

W: I would like to continue this idea of esthetic interest and appreciation partly because out of my own experience I found that so much of science was taught to me in such an uninteresting, deadening way that it killed much of my interest in science, and I have found from polling students in my classes, that many of them have been driven out of certain fields in science by this lack of esthetic interest and the beauty of the thing. I wonder if you would like to comment on that?

P: Well, I have no experience in teaching other people than scientists. I think that something which we did touch upon earlier is relevant here, namely that science is something which is the fruit of discovery. And the beauty of science consists to a minor extent in its achieved perfection. Any glimpse of the way in which a discovery has come about, which has led to that which we are now teaching as its result, any such glimpse can spark a response of the beauty of that scientific element of that part of science because it then can be seen as the reward of an effort, a creative effort. And that is, of course, its beauty. That is how it was originally discovered. That is why it was discovered; that is why Kepler searched for six years for the laws which are his first and second law. It was because he wanted to eventually witness that beauty. And if you can convey anything of what Koestler has given us in the biography of Kepler which is the masterpiece in his book entitled the Sleep Walkers, if anything of that can be conveyed, if you can possibly bring to the imagination of the pupil what Kepler said was the Aegean stable of Copernicus for whom he had unlimited admiration, if you can see that awful state of affairs with which he was confronted, if you can see the centuries old prejudice against a movement other than the circular movements of planets, or of astronomic bodies of any kind, and then his departure from that, an incredibly successful departure, well,

all that really does contain the beauty. I do not think that the fact that the planets move on elliptic paths and that the radii cover equal areas in equal times can inspire anybody's sense of esthetic beauty. It is not beautiful actually. It is very meager for the mind. It becomes beautiful or can become beautiful, for example, if you manage to understand say quantum mechanics and then you yourself develop it into a direction, or you are guided towards developing it in some new direction, and then you are surprised by this power which was inherent in what you have had already before in a different, in a more limited understanding. In other words, the scientific beauty is a dynamic thing, a characteristic of a dynamic process. A dynamic process either of the discovery of it or the process of gaining an understanding of it, or the process of applying it. Gaining an understanding of it is, of course, the most elementary form and yet extremely effective.

There is a beautiful description by a former professor of physical chemistry, a very famous man at Berkeley. But I cannot now tell you his name. In his series of lectures, which are easy accessible, he described the way in which he arrived at the understanding of relativity. And then he quotes the famous lines of Keats--"and then he felt like a watcher of the skies when a new planet swims into his skin, or like the stout Cortes when with eagle eyes he stood," etc. I cannot quote it all. But this he makes quite plausible. This was written, oh, 30 years ago when the understanding of relativity was not such a great event, particularly not on behalf of the great scientists. But it is always and invariably a culmination of an education that it leads to understanding, and if that is sufficiently dramatic in its arriving to you and the outlook gained by it is sufficiently promising, then you have beauty.

W: In a sense this concept is a communing with nature, isn't it?

P: Yes, I would not accept this without qualification, because it is communing in a particular way. See, the great mystics communed with nature not by understanding it but very often by denying even the most elementary understanding by trying to see things without understanding them, even eliminating the usual normal conceptual recognition of the objects. And they had, of course, an understanding which might be either that of a poet, or that of a divine, of a religious understanding, of seeing the world as a manifestation of God, of seeing it as some other transcendent communication.

W: We mentioned Maslow earlier. Maslow describes in one of his books the idea of, for instance, a mature person who has reached the standpoint of some degree of actualization who can look at something in nature and accept it and be quite enthralled with the beauty of it. Is this quite similar to what we are describing now?

P: Well, I think I would distinguish between theoretical beauty or would include in this case also the beauty of a practical instrument which very often is very beautiful when the moment comes when you understand how it works--even if you just do not understand very well how a watch works, or how, for example, they avoid in the making of a good watch as I have here that it should be affected by changes in temperature, and so on and so forth. All these are very beautiful things in which the solutions abound, but that is somewhat different from the kind of communion which consists in, what is it Shelly says, in removing the, well in removing the common understanding of what one sees, and turning the aspects of its nature into a purely sensory impression which then lends itself to quite novel visionary understandings. I mean, Wordsworth is perhaps the best guide to that, "the visionary gleam."

W: Can this kind of communion, or this kind of insight also give one a great deal of sense into his own being perhaps?

P: Well, I think that is true. I just want to show the Shelly quotation because it is very beautiful, of the cloud of unknowing which is a characteristic description of visionary contemplation. That dates back to the 5th century, and the translation is of course a later one, that translation into English. He says, "Poetry purges from our inward sight the film of familiarity which obscures from us the wonder of our being." Now this shows quite clearly that that which is commonly understood, the film of familiarity is misleading, and Zen also emphasizes that. It is misleading us so far as visionary insight is concerned. It is different from a theoretical one.

W: Yes, I have a little trouble conveying my feelings on this because I have not really thought about it in great detail, yet I know from my own experience that I get a tremendous amount of pleasure out of appreciating say nature and the things of nature that I have learned to see, and this has a great, in a sense, a therapeutic value also in helping me perhaps to reorient myself. Now, if this is what you are talking about, say in terms of the beauty of science, I can see this. I am not sure yet how I can convey this to students.

P: Well, I do not think it is really the same. You see, the beauty of the starry heavens is from the point of view of science a very limited view of the universe because it only includes, or practically only includes our galaxy which is a very small matter from the point of view of the beauty of the universe in which there are a great many galaxies; and all the problems of cosmology and cosmogony, of the origin of the world, are to be seen on that to us not visible, not visionarily experienced universe of stars. So you see, the difference between the two things. It is rather the difference between a painting and a portrait or a plan or a map. After all, a painting today has very little interest in its informative content, and it's particularly that kind of

information which the modern painter finds irrelevant and disturbing which he wants to cut out, and it is in that information, that information would be an element of that which the scientific view would handle, would then develop into a theoretical view. You can speak of the beauty of a specimen, you see, you can speak of the beauty of a confirmation or of three beauties that is. The beauty of discovery, the beauty of understanding something, which has already been discovered, and the beauty of applying it, in other words of seeing through it, in its light. These are the three aspects of beauty and you have actually as a teacher all three in your scope. I mean obviously you have the possibility of developing some sense of the triumph which was achieved by this discovery and of all the various errors which were preventing it from coming about before the particular genius's discovery and all the rest of it, all the various wonderful and curious features of the way in which such a discovery breaks through very much without our knowledge of what it comprises and what were the grounds on which it breaks through and yet entirely owing to our efforts which is this paradox between growth and effort. Well, all this is alive. And it is alive with a different kind of life than the visionary gleam of Wordsworth.

W: Biology is particularly unique I have found because it is alive and very comprehensive. There is a great opportunity here, I think, to point out many of these things. In other words, I am always intrigued at the activities of say various animals, and this has always been very impressive to me.

P: Well, I think that I could--I see what you say as a bridge between these two things. And I will quote a very distinguished authority in support of what you say as this bridge. Namely Lorenz, who says at one point, and I quoted that I think:..

W: This is Lorenz?

P: Yes, K. Z. Lorenz, not H. A. Lorenz, p. 340. Let's see. There are two Lorenz's. One a famous physicist and the other the master of ethology. And this is the master of ethology. No this is just one of the nonsensical things which he sometimes says, but let's see, p. 348. He says, "I confidently assert that no man, even if he were endowed with a super-human patience, could physically bring himself to stare at fishes, birds, or mammals as persistently as is necessary in order to take stock of the behavior patterns of a species unless his eyes were bound to the object of his observation in that spell-bound gaze which is not motivated by any conscious effort to gain knowledge but by that mysterious charm that the beauty of living creatures works of some of us." Now this is what you have in mind and that is quite legitimate. There is here a link between the two things.

W: I have another question in regard to this same area. In terms of esthetic insight, do you think this is perhaps something one can train students to become more receptive to, or in other words can you....

P: Yes, if you take as your parallel the way in which our generation, anyhow your generation, and to some extent also my own, who were educated to see, say Matisse or see any of the post-impressionists. Even Cezanne was invisible. When he died in 1907 nobody had yet taken notice of him in large parts of the world or in England and in America. In France he was not very well known either but he was already revered by some, and now of course he is, well one just cannot--it is just such a simple and uncomplicated charm which we find in his canvasses that we cannot understand what on earth worried the people at the time. And ^{the} same of Renoir, I mean Renoir was, of course, remonstrant. Renoir himself talked to Matisse. Matisse showed him some of his

paintings, and Matisse said, "One cannot use black like that; that is not painting." In other words, he did not believe that using black was a genuine way of painting. He thought that Matisse in spite of doing everything wrong was perhaps not a bad painter, but that was as far as he wanted to go. So you have that, and then you have Picasso and so on, all of whom have been taught to us, and there is a passage here again quoted. I am not quoting myself, but I do like to quote the people I do quote, by--what is the name of the great French novelist of, I am very bad at remembering names--of the early twentieth century. You will find a long quotation here about the way in which the painter acts like a person who operates on our eyes and the operation is by no means--can be rather painful, and then when we open our eyes we see things which we have never seen before. I will find that quotation later for you. So this is certainly one of the fundamental facts of our culture at this stage that we have been taught to see things within a very short time which we had not seen before. So clearly there is every reason to assume that the seeing of coherence and beauty is something which is teachable and is being taught all the time, and particularly in this century on an enormous scale.

W: I think this then would get us into this concept you have of exemplars, wouldn't it, in that you feel that by the use of exemplars much of this information can be conveyed?

P: Yes, I think that is how it happens. There was in 1913 an exhibition here in this country, a modern exhibition, of painting, the Armory exhibition. And this Armory show, I think it was called, was quite universally decried, even by those who as pioneers had brought it here. They were talking about it contemptuously, and within less than a decade the attitude of large parts of the public was completely changed in this respect.

W: On this same topic, I know I have had a bit of confusion as I have thought about this term of exemplars and applying this to the area of morals. Now one of the problems you get into here is that what is usually held up as exemplary behavior, particularly on the part of school teachers, is middle class exemplars. How do you get around this?

P: I do not think that is very effective although it should not be underestimated. I do think that the effects of literature and of the stage in particular, are greater than those of any explicit teaching. We live very largely--I remember as a child I relived almost every fiction which I read. And these are the things which along with history impress us most deeply, but we are also the products to a very large extent of the philosophy which has served commonly for the interpretation of human affairs. Now I have in mind reductionism of various kinds. And that has its various curious consequences which I could not easily describe in a few words. Essentially I would try to refer to what I have described as moral inversion, that is, a position granted to honesty, intellectual honesty, which transcends and overrules everything else, and this is, I think, very much present in our youth today. You will find that in Berkeley they are founding a league for the, I think the dirty language league. Well, what do they mean? They mean that the concealment of these terms which are commonly known is a kind of dishonesty which they find unbearable. Now I do not say that it is very wise or effective way of trying to break this feeling. In fact, I do not think that feeling amounts to very much sense. But it is a symptom of a culture which is almost wholly dominated in its literature by this protest against the conventions which are all deemed to be dishonest. Because anything that is conventional is to that extent dishonest, because it is not our own genuine and spontaneous

choice that we express by following the convention, but we are submitting to something which we do only to, for secondary purposes, to conform with other people. So we have had almost a century of this experiment pursued in Russian literature, in German literature, in French literature, and ultimately it has come now to England and America--just about a half century ago, not quite half a century ago. So that this question of ethical foundations is in a paradoxical situation today because there is a strong feeling that all ethical, all moral exemplars, all moral ideas are dubious, and are likely to be hollow, and pretending to be ineffectual and not honestly accepted ideas. And this has discolored our whole culture, it is ubiquitous. I do not say that it is predominant; it is not predominant. It is pervasive, but not predominant in the sense that people's actions are very largely independent of it. They just go on acting traditionally, but they are torn between these two pursuits of perfection. One is this intellectual honesty which can find its perfection in complete nihilism, and the other is very much more common place, but on the whole a more effective pursuit of decency which they just recognize as everybody does. But it is not a very happy condition. You know my essay on Beyond Nihilism?

W: Yes, I have it.

P: Well, that is the first time I have developed it. Well, I have also developed it here a bit, of the theory of moral inversion which is briefly the idea which Dostoyevsky put forth in his Raskolnikov (Crime and Punishment) that evil is on the whole more likely to be honest than good. And therefore to act in a sense which is usually considered as evil is a safeguard and the only effective safeguard against hypocrisy. That is quite briefly and quite simply the theory of immoralism. But it would be a really great mistake to

think that anybody can possibly live by this, strictly speaking. Of course, nobody does but nevertheless it has a tremendous influence.

W: You mentioned this noon, you said something about the fact that you were concerned about existentialism in education. Would you like to comment on that more fully?

P: Well, one could say that if one took the argument of the kind of existentialism which Nietzsche and Sartre have adopted which requires complete originality, and independence in order to achieve authenticity of beliefs, if one took that literally then all education would be condemned because so far as it is not completely neutral, and which of course does not exist but that perhaps they overlooked, so far as it is not completely neutral it is a value judgment which is transmitted in a way which by the very nature of its source, namely of being taught, is condemned as being invalid, and worse than that, corrupt. Now here is the Marcel Proust quotation: If you want it, it is on page 200 of Personal Knowledge and I will read only a few lines. "The creative painter, the creative writer proceeds like the eye specialists. The treatment with the help of their paintings, their writings is not always pleasant. When the treatment is concluded they tell us you can look now, and thus the world which has not been created only once but is recreated every time a new artist emerges, appears to us perfectly comprehensible--so very different from the old." It is very beautiful. It is not the whole quotation.

W: On this concept of exemplars again. How do you see exemplars operating in science education?

P: I am not quite sure that I use the word exemplar. I do not know what you have in mind here. Of course, exemplars are very important for, oh yes,

perhaps I have used it for teaching say diagnostics, or descriptive botany, or zoology. That is what you have in mind, yes. Or for that matter, there are quite a number of subjects, descriptive sciences which of course pervade more or less everything, in a way. And you ask now, if I may ask you to remind me of your question.

W: Are there somethings in science that you would regard as exemplars, for instance, that should be held up as things that take precedence, for instance.

P: I do not know; probably I would, if I think about it. You see I have written recently an essay which is not yet published on "What did Copernicus discover?" Now this is a story which I would think is extremely interesting from the point of view of understanding what science was about and is about. I think that Copernicus for the first time proposed a metaphysical proposition, a metaphysical idea, namely that by observation one can discover some basic reality which is also of great importance for us as human beings. Of course, it completely changes our relation to the universe. Well, that was a new idea but it has got lost since then again. That is what I would say is an essay which tries to convey something which I would teach in a school. I think it could be understood. It would move, as I think any such teaching must move, to the extent to which it wants to reach into the depth of the student, and engage him in what Rogers calls a living knowledge. It must move along philosophical lines, about the nature of reality, about the nature of thought, about the nature of thought reaching out to reality, about the nature of reality as it was conceived before Copernicus and why he was attacked by people who were not so very much concerned really with his religious inferences or the bearing of religious interests of his discoveries, who just did not have

this conception of reality which he was trying to introduce because to the Medieval mind and all the way back to Aristotle and Plato reality was something which was necessary and reasonable in itself, intrinsically. This reality could be sensed and finally actually identified and pinned down purely by looking at it irrespective of arguing that it is necessary or in any way distinctive in being other than, as they used to say contingent, in being other than that; it is there and that is all you see. Now Copernicus did not actually present it that way. He did try to show that God would have to create the system of planets like that because it would be better in one way or another. But it was a feeble effort and it did not really make much difference for his argument. He actually did base his argument on kinds of coherence, on kinds of harmonies which were of a number of kind, which had not ever before been relied upon for identifying reality, and that is the foundation of science.

W: As long as you are on this topic would you explain your concept of reality?

P: Oh yes, reality I define in a way that has not been done before and that is quite essential. It goes right through everything. Reality first of all cannot be defined except within the context of belief. That is, reality does not exist for anybody who looks at it with a doubtful eye. The concept of reality exists within the context of a commitment. When we believe that something is real, that we can define. When we believe that something is real then we believe that it will yet manifest itself in the future in indeterminate ways, and confirm its existence.

W: I am a bit confused now as to the description you have about the objective realm. Can you comment on this?

P: I have in this conversation used the term objective?

W: No, I think in Personal Knowledge you have reference to this, or in one of ^{your} papers. What is your concept of an objective realm?

P: Well, objective, oh yes indeed--I have the conception of, well let's say not objectivity--but take a term which is kindred and could replace it-- universality. You see, anything that has a claim to universality has a claim to objectivity. That is everybody ought to recognize it not only because it is an object but because of a more general characteristic that it has made a claim to universality. And this is interwoven with the definition of reality. To commit oneself to a belief in reality is to commit oneself also to a belief in a claim to universality because what we are saying about reality is according to our own profession of its reality controlled by its reality. We are saying that this table is here because I think that the table is real, or I am saying that "the planets move around the sun" is an objective statement because I believe that they are really moving around the sun. So that these two conceptions are mutually closely allied and mutually determined and support each other, and are variations on the same subject, really.

W: You speak of intimations; you use this word.

P: Yes, that is quite essential. I think that I may have said it already earlier in our conversation although perhaps not in this part which was taped, namely that unless we accept it as a fact that we have, not only we human beings, but we human beings at any rate, have the power of sensing gradients of coherence, that is unless one has the power of sensing growing points, of sensing the presence of a hidden reality which we might explore at some point, unless we have this capacity, (which we are constantly urging in our students for them to exercise an effort in that direction because they are confident that they will understand what is there because there is something there) unless this faculty therefore is recognized there is no chance of making sense either of learning, or of discovery, or of creative action, or for that matter of reality. Because reality itself, as I have defined it a moment ago, is something which when it is believed in, implies a claim in our capacity in knowing, in looking beyond, in sensing the presence of consequences which are not yet known, which are perhaps yet unthinkable, but which we attribute to something, particularly to some theoretical subject, because we say this is real. This is really so, and therefore, immediately a scientist would look around, "Is there something which one could further expect to find?" But sometimes it may take centuries to find it.

W: But this brings me to another question, a confused point on my part. If we keep saying there are intimations, how far can we carry that? Do we eventually arrive at an ultimate point here?

P: No. That I do not think. You see precisely because the world is real therefore the world is a universe of intimations. Let us put it this way. To look at the world is to accept or pursue or see or commit oneself to a universe of intimations. This is an interesting point. It is usually said that there is no point in asking "Is the world real or not?" But if one accepts what I have

just tried to convey there is a very clear way of saying what we mean by the world being real. We mean by the world being real that we attribute to the experiences which are confronting us this capacity of yet manifesting themselves in the future in indeterminate and perhaps yet unthinkable ways--which we could possibly deny. In fact, I am sure that there are states of mind or of pathological states of mind in which this is absent, and even visionary forms of seeing the world in which it is absent.

W: Then this would rule out a Platonic concept, on your part?

P: Well, I am not quite sure about the question.

W: In other words, no realm back of this?

P: I see. The Platonic concept, I think, was a wrong answer to the openness of the world--and which is probably what you indicated just now. You see this kind of work which I have done is so difficult to accept, and we will find that others will probably pursue the same line and even so they will be found difficult to find acceptance for some time to come because it places us in an open and drafty position, you see. There is nothing we can rely on entirely outside ourselves. We are all the time involved and that's not a comfortable thing. There are two ways of getting away from this. One is the Positivist's way to say "Well there are evidences outside and that is enough for us." Now that is wrong because there is no such thing. And the other is the Existentialist's way--to say that "It's only we who decide all our values apart from trivial things which are factual, which somehow are given." Well that unfortunately leads to complete disaster if one would take it literally. Now by these two ways we could avoid this kind of drafty position, but they are not sound.

W: As long as we are on this topic of reality, I think it is MacLeish who came up with this concept. He said, "Reality is what we feel it to be as well as what we perceive it to be through our sense perception."

P: Yes, that is fine--not very clear but it is in the right direction.

MacLeish the poet?

W: Then would you comment on the concept of nonverbal knowledge?

P: Yes, well the whole technical distinction of the line I am pursuing is that I completely reject the absurd idea of ultimately making all knowledge explicit because it is self-contradictory. To say something could be written on the blackboard with all the formulas set out would be completely meaningless because it would lack anything on which it bears and also anybody who would establish that bearing. In other words, it is also necessarily incomplete. So that the idea of completely explicit world knowledge is absurd, for on the other hand, there is a whole region or area of knowledge which is not explicit at all, or hardly made explicit. One can only hint at it, and much of it one cannot even hint at because one does not know much about it sufficiently. So I think that what will be necessary, what will be needed, is to go back all the way through the last two or three thousand years and tick off everywhere what went wrong when it was assumed, and nobody has effectively denied this assumption so far before, that in principle everything can be said effectively and explicitly. It is not the case! There is no reason why it should be the case, but you see language is such a marvelous achievement that it is not surprising that people thought that it could do everything.

W: Would you compare this idea of nonverbal with tacit knowledge?

P: I do not think that I would. Verbal, of course, would limit it. But if you say nonformalized I would say yes, it is the same, i.e., nonformalized. That is to make something explicit can be done in many ways. Or at any rate there are explications, or there are formulations in terms of maps or graphs or of numbers and so on and so forth without end. Now they are inventing new ones, for example computers, but in all these cases one can say that there is a formal, one can call it a mechanical process, which claims to communicate something about

the world, and these claims are true, but these claims should never be thought to be comprehensive.

W: Now I am not so sure that I am following you. Would you very specifically tell me the difference as you see it between tacit knowledge and this nonformal knowledge?

P: There is no difference. I just use the term tacit knowledge. I could use a different one, but it is the shortest. You see tacit knowledge I have described, i.e., the logic of tacit knowledge, the structure--all my work is really about the structure of tacit knowledge.

W: Some people have perhaps termed this intuition? Would you call it that?

P: Well, intuition comes in now in this paper which I have just here in print in front of me. I have used the term intuition in Science, Faith and Society and later I have not used it; but I have used heuristic vision, or some such thing. And now I come back to intuition because I think I can formulate it better. But you see I do say this intuition I have recognized here is clearly quite different from the supreme immediate knowledge called intuition by Leibnitz or Spinoza or Husserl. It is a skill for guessing with a reasonable chance of guessing right. A skill guided by an innate sensibility to coherence improved by schooling. That is something quite different from--it was a fantastically misleading thing to assume that if you cannot demonstrate something by explicit inference, which was, of course, the idea, then it must be something either which we disregard all together because there is nothing in it, or else it must be something which we know by intuition, that is we start with intuition. This was the idealistic form of philosophy which was a deductive philosophy. You start by intuiting something which is indubitable, and then derive from it by argument the necessary elements of the world. Well, I think that it is quite wrong. When you come to structure tacit knowledge you have an intuition which is entirely

different from this because it is essentially fallible and it does not come just like that, effortlessly. It comes, it is very often the fruit of a very strenuous effort; and it is much more like perception than pure intuition. But perception was also misrepresented for centuries. In that respect Dewey has some merit because he realized that perception was really an action, the result of an action. I am sure that there is a great deal in what Dewey said that is marvelous, but I just cannot read him.

W: As long as we are on the concepts of education, I would like to ask you a few more questions before we move to formal philosophy. You have an essay in Personal Knowledge on the educated man. Would you like to comment on this and indicate any changes you have made in this approach since then?

P: Yes, well at the time I thought that education or being educated was really for me a demonstration of the feeling we may have of possessing a mastery which is intrinsically indeterminate, because mastery consists not in being able to turn a wheel but in dealing with situations of an unexpected kind. And to be educated was perhaps the supreme mastery of a great many things, which would neither substantiate or enumerate or even identify, and also of the skill of using them in a way which cannot be completely ever defined in advance. Well, that was the general conception which I used there, and as to the kind of education, or educated man, which I look forward to, I have directly told you my views about that by sketching very crudely the outlines of a future education which would be philosophic.

W: This interests me because I think as I read the work of Rogers and Maslow and some of the other men in this area, I think sometimes they give the impression that the educated man is one who has reached the point of self-acceptance.

P: Well, that is very important. I am glad you mention it, you see, because I have told you quite before we went on this tape that I feel a defect in my work. There is something missing, missing precisely the kind of value system, or bunch of values, perhaps would come closer to the facts, which these Masters have brought out. I am not....

W: Yes, because this, as I look at it, this is very close to this concept of understanding. One can know a great deal about science and have absolutely no sense of a greater understanding of either himself or perhaps the whole body of knowledge of our surroundings.

P: Well, I do not think the two come together you know. I mean the knowledge of the things outside and the understanding of oneself. I do think they are different things, not perhaps altogether of a different structure, but I would suspect to find self-understanding of a high grade in very primitive people and this self-understanding to be endangered by sophistication, and sometimes by real further development. Self-understanding is a term which Rogers uses and I am very happy to see it and try to assimilate it.

W: This brings to mind the question I have here also in terms of this item of sophistication. I think many times, in our extreme specialization, using say a scientist as an example, he becomes very alienated in both his work and his approach to those around him. Do you have any ideas as to how this might perhaps be avoided? Undoubtedly he needs to specialize a great deal if he is to move on into the frontiers of his work.

P: Yes, well, I would distinguish here between what might be considered to be a tragic deformation due to an extreme commitment. After all, if somebody becomes a monk, obviously he becomes alienated from his family because he is suppose to be cut off from it. Now that is not considered to be an alienation in the sense in which it is considered critically because it is so obviously an alienation. Now I think that any such passionate commitment and pursuit for many years has such consequences, and I do not know whether I deplore it. It might be a sacrifice which is inevitable. Otherwise I think that alienation in the sense in which it is debilitating and confusing and even degrading perhaps is a cultural phenomena. It is a reflection of the fundamental conception of

reality and of the loss of meaning in the universe, loss of meaning consequently of our own lives. All of which may be on the surface but very often penetrates beyond the surface into us. We are living theoretically in a completely absurd situation. None of our main convictions have any foundations in our philosophic grounds. Now they go on like this with this duality. We are constantly professing philosophic interpretations of contemporary events, of human life and so on and so forth, which we cannot possibly believe because nobody can. But we have not got a choice. Fundamentally I suppose we still all believe that the world could be reconstructed in terms of an atomic topography. If we would know all the Laplacean knowledge of particles and their forces and their velocities we would know the world. Well, we would know nothing at all. And to have an idea of the world, at any rate one which is not easy to contradict today so far as I can see, which identifies complete ignorance with a complete knowledge is clearly not a very healthy situation. But we get by. I mean we get by because we do not take too seriously the things which we say, and sometimes we do and sometimes we do not. But I think that when we talk about modern alienation perhaps this is really the most important thing and when we come to immoralism, which is a very serious thing, to say, "well the hell with it," I mean, "We want to be quite honest. It is all the same which matters." Well, then we must be criminals.

W: To this extent you would not agree with the existentialists' approach at all, would you?

P: No. Now I do not know, There are existentialists who do not follow that line. Nietzsche and Sartre, and probably a number of others. But the problem of existentialism I quoted here is that we cannot--here I quote H.L.A. Hart, Oxford Lawyer. "He observes rightly that while it can be reasonable to decide that something will be illegal starting tomorrow morning, it is nonsense to decide that something that is immoral today will be morally right starting tomorrow."

"Morality," Hart says, "is immune against deliberate change. And the same holds clearly also for beauty and truth. Allegiance to such standards implies that they are not of our making. The existentialist's dilemma then, namely that we ought to, that our values ought to be of our own making still faces unresolved."