

JL I am very hesitant about joining it. I have very serious reservations about this demand for a 15% growth rate. I think unless that document is justified in much more detail than this it will be thrown out as laughable. I don't know if you have encountered this reaction before, but

MT Yes, we discussed it at the last meeting ad hoc committee, to spell out all the details how 15% came out. The report will be in the

JL Well, I think it can't be done just in those terms. There is a question of how it can possibly be financed, and how it ought to relate to the economic growth of the country, and how long will such growth continue. It's obvious one can demonstrate there will be more scientists than people after n years, and I think it will be parodied and lose its effectiveness unless you're extremely cautious about making that kind of claim. Now, the way in which that number could be used is that, pending the development of a more comprehensive policy about the role of investment in science, that one can take it that it would be possible to absorb a 15% growth rate over the next few years in terms of having the availability of personnel, of the availability of excellent projects to support, and that it would be in the national interest to continue to maintain this kind of growth until we have reached a different posture, different relationship, of science to the other sectors of the society. But without some qualifying language of that kind it is just so easy to parody ~~that~~ and that means it'll just be shrugged off. I have had that discussion with Don Hornig when I complained to him about the problems a year or two ago, and he said, well, we have to find a rate of growth that's acceptable. I just think that's the wrong way to pose the problem, I guess that's really my main objection to it.

Now, let me make some more specific, positive recommendations, although

I feel strongly enough about it I would not sign the report if it has that kind of reference to a guaranteed rate of growth for science.

MT I think we need a tremendous study in this year to get the right answer for this. Even ~~in~~ the New York Academy of Science I think may not be able to do this. We hired a Professor of Economics but he

JL Well, I can understand that, and I think this is a subject -- I think this is a new administration and I think one might put in a proposal that this is worthy of study.

MT That, of course, the government should do, but they haven't done it. If they ask us, we need some manpower to do this.

JL I think a recognition that this is an important problem, that scientists ^{do} do realize that science has to be developed in keeping with the development of the rest of the economy. There is almost a total ignoring of that issue, and all you have to do read Senator Allott's remarks in Science about two weeks ago, and you'll see the kind of thing you're running into. ~~Now~~

Now, I think that there are more important things that need doing. First of all, there is the question of what we are talking about when we are talking about research. He still uses that number \$17 billion, and it makes an enormous difference if you are predicating a growth rate of 15% a year if you are talking about 15% of \$17 billion, or 15% of \$1-1/2 billion, and I think it is very important to get that straightened out. The second point is, and maybe you will have some deviance on this, is that we are talking about the seedcorn--we are talking about protecting the center of advanced research which is in our educational

system, and the distinctions are not so much as to whether research is basic or applied as it is as to whether they contribute to the further education of the country.

MT That we have discussed; why NY Acad Sci. doesn't get much money, because they are only supporting basic research. Congressmen do not understand at all what basic research is.

JL I think it can only be justified in terms of its educational function. I think you do do it, but there's confusion about the amount of money that you are talking about in saying this. My second point is that what needs further study is the relative balance of support between applied work and basic work.

Let me remark that when it comes to financing I think one ought to say there could very well be a fluctuation in the amount of investment in the more applied end of the game; that this is the part that can go up and down with the economy, and that the basic part is the part that ought to have a greater degree of stability since it has such an important generative function with respect to its relationship to education, and in fact, the way in which the current emergency ought to be financed is unquestionably out of defensible applied projects. Now I know you run into political headaches when you do this, but it seems to me completely unjustifiable to have proceeded with the supersonic transport, and I think you can probably name a half-a-dozen others, of this kind, and starve out basic science. The supersonic transport kind of investment can go up and down, depending on how comfortable we feel; it is a project that can be done at different rates, and it isn't going to make all that difference if it's stretched out for one or two years, where it makes an enormous difference in the educational process if you have the sudden turning off of funds. ~~That~~ I don't want to focus on any one applied project

because that's politically dangerous,

JL This is what we're concerned about, and it's a relatively small amount of money. I think the New York Times editorial that I sent back to you was one of the best statements on this point that's come out. It was better than the original hardship announcements of your Town Meeting, which I have to agree, at least as they came out in the press, were hysterical. I think they did the whole ----they drew some attention to this problem, but I think they did more harm than good, in my own opinion.

The second point that I would like to make is that the amplitude of the investment in applied work should reflect social concern for getting those particular results, and I feel, for example, that to talk about a specific growth rate is nonsense. You talk in applied work in terms of what problems you want to solve. It may end up being another billion dollar investment starting fairly suddenly to go into artificial hearts, to give you one particular example, and you can encompass that within a growth rate figure. When you start major new programs they have justifications in and of themselves, and they compete for resources, in manpower and so on with the rest of the programs, but they've got nothing to do with growth rate.

Now, I think there's a point that should be made also; that I feel very strongly that at a private university -- you do mention it, but very late in the report,--and it ought to be I think almost in one of the early stages, in the general summary. The cutbacks in grant funds have come at the same time that private institutions are under very heavy pressure to meet social needs in the community. We feel this very strongly in the Medical School; for example, we are trying to set up a minorities program, and if we had any funds to do it they are under very severe attack because of the cutback in federal support for research and for our other functions. The coincidence of these two happenings

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together makes for an intolerable strain. You do mention that fairly late in the report, but I think it is something that has to be brought forward. The accusation that is being to be leveled against this report and against its authors is that they just are not giving any concern for all of the major upsets in society. All they care about is protecting their own bailiwick, they are acting out of strict self-interest, and I think you must answer that kind of accusation. You must anticipate it.

MT We had a discussion about this last week - Dr. add Dr. Bentley Glass came to our committee. He said the state universities also the same thing as the private universities.

JL I think these problems are general, and I'm really not trying to distinguish the state from the private in this respect; I think that one can say that at the state universities there are state resources that should be called upon for these matters, and that whether or not the university goes into minorities programs can depend on the policy of the legislature. But a private university hasn't even that possibility. We have very fixed resources, there is no one that we can appeal to to try to do this, and we would try to scrape the barrel for the funds for it, but then it happens at the same time as these other cutbacks.

Now, to go back to the distinction of basic from applied. I think the important point is intramural university support is the kind of budget number that we ought to look. There is no justification whatsoever that this segment should be taxed against --that the tax against our credit for doing research in our own laboratories should be connected with the fact that Los Alamos is administered under a university contract, That is not university research. Besides its being mission oriented, it is not done at a university. I am trying to make a separate

distinction, not between basic and applied, but whether it's educationally contributory or not. And that's the core of the money that we're trying to find here, and that's where all the crunch is coming from. And then you're talking about less than a billion dollars that's at stake, and a \$200 million cut in that is an enormous burden. It keeps coming up because we see an allocation of resources to the different states -- California always comes out on the top in terms of federal resources for research and education, and one of the main reasons is that the University of California has the Los Alamos laboratory^{ies} contract, and it has the Livermore laboratories, which have negligible educational function. I presume I've made my point.

Additional points to be made directly to Mrs. Jean Fitzpatrick, who will call.