very difficult for it ever to be rooted out, and these methods, I think, are a real refinement on the older methods of terror because they combine methods of terror with methods of acceptance, that the person who—he is subjected to a form of terroristic stress but for the purpose of inducing a kind of “voluntary” acceptance of the state into—the psychological state into which he has been driven and the state of affairs within which he finds himself.

So that, as I say, there has been a definite improvement, shall we say, in the—even in the techniques of terrorism. Well, then we come to the consideration of other techniques, of non-terroristic techniques, for inducing consent and for inducing people to love their servitude. Here, I mean, I think we can—I don't think I can possibly go into all of them, because I don't know all of them, but, I mean, I can mention a few of the more obvious methods which can now be used and which are based upon recent scientific findings.

First of all there are the methods connected with straight suggestion and hypnosis. I think we know much more about this subject than was known in the past. People, of course, have always known about suggestion, and although they didn't know the word “hypnosis” they certainly practiced it in various ways. But we have, I think, a much greater knowledge of the subject than in the past, and we can make use of our knowledge in ways which I think the past was probably never able to make use of it. For example, one of the things we have—we now know for certain, is that there is, of course, an enormous—I mean this has always been known—a very great difference between individuals in regard to their suggestibility. But we now, I think, know pretty clearly the sort of statistical structure of a population in regard to its suggestibility. It's very interesting when you look at the findings in different fields, I mean, in the field of hypnosis, in the field of administering placebos, for example, in the field of general suggestion in states of drowsiness or light sleep, you will find the same sorts of orders of magnitude continually cropping up.

You'll find for example that the experienced hypnotist will tell one that the number of people—the percentage of people who can be hypnotized with the utmost facility, {snaps} just like that, is about 20%, and that about a corresponding number at the other end of the scale are very, very difficult, or almost impossible to hypnotize and that in between there lies a large mass of people

5 William Sargant, *Battle for the Mind: A Physiology of Conversion and Brain-Washing* (1957: Garden City, N.Y., Doubleday)

who can, with more or less difficulty, be hypnotized. That they can gradually be, if you work hard enough at it, be got into the hypnotic state. And in the same way the same sort of figures crop up again, for example, in relation to the administration of placebos.

A big experiment was carried out three or four years ago in the general hospital in Boston on post-operative cases where several hundred men and woman, suffering comparable kinds of pain after serious operations, were allowed to—were given injections whenever they asked for them, whenever the pain got bad, and the injections 50% of the time were of morphine and 50% of the time were of distilled water. And about twenty percent of those who went through the experiment, about 20% of them got just as much relief from the distilled waters as from the morphea. About 20% got no relief from the distilled water, and in between were those who got some relief or got relief occasionally.

So, here again we see the same sort of distribution, and similarly with regard to what in *Brave New World* I called Hypnopedia, which is the sleep teaching, I was talking not long ago to a man who manufactures records which people can listen to in the—during the light part of sleep, I mean, these are records for getting rich, for sexual satisfaction {general hilarity}, for confidence in salesmanship and so on, and he said, its very interesting, that—these records sold on a money-back basis—and he says there is regularly between 15% and 20% of people who write indignantly saying the records don't work at all, and he sends the money back at once. There are on the other hand, there are over 20% who write enthusiastically saying they are much richer, their sexual life is much better {general hilarity} etc, etc. And these, of course, are the dream clients and they buy more of these records. And then in between there are those who complain they are not getting much results and they have to have letters written to them saying “Well, go persist, my dear, go on {general hilarity} and you will get there.” and they generally—they generally do get results in the long run.

Well, as I say, this—on the basis of this, I think we see quite clearly that the human populations can be categorized according to their suggestibility fairly clearly. I suspect very strongly that this twenty percent is the same in all these cases. And I suspect, also, that it would not be at all difficult to recognize in very early childhood who were those who were extremely suggestible, who were those extremely unsuggestible and who were those who occupy the intermediate space. Quite clearly if everybody were extremely unsuggestible, organized society would be quite impossible and if everybody were extremely suggestible then a dictatorship would be absolutely inevitable. I mean it's very fortunate we have people who are moderately suggestible in the majority and who therefore preserve us from dictatorship but do permit organized society to be formed. But once given the fact that there are these 20% of highly suggestible people, it becomes quite clear that this is a matter of enormous political importance, for example, any demagogue who is able to get hold of a large number of these 20% of suggestible people and to organize them is really in a position to overthrow any government in any country.

And, I mean, I think this—after all, we've have had the most incredible example in recent years of what can be done by efficient methods of suggestion and persuasion in the form of Hitler. Anyone who has read, for example, <Alan> Bullock's (1914–2004) *Life of Hitler*⁶, comes forth with this with a sort of horrified admiration for this infernal genius who really understood human weaknesses, I think, almost better than anybody and who exploited them with all the resources then available. I mean, he knew everything, I mean, for example, he knew intuitively this Pavlovian truth, that conditioning installed in a state of stress or fatigue goes much deeper than conditioning installed at other times. This was why all his big speeches were organized at night. He speaks on this quite frankly, of course, in *Mein Kampf*, he says this was done solely because people are tired at night and therefore much less capable of resisting persuasion than they would be during the day.

6 Alan Bullock, *Hitler: A Study in Tyranny* (1952: Odhams Press, London)

And in all his techniques he was using—he had discovered intuitively and by trial and error a great many of the weaknesses which we now know about on a sort of scientific way, I think, much more clearly than he did.

But the fact remains that this differential suggestibility, this susceptibility to hypnosis, I do think is something which has to be considered very carefully in relation to any kind of thought about democratic government. I mean, if there are 20% of the people who can, really, be suggested into believing almost anything (as evidently they can be), then we have to take extremely careful steps to prevent the rise of demagogues who will drive them on into extreme positions and then organize them into very, very dangerous armies, private armies which may overthrow the government.

This as I say is—in this field of pure persuasion, I think we do know much more than we did in the past, and obviously we now have mechanisms for multiplying the demagogue's voice and image in a quite hallucinatory way, I mean, the television and the radio, Hitler was making enormous use of the radio, he could speak to millions of people simultaneously. I mean, this alone, of course, creates an enormous gulf between the modern and the ancient demagogue. The ancient demagogue could only appeal to as many people as his voice could reach by yelling at his utmost, but the modern demagogue can touch literally millions at a time, and, of course, with the multiplication of his image he can produce this kind of hallucinatory effect which is of enormous hypnotic and suggestive importance.

But then there are the various other methods one can think of which have, thank heaven, as yet have not been used, but which obviously could be used. There is for example, the pharmacological method, this was one of the things I talked about in *Brave New World*. I invented a hypothetical drug called SOMA, which, of course, could not exist as it stood there because it was simultaneously a stimulant, a narcotic and a hallucinogen, which seems unlikely in one substance. But the point is that in several—if you applied several different substances you could get almost all these results even now. And the really interesting things about the new chemical substances, the new mind-changing drugs is this, that whereas—if you looking back into history its clear that man has always had a hankering after mind changing chemicals, he has always desired to take holidays from himself, but the—and this is the most extraordinary effect of all, is that every naturally occurring stimulant, narcotic, sedative, or hallucinogen, was discovered before the dawn of history. I don't think there is one single one of these naturally occurring ones which modern science has discovered.

Modern science has, of course, better ways of extracting the active principals from these drugs and of course has discovered numerous ways of synthesizing new substances of extreme power, but the actual discovery of these naturally occurring things was made by primitive man, goodness knows how many centuries ago. There is, for example, in the—underneath the lake dwellings—the early Neolithic lake dwellings which were being dug up in Switzerland we find poppy-heads which looks as though people were already using this most ancient and powerful and most dangerous of narcotics, even in the days before the rise of agriculture. So that man was apparently a dope addict before he was a farmer {general hilarity}, which is a very, very curious comment on human nature.

But, the difference, as I say, between the ancient mind-changers, the traditional mind-changers, and these new substances, is that they were extremely harmful and the new ones are not. I mean, even the permissible mind-changer, alcohol, is not entirely harmless, as people may have noticed, and the other ones, the non-permissible ones, such as opium and cocaine, opium and all its derivatives, are very harmful indeed. They rapidly produce addiction, and in some cases lead at an extraordinary rate to physical degeneration and death.

Whereas these new substances, this is really very extraordinary, that a number of these new

mind-changing substances can produce enormous revolutions within the mental side of our being, and yet do almost nothing to the physiological side. I mean, you can have an enormous revolution, for example, with LSD-25 or with the newly synthesized drug, psilocybin, which is the active principal of the Mexican sacred mushroom. You can have this enormous mental revolution with no more physiological revolution than you would get from drinking two cocktails. And this is a, really, most extraordinary effect.

And it is, of course, true that pharmacologists are producing a great many wonder drugs which—where the cure is almost worse than the disease. Every year new edition of medical textbooks contains a longer and longer chapter of what are iatrogenic diseases, that is to say, diseases caused by doctors {general hilarity}. And this is quite true, many of the wonder drugs are extremely dangerous. I mean, they can produce extraordinary effects and in critical conditions they should certainly be used, but they should be used with the utmost caution. But there is evidently a whole class of drugs effecting the central nervous system which can produce enormous changes in sedation, in euphoria, in energizing the whole mental process without doing any perceptible harm to the body, and in this sense, this presents to me the most extraordinary revolution. In the hands of a dictator these substances, of one kind or another, could be used in the most—first of all, with complete harmlessness, and the result would be—I mean, you can imagine a euphoric which would make people thoroughly happy even in the most abominable circumstances.

I mean, these things are possible. I mean, this is the extraordinary thing. I mean, after all this has even been true with the crude old drugs. I mean, as <A. E.> Housman (1859–1936) years ago remarked⁷ apropos <John> Milton's (1608–1674) *Paradise Lost*⁸, he says “And beer does more than Milton can to justify God's ways to man” {general hilarity}. And beer is, of course, an extremely crude drug compared with these ones. And you can certainly say that some of the psychic energizers and the new hallucinants could do incomparably more than Milton and all the theologians combined could possibly do to make the terrifying mystery of our existence seem more tolerable than it does. So that, here, I think one has an enormous area in which The Ultimate Revolution could function very well indeed, an area in which a great deal of control could be used by—not through terror, but through making life seem much more enjoyable than it normally does. Enjoyable to the point, where, as I said before, Human beings come to love a state of things which, by any reasonable and decent human standard, they ought not to love and this I think is perfectly possible.

But then, very briefly, let me speak about one of the more recent developments in the sphere of neurology, the implantation of electrodes in the brain. This, of course, has been done in the large scale in animals and in a few cases it's been done in a hopeless—in cases of the hopelessly insane. And it is—anybody who has watched the behavior of rats with electrodes planted in different centers must come away from this experience with the most extraordinary doubts about what on Earth is in store for us if ever this is got hold of by a dictator. If the—I mean, I saw not long ago some rats in <H. W.> Magoun's (1907–1991) laboratory at UCLA. There were two sets of them, one with electrodes planted in the pleasure center, and these rats were—the technique was that they had a bar which they pressed which turned on a very small current for a short space of time which—we had a wire connected with that electrode—and which stimulated this pleasure center which was evidently absolutely ecstatic cause these rats were pressing the bar 18,000 times a day {general hilarity}. Apparently if you kept them from pressing the bar for a day, they would press the bar 36,000 times on the following day and would fall—till they fell down in complete exhaustion {general hilarity}. And they would neither eat, nor be interested in the opposite sex but would just go on pressing this bar {pounds on podium, general hilarity}.

Then the most extraordinary rats were those where the electrode was planted halfway

7 A. E. Houseman, *A Shropshire Lad* (c. 1896: McKay, Philadelphia). Poem no. LXII.

8 John Milton, *Paradise lost* (1667: Peter Parker, London).

between the pleasure and the pain center. And where, evidently, the result was a kind of mixture of the most wonderful ecstasy and being on the rack at the same time. And you would see the rat sort of looking at its bar and sort of saying “To be or not to be, that is the question”. {general hilarity} Finally it would approach {Pounds on podium, exited general hilarity} and go back with this awful—I mean, if one can humanize or anthropomorphize, I mean, he was feeling something terribly mixed and he would wait for quite a long time before pressing the bar again, but he would always press it again {general hilarity}. I mean, this was the extraordinary thing.

I noticed in the most recent issue of Scientific American⁹ there's a very interesting article on electrodes in the brains of chickens, where the technique is very ingenious; you sink into their brains a little socket with a screw on it and the electrode, then, can then be screwed deeper and deeper into the brain stem and you can test at any moment according to the depth, which goes in fractions of a millimeter, of what you're stimulating. And these creatures are not merely stimulated by wire, they're fitted with a miniaturized radio receiver, weighing less than an ounce¹⁰, which is attached to them so that they can be communicated with at a distance. I mean, they can run about in the barnyard and you can press the button and this particular area of the brain to which the electrode has been screwed down to would be stimulated and you would get these fantastic phenomena; that a sleepy chicken will suddenly get up and rush about, or an active chicken will suddenly sit down and go to sleep or a hen will suddenly start sitting as though it were hatching out an egg or a rooster will start fighting or suddenly go into a state of extreme depression.

The whole picture of the absolute control of the drives is terrifying, and in the cases—the few cases in which this has been done with very sick human beings, the effects are evidently very remarkable too. I was talking last summer in England to Grey Walter (1910–1977), who is the most eminent exponent of the Electroencephalogram techniques in England, and he was telling me that he's seen hopeless inmates at asylums with these things in their heads, and these people were suffering from uncontrollable depression, and they had had the electrodes inserted into something resembling, evidently, the pleasure center of the rat, anyhow, when they felt too bad, they just pressed a button on the battery in their pocket and he said the results were fantastic, the mouth which was going down would suddenly turn up and they would evidently feel, I don't know for how long at a time, very cheerful and happy. So that, here again one sees the most extraordinary revolutionary techniques, which are now available to us.

Now, I think what is obviously perfectly clear, is, that for the present, these techniques are not being used except in an experimental way, but I think it is extraordinarily important for us to realize—to realize what is happening, to make ourselves acquainted with what has already happened, and then use a certain amount of imagination to extrapolate into the future the sort of things that might happen. I mean, what might happen if these fantastically powerful techniques were used by unscrupulous people in authority, what on Earth would happen, what sort of society would we get?

And I think this is peculiarly important because as one sees when looking back over history we have allowed in the past all those advances in technology which have profoundly changed our social and individual life—we have allowed them to take us by surprise. I mean, it seems to me that, during the late 18th century, early 19th century, when the new machines were making possible the factory system. It was not beyond the wit of man to see what—to look at what was happening and to project into the future and maybe forestall the really dreadful consequences which plagued England and most of Western Europe and most of this country for about fifty or sixty years, the horrible abuses of the factory system and if a certain amount of forethought had been devoted to the problem at that time, if people had, first of all, found out what was happening and then used their

9 E. Holst & U. Saint Paul, *Electrically Controlled Behavior*, Scientific American, March 1962, Volume 206, pp.50-59

10 One ounce = 28.3 grams

imagination to see what might happen, and then had gone on to work out means by which the worst applications of the new techniques would not take place, well, then I think western humanity might have been spared about three generations of utter misery which was imposed upon the poor at that time.

And similarly with various technological advances now. I mean, it is quite clear we have to start thinking very, very hard about the problems of automation. And, again, I think we have to think, still, more profoundly about the problems which may arise in relation to these new techniques, which may contribute to this ultimate revolution. Our business is to, first of all, as I say, to be aware of what is happening, then to use our imagination to see what might happen, how this might be abused, and then, if possible, to see that the enormous powers which we now possess thanks to these scientific and technological advances shall be used for the benefit of human beings and not for their ultimate degradation.

Thank You {Applause}.

Q & A

Mr. Brenner: We do have a few more minutes—

Mr. Huxley: I'm very sorry, I've talked much to long.

Mr. Brenner: It's quite alright—for some brief discussion, and those of you who are interested in staying and listening, I assure that it'll be well worth while. John—Mr. Post, would you like to ask questions?

Mr. Post: Well, I am afraid my question shows a certain optimism, which may not be justified in the way your quote from <A. E.> Housman (1859–1936) that—“Malt does more than Milton can, to justify God's ways to man.”—indicates that my remarks may show that I'm looking “into the pewter pot, to see the world as the world is not.”, at any rate, I'm a bit worried about your picture, the picture you paint, that the future may contain a number of monolithic, scientific dictatorships, that there may be a ground swell in this direction, a ground swell caused by human tendency to seek pleasure where it can be found. But I'm struck by the fact that movements of that sort are always far more complex than any of our attempts at characterizing them, and I think that, perhaps, in this complexity, lies a ray of hope; that the future may not contain such monolithic scientific dictatorships, and that the developments, which we can expect in light of the various technological achievements you mentioned, may not lead in the direction of scientific dictatorships in the way you indicate. Now, this may depend to a great extent upon the nature or the characteristics of the nations in which these results are first introduced. In other words, my question really is: When you project into the future, and you say that the chances are very great of dictatorships of this kind occurring, could you qualify a bit more, what the chances are?

Huxley: Well I'm—I don't think the chances are very great, I think they are there, and I would think that one of the reasons why we may get more dictatorships than we like, lies in quite a different field, I mean, with large parts of the world increasing at 3 % per annum in population, goodness knows what is going to happen. I mean, for example, I was in India last autumn, and, of course, this is an unutterably depressingly enormous poverty. And the depression grew a great deal with the announcement just when we were there that the United Nations had come to the conclusion that its earlier estimates of the increase of the Indian population were very much too low. The estimates had been in the neighborhood of 1.7% per annum—which is about the same as the United States—which had to be corrected up to 2.2 or 2.3, which I think doubles the population in about 32 years and of course there are large parts of the world where the increase is fully 3% and in certain parts of the world even 4%. I mean, 3% doubles the population in 24 years and 4%—I forget—in about 16,

I think. But it seems to me that the danger in regard to dictatorship arises with the—as the population presses more heavily upon resources. And as the rising tide of expectation which certainly exists in these underdeveloped countries is frustrated—as, undoubtedly, it is going to be because it is almost impossible to make any development which will catch up with, much less go faster than the population increase—so, we may get a great deal of social unrest and, of course, social unrest leads first to chaos and then to dictatorship. I mean, I think that the prospect of some kind of dictatorship, either military or communistic, I think, in most cases more likely military, seems to me very great within the next 15 to 20 years. And whether some of these dictatorships may make use of these modern methods remains to be seen. But I think that unhappily the prospects for dictatorships in large areas of the world seem to me very great at the moment. I think there is a considerable likelihood of this thing happening.

Mrs. Lillian: The implication seems to be that we ought to be apprehensive of these techniques falling into the hands of dictatorships, demagogues etc. But I could easily envisage a situation where western democracies could use these methods, such as electrodes attached to the brain of the SAC Air<force>--of the SAC, in order to avoid accidental war. This could be plugged in—on very moral terms. Or that you give SOMA¹¹ to the discontented minority of the population, who are suffering from anomie¹² etc. Would you care to comment about the use of—the use of these techniques by democracies—by democratic states?

Mr. Huxley: Well, you are a lot more pessimistic than I am {general hilarity}, but maybe your pessimism is justified. I mean, this is the awful fact that remains, that when techniques have been discovered, sooner or later they tend to be applied {general hilarity}. And in these techniques where the object of application is the human being, you are obviously up against the most dangerous situation. And what will be the temptation for those in power? I mean, after all we pray regularly not to be let into temptation, and this is a very profound and important prayer. I mean, experience certainly shows that if we are tempted long enough and strongly enough, we almost invariably succumb. And the whole process of setting up a decent society is essentially setting up a society in which temptations to abuse power shall be reduced to a minimum. But these new techniques, I think, do constitute a series of very powerful temptations, which, to those in authority, maybe—finally turn out to be irresistible. I hope not but I think what you say is—is something which we have to think about. I mean, this might be applied with justification, as you say, in the highest patriotic and moral terms, even in democratic societies. I trust not, but one never knows, particularly under conditions of extreme military stress.

Mr. Brenner: It would appear so, that the type of dictatorship, which you have outlined for us here today, in more detail than in the Brave New World, would tend to be a self perpetrating unless there's a rise such as a sharp social crisis as to disrupt the pattern of authority and break the whole which has been passed on from one generation to the other in these terms. But it would appear that the type of social crisis involved in large scale warfare—whether it be nuclear warfare or otherwise—with the type of crisis involved in widespread famine etc. would tend to disrupt this pattern of dictatorship. So, therefore, would you say that it is necessary to have a high degree of social stability in terms of economic conditions, in terms of world peace, before a dictatorship of the sort that you have described for us would be able to really imprint itself upon a population?

Mr. Huxley: This I think is a very important. I mean, I think it is obvious that such a dictatorship—

11 The 'wonderdrug' of The Brave New World.

12 The breakdown of social bonds between an individual and the community.

if it is going to survive—would have to guarantee the adequate food supplies. I mean, I think—and whether it could in fact do this while the kind of international tensions, whether we can expect a long lasting dictatorship within the context of nationalism, I don't know, I don't think so. I think we can expect dictatorships to arise, but not long lasting ones. I mean, I think that even the best organized dictatorship within the context of nationalism is likely, as you say, to lead to break itself down, because one side of the paranoid state of mind will lead it into conflict, which will of course destroy it—finally destroy it. I mean, this is a very important point, and then of course another point, which was made by sir Charles Darwin (1809–1882) in his book 'The Next Million Years', which I think was one which, in different terms, I envisaged in Brave New World, I mean, he points out that the human species is still a wild species, it has never been domesticated. I mean, a domesticated species is one, which has been tamed by an other species—until we get an invasion from Mars, we shall not be tamed by an other species. All we can do is to try to tame ourselves, that an oligarchy tries to tame ourselves, but the oligarchy still remains wild. I mean, however much it succeeded in taming and domesticating the rest of the race, it must remain wild, and this was the—part of the fable, the dramatic part of the fable of Brave New World, is that the people in the upper hierarchy, who are not ruthlessly conditioned, could break down. And, I mean, this Charles Darwin insists—that because man is Wild, he can never expect to domesticate himself, because the people on top will always be undomesticated and will sooner or later always run wild. I think there's a good deal to be said for this point of view in regard to the permanence of any dictatorship.

Mr. Post: Yes, I have a question: I am worried about the relationship that seems to exist between cost, consent and control. If a government wants to control its people, well of course its job will be easier if they are more willing to consent, and the job will be correspondingly more costly if the corresponding consent isn't there. Could you make a few remarks about the economic feasibility of introducing biological controls of the sort you've talked about?

Mr. Huxley: I don't know. I mean, wouldn't it—I would have thought that in some ways it would be cheaper than maintaining very large security forces and concentration camps and so on. I mean, just as in asylums, chemical control is a great deal simpler and cheaper than physical control. I mean, the bad old days of strait jackets and manacles and so on, required quite a lot of people to handle the insane, whereas the tranquilizers seem to require much fewer. I mean, you can get equal results with simpler and certainly pleasanter means. I have no idea of the actual cost situation, but it seems to me that it might actually be cheaper, I don't know.

Mr. Brenner: I see that some of you are leaving for your 4 o'clock classes, and I would give you the opportunity to leave now. If Mr. Huxley would be willing, we might be able to entertain some questions from the floor for a few moments, what do you say?

Mr. Huxley: Certainty yes.

Mr. Brenner All right. Those of you who are obliged to leave now, please <inaudible>.

Mr. Huxley: I apologize having gone on so long.

Mr. Brenner: Oh no, that fine, I am sure they much prefer to hear you discuss these questions than whatever we might be able to stow up. I hope you are not finding it uncomfortably warm in here?

Mr. Huxley: Well, it's getting a little warm, isn't it, this seems to be a completely window-less hall,

doesn't it.

Mr. Brenner: It's part of the conditioning process, I'm sure.

Mr. Huxley: Is there any means of ventilation in this hall? I see one door there—

<Someone comes up shortly to discuss a practical matter about a 'Tuesday meeting'.>

Mr. Brenner: I think there is some ventilation. Ventilation never seems to be able to meet the demands actually required.

Mr. Brenner: Wasn't the conference at Santa Barbara discussing some of these rather new technologies, some new drugs and—

Mr. Huxley: No, well, they were mainly discussing—I mean there was a lot about the problem of bringing technology to the underdeveloped countries, they had lot of, they had lot of people from the United Nations there, very able men. There was a Vietnamese called Vu Van Thai (1919-??)¹³, charming man, he spoke English with a strong french accent, cause he'd learned his economics in Paris, and he was very interesting. I mean, he said: 'I'm speaking to you like a rat with electrodes in my brain, cause I speak from the inside, I'm not one of the experimenters on the outside.' And he was very interesting, about it, I mean, about the trouble—difficulties, that when you do introduce, say, one area of highly evolved technique into one of these backward countries, you create an enormous gap between the people who run this thing and profit by it, and the mass of the population. I mean, a gap which is just as serious as the gap between the have-nots in the underdeveloped nations as a whole, and those who—and the haves in the developed. And his conclusion—what he was saying was, that we must have an adaptation of technique, which shall be suitable for these people and not try to bring in what you have already, but he says very little work has been done in this field. And there were a number of—I mean, there were several very able people, Lord Ritchie Calder (1906–1982)¹⁴—at the University of Edinburgh—and Arthur <E.> Goldschmidt (1910–2000)¹⁵, who is the director of special services in the United Nations. We had some extremely good talks.

Mr. Brenner: Well I have one question here, which is—Well this is essentially the question which Mr. Huxley address himself to in his last statements: How will control over the techniques be transmitted from one group to an other. Apparently to find out; how do they control these techniques via transmitted—from one elite—one generational elite to an other, would you wish to comment further on this question? I know you did just speak to it, just before.

Mr. Huxley: Uh, well I don't think so, I mean, I do think there will clearly be a difficulty. I mean, there is always a difficulty in transferring power. I mean, after all the—hence the constitutions—written constitutions such as in the United States, or hereditary monarchy which—in which you've got de facto power being 'de jure' in the possibility of passing power on, without much hitch from one generation to an other. It may be that in a thoroughly well controlled dictatorship, the problem

13 Economic and financial adviser to the President of the Republic of Togo under the United Nations technical assistance program. Later to become a consultant for RAND

14 Professor of International Relations, University of Edinburgh, 1961–67. Founding member of the Campaign for Nuclear Disarmament.

15 Director for Special Fund Activities, Department of Economic and Social Affairs, The United Nations.

of power at the top, the struggle for power would not take place. But even there, I mean, simply because, again, because the oligarchy is itself not subjected to the extremes of conditioning, because it must retain a certain freedom in order to be able to make adequate decisions, that maybe the struggle for power would always remain a great problem, as it has been throughout history, except where you have had written constitution or acceptable monarchies.

Mr. Brenner: Yes?

Male: Uh, Dr. Huxley, would you, in your view—comment on the view that precisely the American society or western democracy is particularly susceptible to this type of Brave New World for the following reason: That our society is conditioned to adhere to a big degree of social conformity; that any creative stress, this idea of conformity is further pushed, and consequently making it much easier to develop these techniques and that it seems that politically, the extremities—there's a growing feeling, that we have to do away with extremities, we have to keep on going the central path. And this would seem to me to make this much easier for a type of dictatorship, as you said, to slowly using the mass media that we are developing, to mold the population. Plus the factor, that concern from the other types of societies, you have less inhibition about the brutal struggle from power within the top of the hierarchy, whereas here, there would be some type of an inhibition, due to the so called legal process, that has developed, which would keep man from then finally attaching the leaders.

Mr. Huxley: Well, the—this business about conformity, I just don't know, it seems extremely difficult—certainly for me to judge—whether there is a higher degree of conformity here and now than there has been in other places and in the past. I mean, I would have thought the tendency towards conformity was to some extent offset by the enormous differentiation of function in a modern society. I mean, nothing could be less homogeneous in function than a complex modern society. I mean, people are doing extraordinarily different things. And although there may be a pressure to conformity in the suburbs, so to speak, or at home, there does seem considerable pressure to non-conformity or to differentiation, in the functional life of people. I mean, I have no idea to what extent one offsets the other, and whether the conforming drive is stronger than the drive towards differentiation. I just don't know the answer to this. I mean, I read about the high degree of conformity, and of course one does see that certainly as compared with the 19th century, this society does seem to be more conformist. I mean, if one reads the history of the Utopian colonies which were set up during the 19th century, this is really extravagant. I mean, it is inconceivable to think of anything like the Oneida Community or Brook Farm, even being set up today. I mean, this would be so outrageous that it would be impossible to imagine. And yet in these Victorian days, there was this freedom to make experiments—social experiments of the wildest character. Again, exactly what this means and exactly what the significance is for us and for the future, I don't really know. I mean, I just feel so incapable of really understanding the unutterably odd-facts of real life. I mean, I think one very often just have to accept them, there they are, and what really they mean, I don't know. I mean, perhaps this is one of the charms of history; that one never really knows what it means.

Mr. Brenner: There's a gentleman back there?

Audience: Mr. Huxley, there are certain—look, you have always been interested in the religions ideas or in studying mysticism. There are certain problems that—indications that I know of, out of the use of artificial means on human beings, Uh, would you care to comment on this?

Mr. Huxley: Well, this, I mean, this is finally related to the whole mind-body problem. I mean, what—we still don't know very much about the relation of mind and body. I mean we know, clearly, that they are related to one another very closely, but exactly how electro-chemical events in the central nervous system turn in to the g-minor quartet of <Wolfgang Amadeus> Mozart (1756–1791), we really haven't the faintest idea. I mean, I don't think we have any more idea of it than <Thomas> Aquinas (1225–1274) or Aristotle (384–322). I mean, all that we can say is that it happens, and we do know a good deal more about the nature of the electrical and the chemical events. But again, what the bridge is, and whether it's enough to say, like the neutral monists, that the two aspects—the mental and the physical—are merely the same thing seen from different sites? Again I don't know, I mean even then, how can the same thing look so profoundly different, something I don't understand. And in relation to the mystical experience, I mean clearly this is correlated with electro-chemical states within the central nervous system, and I would be all for studying these states. I mean, I think it's exceedingly important we should know about it. I mean, I can imagine a whole branch of science, which should be called Neuro-Theology or Myco-Mysticism {general hilarity}. I mean, this sounds funny, but nevertheless it's—we have to be able to speak in the same kind of language about the two aspects of any of these experiences; the neurological and the subjective. And then, I suppose, on the philosophical level, we have to make the decision which Henry—William James (1842–1910) posed for us, I mean he says perfectly obvious that the mind is a function of the nervous system, but is it a productive function or is it a transmissive function? I mean, it does, as <Pierre> Cabanis (1757–1808) says, in the beginning of the 19th century; does the brain secrete thoughts as the liver secretes bile? Or is it some kind of valve as James himself, I think, thought of this, certainly as <Henri-Louis> Bergson (1859–1941) thought, through which a pre-existent mental element finds access into the human being. I mean Bergson's view was that of course it was a kind of reducing valve, which permitted only those aspects of universal contentiousness which were useful to our survival as animals on the surface of the planet, and as social creatures within a society to come through. I don't know. As James says; both points of view are quite difficult from a philosophical point of view to justify, but the transmissive view is no more difficult than the productive view. And perhaps he is right. I think that my own view is that on the whole, that he and Bergson were nearer the truth than Cabanis, but I don't know.

Mr. Brenner: This gentleman in the white shirt there?

Male: Dr. Huxley, would you care to comment on Sir Julian Huxley's views on artificial insemination, donation?

Mr. Huxley: Well, uh, I don't know that I know his views exactly? {general hilarity, applause}

Mr. Brenner: You've got to clarify them for us.

Male: Yeah. I think he thinks, along with a doctor Hermann <Joseph> Muller (1890–1967) of Indiana University here in The United States. I think that genetic—we can genetically improve the human race, by adopting amongst the population the practice of artificial insemination, using the sperm of intelligent individuals. And I don't know how he determines how these individuals are to be chosen. But I was just wondering if you were familiar with this view?

Mr. Huxley: Well, I mean, this is, of course, the whole problem of eugenics. I mean, if one knew how to apply eugenic principals, I think unquestionably one could improve the average quality of the

human race. And, I mean, there is some evidence, as <Cyril> Burt (1883–1971) pointed out a long time ago, and as the Meadows¹⁶ pointed out more recently, that there is some evidence that there is a slight decline of average I.Q. And this certainly could be remedied, but of course, as you say, the problem is to choose who. I mean, I can perfectly imagine, that if the cold war goes on for a very long time, that side, which first starts artificial insemination for the reproduction of people with greater talent in the psychical sciences will win. And I read a paper the other day, by—I forget who—a biologist at the University of California at Santa Barbara, it was an amusing paper, but, I mean, it had quite interesting and serious aspects to it, on sort of hypothetical cold war action on the part of the dictatorial powers who were able to make use of eugenics in ways which would not—as this authors name, I cannot now remember—in ways which were not necessarily very tyrannical, because after all the woman would be allowed to marry whomever she liked, provided she had the children by selected fathers outside the relationship. So that, I mean, there would be—the actual personal relationships between husband and wife would not be modified seriously. But, I mean, this, as I say, was a fantasy, but again, it looked like a fantasy, which could, quite likely, come true, and could, as the geneticists, I think, have all agreed, could certainly lead to considerable results. Of course on—for eugenics to take place on any rapid way, you would have to be able to control, not merely the male genetic factors, but the female, which is, of course, much more difficult, but not impossible, I imagine?

Mr. Brenner. I have one written question here, I'd like to read out to us here: Now, the population explosion is a grave danger to mankind, yet the right to bear children is a right of free will. The only apparent way to stem this explosion is by some large scale kind of conditioning or external coercion. And this is also a grave danger. Is there any way out of this dilemma?

Mr. Huxley: Well the way out of the dilemma surely has been pointed out in—in most countries of the west, where people voluntarily have limited the size of families. I mean, this has happened without any coercion, unless you call the desire to have a good economic life, and to bring up your children well a coercion. But I mean, this has in fact occurred. And, I mean, in this country, after having reached a low during the depression, the birthrate happen to have gone up. But, I mean, the point is, that the control of the size of families is now completely voluntary here. More or less completely voluntary. And—which makes it profoundly different from the—from the people in the underdeveloped societies, who are still going on producing 10 children because the habit persists; that in order for 3 children to survive, you have to produce 10. But now, if you produce 10 children, 7 survive, because of the elementary public health precautions, which have been brought in. Hence, of course, the enormous sudden increase—the death rate, which used to be in the upper thirties, as was the birthrate, has now fallen in many of these countries to 15, 12 and even 10, so naturally there's an enormous increase. But it is certainly going to take some time to get people to change their habits. I mean, psychological inertia is much more powerful than physical inertia. I mean, it is much easier to push a 10 ton truck than a human being.

Mr. Brenner: Mr. Post has one further question here:

Mr. Post: You've spoken of the ends to which drugs should not be devoted, such as increasing conformity, making men more content with what is actually an intolerable situation, securing the power of a small elite, and so on. To what ends do you think these drugs should be devoted, granted that we have them?

16 Couple Donella (1941–2001) and Dennis L. (1942–) Meadows. Later infamous for 'The Limits to Growth', 1972.

Mr. Huxley: Well, I mean, I think therapeutically some of them are very valuable. I think, already, for example, some of the so called psychic energizers have done a great deal in the mental field. I mean, the—I understand from Dr. Nathan <S.> Kline (1916–1983), for example, that in very many cases you can use some of these psychic energizers instead of the electroshock-therapy. And people say that electroshock-therapy doesn't do any harm, but I cannot believe that partial electrocution is good for anybody. And it seems to me a very good thing, that if you can get people on a maintenance dose to get them out of these awful catatonic and depressed conditions, which you seem to be able to do. And therefore, there are many people, it seems to me, outside institutions, who have tendencies in the same direction, which I think a genuine psychic energizer might be—which could be used without harm to people—would be of immense value. There was even—it was stated a few years ago, I remember, that the Russians had a five year plan for increasing mental efficiency by chemical means. I don't know whether this has gone on, and what they've discovered, but it's, I would think that it's probably on the cards, that you could increase the span of attention, the amount of time you could concentrate on things, the power of observation and so on, by chemicals as well as by educational means. I mean, I think that there are a number of probably quite good things you could do. And then again, in the case of these very strange substances like psilocybin (mushroom) and lysergic acid (LSD), I think there's a great deal to be said for doing what William James talked about, of getting people to realize that their ordinary, sort of common sense view of the world is not the only view, that the universe they inhabit is not the only possible universe, and that there are other very strange universes, which some people spontaneously inhabit. I mean a man like William Blacup is the inhabitant of an extremely different universe from that which most people inhabit. And I think, it's probably very wholesome for people to be permitted to realize this fact; to perceive that the world of the mind is immensely large, and that there are these very strange and extraordinary areas in them. And there are plenty of cases in the literature where these kind of experiences have produced a kind of conversion. The work which has been done at Harvard now, by <Timothy> Leary (1920–1996) in the local prisons in Boston. Very interesting sort of a series of extraordinary conversion experiences by hardened criminals have emerged from this. And here again, I mean, we don't know enough about the subject yet, but there are may be possibilities of very great importance here, of removing obstacles. I mean, the justification was stated by Bergson years ago, when he was defending William James against his use of nitrous oxide and a number of fellow philosophers thought this was infradig; that an eminent philosopher should resort to these chemical means, which enable him—and James remarked that only under nitrous oxide could he understand what <G. W. F.> Hegel (1770–1831) meant {general hilarity}. Bergson said that it must be realized that the experiences which Mr. James described are not caused by the gas; the gas is merely the occasion, the gas is—removes certain obstacles, which might have been removed equal well by psychological or psycho-physical means, so called spiritual exercises of the various religions, but that they can also be removed by these chemical means. And if you can do so without doing harm to yourself, so much the better. And incidentally, it's one of the great tragedies, I think, in psychological research, that James, I think in about 1905, made an experiment with Peyote. And as he had a rather weak stomach, all that he got this violent vomiting. He says: “I'm afraid I must take the visions for granted I got only the nausea.” It's an awful pity if he'd had a stronger stomach, we'd have this research beginning 50 years ago, but his weak stomach prevented this and we had to wait for much later to get this thing really going.

Mr. Brenner: All right. Before we close the program, UCLA Graduate Student Association asked me to announce that there will be a meeting of the Graduate Student Association next Tuesday at noon. Now I want to express our appreciation to Mr. Huxley on behalf of all of those who were here for

lest our augmented knowledge restrict our understanding. Thank you very much.

Huxley: Thank You, Thank You. {Applause}