INTERVIEW with ARTHUR S. BOUGHEY

December 14, 1973

McCULLOCH: Just talk normally, Arthur.

BOUGHEY: I'll talk in a conversational tone.

McCULLOCH: I'm going to ask you all twelve questions, and we might have some extra ones.

BOUGHEY: All right.

McCULLOCH: The first question, Arthur, what attracted you about coming to Irvine?

BOUGHEY: Well, I've had a look at your questions, Sam, and of course I've asked myself this question, and I suppose I acted instinctively, more or less, at the time. I'm a pioneering type (I guess you are), and there is a challenge in pioneering at a university, a most exciting challenge. It's a stimulation to be with a lot of other pioneering types, because you meet more pioneering types around a pioneering university than you do in any other walk of life, and this primarily, I suppose, was the challenge that I saw in UCI. It wasn't the first pioneering challenge I'd had; I had done the same thing twice before with two other universities, and you get set in a pattern of pioneering, I guess.

McCULLOCH: Which were the two universities?

BOUGHEY: Oh, these were what is now the University of Ghana at Tarkwa and what is (I'll have to say, unfortunately, now) the University of Rhodesia, at Salisbury. I must put this on the tape, Sam: I use the word unfortunately because the concept of this university was a very good one, and at the time that I went, I think it was probably the best university of its type in Africa. It was a concept of a multiracial university serving multiracial territories which included what is now Zambia and Malawi and

Rhodesia, as well as some of what were then Trust Territories, and this was a very good idea with very advanced thought, and for about ten years we did a lot of good. And the unfortunate part of it, why one uses this expression, is that it has now retreated to a concept that is somewhat bigoted, an elitists' university serving a much more restricted area under a much more restricted regime of thought. But you're not interested probably in that; you're interested in UCI, which is anything but a bigoted university.

McCULLOCH: But I am interested in the experience you had before. Where did Ed Steinhaus get in touch with you? Were you in Salisbury?

BOUGHEY: Oh, I've traveled in America for quite a little time, mostly on American foundation funds. I had one major tour of universities in America sponsored by Carnegie; I had another one sponsored by Rockefeller, in which my whole family and I were able to come over to the States for six months.

McCULLOCH: Which year was that?

BOUGHEY: Gee, Sam, you're pushing me back, now. I think it had to be about 1961, but I would have to confirm that on the transcript. And I spent, I think, five weeks at Berkeley, and I made a number of friends there--people who had previously been pen acquaintances whom I knew from literature and correspondence. And I spent some time down here at UCLA, as well--in the south, as well as time up in the north. And this, I suppose, is when I began to be known to the sort of people whom one has contacts with in America in my field.

Steinhaus, of course, was looking for somebody with a rather general view of ecology and particularly with an input from the human ecology side, and there were people at the time, of course, with these sorts of qualifications in America, but the universities that had them were making damned sure that they hung onto them, so Steinhaus had a number of people whom he

contacted from within America, but I think, from what I saw of correspondence, he was quite unable to chisel them loose from their campuses, and so Steinhaus had to start looking overseas for people because of this shortage of available people in America, and that's, I suppose, when he thought of me and approached me as to whether I was chiselable.

McCULLOCH: And you were at that time in Rhodesia?

BOUGHEY: I was at that time in Rhodesia, and I was getting disquieted by the way the political developments were going, so I was chiselable.

McCULLOCH: Very good, Arthur. And, once you arrived here, we had those series of meetings, you remember--

BOUGHEY: Well, Sam--

McCULLOCH: Did you come in August?

BOUGHEY: No. You see, this second question I can't answer, because I couldn't get away until--I didn't want to quit until I had come to the end of the academic year in the southern hemisphere.

McCULLOCH: So that's November.

BOUGHEY: Yes, so this pegged me down, and I missed this first series of meetings, although I was appointed at this time.

McCULLOCH: Well, then, we move to the question of your appointments--setting up your program and making your appointments. And the question is, did you find the Universitywide administrative regulations helping you, or hurting you, or did Ed Steinhaus know so much about the University that he could sort of help you over the pitfalls?

BOUGHEY: Well, I've thought about this question, and I would say that I found all the personnel in Academic Affairs and in the intermediate stages before one gets to Academic Affairs most helpful, and I strongly suspect that the ease which I had--because I did have comparative ease in getting appointments--was due, I think, to the quality of the people in these

administrative positions rather than anything intrinsic in the nature of the regulations. I think with these people with this quality and understanding, it wouldn't matter a damn to me what the blasted regulations were. I think that the people managed to utilize the regulations to see that the original Chairmen got the sort of people they wanted, so I would attribute the ease--and I would say it was ease--it was much easier than to get the right sort of appointments than ever it is now.

McCULLOCH: Well, do you think though, Arthur, that it was the exciting new program that you were starting that excited them to want to move?

BOUGHEY: Oh, I see, your question three really refers to the people who are coming.

McCULLOCH: It refers to two things. How did the administration help you? And secondly, when you approached a person, did you have problems in getting them through committees and all those things that we do?

BOUGHEY: Yes. I was really answering the second question that you had, first. As to people--well, in my area (I couldn't speak, of course, to other people's areas, but I would guess they were doing the same thing), we were attracting people who were excited with the possibility of doing something new which they considered ought to be done, without having to fight entrenched traditional interests, and this was felt, as far as my area was concerned, all the way down right to the most junior assistant whom we were considering. They saw the possibility of doing something new without having to fight the old.

McCULLOCH: Well, I know that's how I was able to recruit a number of people. The next question, Arthur, since you didn't have any difficulties in your appointments and since you served your five years as Chairman, toward the end of your five years did you have any problems? I don't think you had any people leave you, did you? You had very little turnover, as I recall.

BOUGHEY: Toward the end of the five years, I had two senior people leave. This was nothing to do with the circumstances at Irvine. These were people who were in the part of the upward mobility process in academia, and I think other people commented on this. At this time, biologists in particular were highly mobile. It was a time of much upward movement in biology as a whole, and one of the senior people who left went to assume a most important function as the head of the second of the international bio programs that were being set up at that time.

McCULLOCH: That's a compliment, really, to you.

BOUGHEY: This is a two-million-dollar operation.

McCULLOCH: That's a compliment to your program.

BOUGHEY: Well, this has become actually the major bio program in the States, and this guy--

McCULLOCH: Is this the Australian friend of mine?

BOUGHEY: Yes, yes, yes, you see, when they want somebody good, they get an Australian! Let's have that in the record, Sam!

McCULLOCH: The fourth question, then, how are appointments now? For instance, if you want to make an appointment, say in these two years, is the University of California having more difficulty, or are there still enough people around that we can get the best?

BOUGHEY: Well, I haven't much experience with this because I have got out of administrative work, but I am currently chairing a search committee for a Chairman, and it occurs to me that it is incredibly more difficult now to make an appointment than it ever was before when I was a part-time administrator. Part of this, of course, is due to the minorities and women's lib programs, which require an awful lot of detailed rigamarole. Now, in science, this has been a million-dollar windfall for the journal SCIENCE, because previously SCIENCE carried very few advertisements for academic

positions, less than a page. Now it carries full pages of advertisements, and this is being dictated by Health, Education and Welfare, which insists upon such appointments being publicly advertised, and this is, in my view, a complete waste of money. That's a million dollars, because they charge you $110 an inch for these damned adverts, and this is a million dollars of money which could be spent on academia, gee, just going down the drain, producing useless pages in a journal. SCIENCE doesn't want to have these damn pages, and the people that--

McCULLOCH: The American Historical Association has a Job Register, and it's put out very simply. It's just typed and mimeographed, and we get this four times a year, and, as you say, we must advertise, and we must make the widest search, including minorities and women. We subscribe to it. I think it costs us $2 a year.

BOUGHEY: Well, that's all right. But I hate to see this money being wasted when it's so badly needed.

McCULLOCH: Well, they could do it very simply. The history people do it differently.

Well, turning now then, Arthur, to the fifth question about the Academic Senate. We set up our Academic Senate, as you recall. We made some changes from the other Senates in terms of our regulations, and we had some pretty good debates. How well do you think we did in setting up that Senate? Are you used to this kind of an organization?

BOUGHEY: Yes, fairly well. I have done my share of representative work on Senates in other universities, and I thought that we did a good job of setting up an advisory body to advise on the purely academic aspects, but I think we had a larger function in which we really failed, and this particularly concerns the insertion of academics into the business side of the University, so we have what I may have a chance to say later on this tape

the most appalling buildings that have ever been put up on any campus; we have the most appalling circulation system which one could devise.

McCULLOCH: You mean air circulation?

BOUGHEY: No, traffic circulation.

McCULLOCH: Oh, traffic circulation.

BOUGHEY: Traffic circulation, yes. You just simply can't get onto this campus at nine o'clock because the vehicles are back up for five miles around. This is sheer incompetence on the part of our business administration, who are supposed to handle this kind of thing. And I think a few academics from the Senate, inserted onto strategic committees very early on, would have avoided these kinds of problems there, but I hope, Sam, you'll give me a chance to get back to these two particular points later on this tape. So I think the Senate failed--it wasn't for want of trying, I think it tried, but not hard enough. Now we do have academics on ARPAC and similar committees, and I think the University will feel the benefit of this academic advice. I don't mean to say the Senate should run the business side of it, but it needed a much heavier input all the same.

McCULLOCH: Well, I think that's a good comment, Arthur, because actually some academics didn't get on soon enough to make changes inside the buildings. For example, I noticed we had no place where the faculty meet together, we had no place for students to have some common room of some kind. I pointed this out, but it was all too late for this building. I did make certain changes, but it just had to be walls being pushed around and things like that.

BOUGHEY: You know, this is what we now call behavioral settings. We failed dismally to provide behavioral settings on this campus, and now the kids just go between lectures and sit in their damned cars. And that's no way to run the University.

McCULLOCH: Well, I understand the Student Union, whenever we get it, will solve one of these problems for the commuters, but the question is, do we have one big Union, or do we have satellites dotted around the campus, where they can meet, eat their lunch, and get out of the rain, and store their books, and things like that?

BOUGHEY: That's where these environmental psychologists, with their behavioral-setting concepts--. And we have all this in social ecology. We have programs to provide invaluable advice.

McCULLOCH: We're going off a bit, but I think this is important, you know, Arthur, that students barely turned down the Union. We had to have a two-thirds vote. They voted in September or early October, and it was just defeated. My guess is that it will pass next time, because we're getting a greater percentage of commuter students all the time. I hope you'd be willing to serve on a Union committee--or have you served on one?

BOUGHEY: Yes, I wouldn't say I was the best person, but I would say that a group, in which I am in social ecology, is dealing with behavioral settings. I actually have a grad student working on behavioral settings for his dissertation. I think this group, which now includes Dan Stokols and one or two others, would have a very strong input into the argument for a central Union or a dispersed Union or for a Union of any kind. I think those students probably had to vote on that issue, as you mentioned, without having a full and proper presentation of arguments to consider.

McCULLOCH: You know, I wanted the Library to be in the center, right in the center. I was interviewed in October, 1963, and it was even too late then to change the location of the Library. Then I said, "Why don't you put the Union, the student group, right in that center? You could have at least two stories below the ground level, because, pointing to the south, you wouldn't have to go up more than about three stories."

BOUGHEY: That's right.

McCULLOCH: You'd still have a five-story building. Well, I think this all has to be thought through, and I'm very interested you brought the subject up.

Now, going on with the Academic Senate, are there any bylaws you feel we should change in our organization? I notice you come to the meetings.

BOUGHEY: Sam, I'm not a campus lawyer--I just happen to clue lots of times to what's going on.

McCULLOCH: But you're on the Athletic Committee, for example.

BOUGHEY: Yes, and, as the Chairman of that, I managed to do one thing for the athletes. Just one thing that I managed to do for them--the athletes are being conned--they're being conned over all these years into thinking that they were prevented from having athletic scholarships, because there was nothing in the bylaws of the Senate to stop them from having athletic scholarships. Because of this, Thornton and the other people, coaches in particular in athletics, were under terrible handicap in that they have had to scratch around for financial support for athletes. And athletes mostly are putting in five hours a day in practice for their particular sport, and they don't have time to scratch around for part-time jobs like the other guys do. The other guys can support themselves on the five hours of activity a day. That will bring you in a tidy part-time income. These athletes have to put in this time at their particular sport, and it's an enormous handicap. I admire these coaches, Thornton and Company, for getting the quality of collegiate athletics which they've succeeded in doing. So there was just a bylaw there which wasn't a bylaw at all--it was a bluff.

McCULLOCH: You're speaking of the one we voted through last week which said we must afford the NCAA figure. I know. I'm well aware of that

NCAA figure, because my nephew is Bob Day, the famous miler and two-miler, and he got this full scholarship at UCLA. UCI just didn't start out, and I think the faculty didn't want the athletic scholarship. Sherry Rowland (you heard him in the Senate last week) argues why should they get the full ride when you don't give the full ride, as it's called, to, say, a person who is just an intellectual person and who can't play a sport?

BOUGHEY: Yes, but, you know, I disagree with Sherry, as no doubt other people do.

McCULLOCH: So do I.

BOUGHEY: In fact, he does give a full ride. He has funds available, and, when he gets a really bright guy, he protects this guy, and he gets him funds there, and that guy gets the full ride, and this is just phooey--

McCULLOCH: Yes. I agree with you, and, in fact, I openly at the meeting supported the anti-Rowland position, and it passed handily, I noticed.

BOUGHEY: Yes.

McCULLOCH: Well, going on, then, Arthur, to the seventh question, in what areas do you think you have had the greatest successes? I'm talking now about your recruiting, your faculty, and the program you established, and what you've done since.

BOUGHEY: Well, I suppose academically our greatest success was in getting a discipline carved out which dealt with populations and communities and getting a series of academic specialists to give a fairly broad coverage of this level of organization--these two levels of organization in biological science. At the time UCI was set up, this area hadn't been carved out as a recognized area, because, of course, much of America was still organized in the old systems of genetics, physiology, botany, and so on. And Steinhaus, of course, who was the main inspiration for this concept of organizing biology and methods of organization, was able to assist us in

getting these ideas established. Oh, yes. I'll put that down as an academic success.

I think we had another success, Sam, and this was in the area of peripheral facilities (I spent a lot of time on it and now other academics are spending a lot of their time on it). Now, it was obvious to any ecologist who came here that this freshwater marsh that we partly encircled just had to be added to the campus and had to be made into a primary research and teaching facility, and this, as you know, we have succeeded in doing. We needed other peripheral facilities like a museum, but not organized as an old-fashioned museum which was like a Noah's ark with two of everything in it--it was a population museum. This we set up, and it is now a most useful facility.

We needed something in the way of an integration of our 1500 acres of ornamental grounds into a utilizable form so they could be used for teaching and research, as well as just something nice to look at, and this, with the help of the architects who were particularly cooperative in this matter, people like Uematsu and so on had the same concept that we academics had of utilizing the campus grounds for this purpose--this, I think, was another success that we had. We got hit by financial stringency the same as many other areas got hit, so that we haven't yet fully developed this, but who wasn't hit by the minirecession of the late '60s? It caught us all.

McCULLOCH: That's right. Well, then, what happened specifically, Arthur, to the plan that was going to have different areas of the world growing their various shrubs and trees in a climate similar to Irvine's climate?

BOUGHEY: I think this was shelved because of this financial stringency.

McCULLOCH: It would be a great thing to have it.

BOUGHEY: It's still possible; it could still be done, of course. But I'm a little out of this now, because I've been spending all my time, since I gave up part-time administration, on human ecology, and this is--

McCULLOCH: I'd like to see this. I don't know whether you've been to Melbourne, Arthur, but the Botanical Gardens there show you that for that climate you can get every shrub and every tree for the particular climate all over the world. It's beautifully marked out so anybody can go around and see--

BOUGHEY: Yes, I've heard of this, Sam. I haven't yet had a chance to see it, but that's an excellent concept. Of course, the world's so large now that you can never, or almost never, have an original thought. There are about ten other guys who had the same thought at the same time, and clearly the Melbourne people were thinking along the same lines we were thinking independently there, and so were a few other people--I think up in Montreal and so on.

McCULLOCH: Well, the Melbourne one, actually, was done some time ago. I think it goes back, but they continue adding. That's been a great success. They've had the money. And, of course, we got hit, as you said, by this recession--I call it a recession.

BOUGHEY: Yes, they were able to develop before they got hit by that, yes.

McCULLOCH: In what areas do you think you've had the least success and why?

BOUGHEY: Well, I think academically we've quite failed to integrate the levels of organization of populations of communities into levels of organization below us, if you like to put it that way--below us in orders of complexity, of magnitude, and so on. The Population and Environmental Biology Department still is something of an appendage to the School of

Biological Sciences, but the School of Biological Sciences has changed, too, and it's not that the failure has been completely on the part of the P and E Biology people. The Molecular and the Developmental people have tended to concentrate as even greater specialists than they started out by being in 1964-65. And they, in a way, have moved away from ecology. And not only has ecology failed to integrate to them, but they've been running away so fast it would have been damned difficult to catch them up anyway. It's a failure not so much of P and E Biology and the people in it; it's a failure within the School of Biological Sciences. And actually the latest Dean, Schneiderman (one shouldn't mention names--it's invidious, I suppose), has been a powerful influence for integration in these last few years, tending to bridge this gap which had not previously been bridged between P and E Biology and the other three departments of the School of Biological Sciences.

McCULLOCH: Therefore, you welcome this Ecology Program of Binder's, then, do you?

BOUGHEY: Well, this is one which attracts me personally; in fact, I am moving my full-time position into that area. And the reason it attracts me is fairly simple, because this is the area which is human-orientated. Now, as ecology is developing in the School of Biological Sciences, it is presently, and it will always be if it follows present plans, what you might call wilderness-orientated. The kind of ecology that the people there are looking at is the ecology of a wilderness area--untouched desert, or Yosemite or Yellowstone, somewhere where there is no human occupation. But as, in America, eighty percent of us will soon be living in urban situations, what we need to look at most urgently, I think, is the ecology of those urban situations where eighty percent of us are living. We only get to see these damned wilderness areas, if we are lucky, for two or three weeks of every year. Most of us never get to see them at all.

McCULLOCH: If we don't get any gas, we won't see them at all.

BOUGHEY: Right, Sam. So, in some ways, I feel that the ecology in the P and E Department is now more and more an escapist ecology, going back to a time when we had no human problems and when we could work away on these very fascinating and very attractive problems of wildlife without human disturbance. Now, Binder's program, which attracts me, is that we are looking at the ecology of man (pardon me, a male chauvinistic term, but we've got used to using this) in the urban setting, which is where all our damned problems are right now, and we can keep the other stuff going--the wilderness area--we have to keep it going, I mean. I myself have done much, I hope, to preserve wilderness in California.

But we have to have another bunch of ecologists looking at these urban situations, because this is where the stress in our modern world is coming from, and if our system, present civilization system, does bomb out, it's going to bomb out because of a failure of understanding the ecology of these urban systems, not a failure from understanding the wilderness areas, and this is why I think Binder's program is complementary to the P and E program. I think the campus needs both of them, though my particular interests are in carrying capacities of various urban situations in terms of people, and so I have to locate myself with the Binder group, rather than with the wilderness group.

McCULLOCH: I'm very interested to hear that, Arthur. I'm certainly glad you found that "home" in the sense that you can really work at what you really like working at. It'll be fine for you.

What problems are unique to Irvine because it's new or because it's a particular campus? I mean, what's your analysis of that question?

BOUGHEY: Well, I think it's very simple, Sam. The problems that are unique to it are its commuting situation and its growth ethic in this area.

McCULLOCH: UCLA was a commuting area, though.

BOUGHEY: Yes, but UCLA--I suppose if you would omit that its quality has come in the last comparatively few years, almost in the last decade, Los Angeles had lost its growth by that time. UCLA has established itself in a no-growth situation. Los Angeles, of course, is a stationary city now. Its industries are not growing appreciably; its population is not growing appreciably; its housing developments and so on are not--. Of course, I'm making a rather broad statement. There are exceptions to this. But we at Irvine are still caught in the midst of a population explosion due, now primarily, to immigration from the rest of America, and this is a unique problem--how to cope with this growth.

Now, we got various computer projections and so on there, and it looks like already this growth, which has stopped in Los Angeles, we inherited in Orange County, but are now passing on to San Diego County. We have, we think, five or six years of further growth in Orange County before almost all this growth is transmitted down to San Diego County, so that in five or six years' time we shall be in the same position as UCLA was, in that we shall be then setting up a commuter campus, true, like UCLA, but it will be in an area which has ceased to grow economically and populationwise. We shall have to adjust to that situation. Now, I feel this is one of the failures of our administration. You'll think I have a thing against the administration, but I think they failed to comprehend this demographic situation, so they made boo-boos like imagining that this year we should have a reduced increment, when we told them all along that that was not so because of this demographic accident. They are bound to have increasing numbers of applicants over the next four or five years, and I think the Master Plan for UCI fails to take this into account. Likewise, it fails to take into account the fact that, after this five- or six-year burst, we shall have

reduced applicants. And these things have to be inserted into the major planning proposals for this campus. I don't think they have anything like the emphasis which they should have.

McCULLOCH: Don't they call upon you for these projections? Don't the central administrators do that?

BOUGHEY: Well, in your own Australian words, Sam, not bloody likely!

McCULLOCH: Not bloody likely! Well, now, the tenth question is, what would you do differently, if you had to do it all over again?

BOUGHEY: Well, to put it very brutally, Sam, I think instead of building these cement structures as academic buildings, we should build them as car parks; instead of the car parks, we should have academic buildings. In other words, the only thing that's stationary in our academic society is car parks. If we design a car park, we can be pretty sure that it will remain much the same design for twenty years, at least. The cars may get smaller, but we can fit more parking spaces into it. But we can't guarantee that any academic building in twenty years' time will be suitable, and to spend most of our capital money on these cement monstrosities was just utterly ridiculous, in my opinion there. The first thing we had to do, when we moved into Steinhaus Hall, was to plan for (how much was it?) a quarter of a million or one and a quarter--somebody can check this--but I think it was one and a quarter million dollars' worth of alterations. That's the first thing we did when we moved in, and those alterations cost that much because we were dealing with solid cement walls that we had to knock down and replace there.

McCULLOCH: Did they learn anything when they designed your second biological science building, which is still to be built? But I notice the architect's model of it in the central--

BOUGHEY: Well, I don't think the <u>architect</u> learned anything, but he was overruled by the fact that we had managed by that time to get academics

onto the thing. So this damned silly nonsense that Pereira got away with in one or two buildings--for example, putting a sheer unbroken wall where he should have had windows is just utter bloody nonsense there--that was avoided in Biology, too, for example. I mean, when you have a beautiful campus, you want to look out on it there. And what does this clod of a Pereira do--and I use this term clod because that guy is a clod when it comes to academic use of a building--he only thinks of the outside aspect of a building, like many architects do.

The first thing you have to do is to put all of your offices around the outside of the building and as many lecture rooms as possible so you look out on this beautiful campus there, instead of putting up sheer walls. You've seen that sheer wall on the face of Physics, for example. We've got another one on Steinhaus Hall there. And as we've run into an energy crisis, this is going to be with us for the rest of our natural lives. We have to have lighting in those things there, whereas we could have had natural lighting. Oh, I see you have your lights on, Sam; we ought to switch those off. Put that down on the record. But you can manage with the natural lighting you have in this room.

McCULLOCH: I do turn it off in the afternoons, when the sun comes around.

BOUGHEY: Right, yes, you see, but we can never turn it off. The people who have the cavelike dwellings--

McCULLOCH: What I really hate most, Arthur, is teaching in a classroom which has no windows. In this building next door, Humanities Hall, the classrooms have no windows at all.

BOUGHEY: Gee!

McCULLOCH: We teach always in complete artificial light.

BOUGHEY: And the pleasure of lecturing in a building like Computer

Science, where they have big windows looking out on the campus--it's an incredibly different atmosphere.

McCULLOCH: And the Engineering Building, too.

BOUGHEY: Yes, that has it, too, to some extent.

McCULLOCH: On the other hand, though, how do you account for the Social Science Building, which was the next completed? The classroom building has no windows at all!

BOUGHEY: Gee!

McCULLOCH: Literally! I've taught over there, Arthur. There's not one window in that classroom building.

BOUGHEY: Well, I forget how we got onto this subject.

McCULLOCH: What would you do differently, if you had to do it all over again? The answer is, you'd put windows in--

BOUGHEY: I would put in much more impermanent buildings now. You are aware that at Davis, partly not because it wanted to, but because it was forced by shortage of funds, Davis put up temporary buildings for its Medical School. It came down and it borrowed the design of what we used to call our Surge Building (we now call it the North Campus Building), and that building is ideal for a university building. You can do everything inside that you can do--I'm talking only of science, I don't know about humanities--everything that a scientist wants to do can be done inside these North Campus buildings. It's simplicity itself to extend them. If you get a machine that's bigger than the door, all you have to do is to take a section of the wall out, push the machine in, and put the wall back again there.

McCULLOCH: Now, you're referring to that building we built that very first year that all the scientists went into that was called the Surge Building?

BOUGHEY: That's right. That, to my mind, is the ideal building for

the university of the future because it's so incredibly flexible. It costs so very little, so you can put your money into more important things, like apparatus and people and so on there. You don't have to lock a lot of it up in cement.

McCULLOCH: What you have to have, then, is a large area, because those are all single-story buildings.

BOUGHEY: That's what I meant by saying, put the cement buildings as car parks and spread your buildings out, where the car parks are. We still only use the same room, but it's the cars that are concentrated and the people that are dispersed.

McCULLOCH: What you say is interesting, Arthur, because we do have 1500 acres. We have more than most campuses ever have. We could do what you're saying, literally, literally do it.

BOUGHEY: Right. Well, I don't know, in humanities you may have different requirements. I'm speaking strictly for science, where room sizes, where facilities that you need, services where apparatus is changing so constantly, you have to have a flexible structure.

McCULLOCH: Yes. Humanities depends upon a very good library first, and secondly our main equipment is this typewriter.

BOUGHEY: Yes. You probably have a different view, but we spent a lot of money on these science buildings. Steinhaus Hall, I guess, was $3.5 million or something like that, and we could have spent that $3.5 million on something far better than cement. And your expenditure doesn't end with the initial $3.5 million; it costs you so many millions to change the damned thing.

McCULLOCH: Well, do you know enough, Arthur, about the planning of our medical science buildings--and aren't we supposed to hook our next biology unit into our medical science, and how is that planning going?

BOUGHEY: I'm out of touch with all that, Sam. I just don't know anything that is going on there now, but I would say offhand that they would be very foolish not to follow the Davis system and have these temporary buildings which can be changed. And who knows what medical science is going to be like in ten years' time? They may be using very different facilities from what they are using now. If they put the damned thing up in cement, that will be millions to change it.

McCULLOCH: If you had it to do over again, what about your recruiting and your planning of your curriculum? Do you think that went really as well as you've expected?

BOUGHEY: I would think that inevitably we would follow much the same course. I don't think that we'd go back in history and say, "If I were to have the chance over again, I would do so and so and so and so." I think we'd find we followed much the same course. The courses are mainly developed from interaction between people, and I think the important thing was that they came from this people interaction, and, if we went over it again, we'd still use the same technique of people interaction, and this would develop probably in not exactly the same courses, because they might be different people, but they would follow much along the same general lines of development. You always get controversy and conflict, because people are different.

McCULLOCH: Talking about your graduate program, are you having any problem in placing your Ph.D.s?

BOUGHEY: I personally am not, because--

McCULLOCH: Well, this is the program, you see, I'm thinking of the program.

BOUGHEY: Oh, you mean of the Population and Environmental Biology Program?

McCULLOCH: Yes, the Population and Environmental Program.

BOUGHEY: To date there hasn't been an awful lot of difficulty, as I understand it. I don't know other people's difficulties as well as I know my own. I've run a group of an average of seven to nine graduates, and I've not had any difficulty in getting them employment, because their human ecological basis for their work has ensured that they will be in demand in a number of areas, but the people who have concentrated on other things like (what shall we say?) the excretory system of different rodents in the deserts or something like this have previously gone into academic appointments, practically the only opening for them. These academic appointments didn't close down so quickly in ecology as they did in other areas, because a number of molecular-orientated schools started getting token ecologists on their faculties, and so these wilderness boys, as you might call them, were able to get these token appointments in the midst of primarily molecular-orientated schools. But now they have seen the writing on the wall, because there is only a limited number of these token appointments, and there has been a very big drop in the intake of graduates to this so-called wilderness area. People who had a graduate group of seven or eight now have one or two. So there hasn't been an underemployment of these graduates; it's rather that there has been a drastic reduction in the numbers of graduates being accepted for these schools which have no, well, call it human ecology impact.

McCULLOCH: Is there any other campus of UC that does much, Arthur, of what we're doing in this ecology?

BOUGHEY: Yes, Davis is the most advanced one. They have a program which is called Environmental Studies.

McCULLOCH: Is this both undergraduate and graduate?

BOUGHEY: Yes.

McCULLOCH: Environmental Studies?

BOUGHEY: Yes, and they have some very good people in it. Davis, of course, because it's the fattest cat of the University system as a result of the history of its agricultural background and its professional schools.

McCULLOCH: And also its spirit--it's the "in" campus for students to go, because of the spirit of it.

BOUGHEY: The spirit is there, but this financial advantage has enabled it to keep conventional departments and float above them at a super level various boards of studies so they can respond very quickly to innovative requirements. They can form a thing like Environmental Studies without disturbing the traditional departments of sociology and psychology and botany, zoology, genetics, and so their Environmental Studies Program is drawn from these areas without raising opposition, because it hasn't necessitated a disturbance of the conventional sectionalization of science and the humanities and the social sciences, and so they have a pretty good program there. It has run into some difficulties, but (I hesitate to say this) I think it might be the most successful of these Environmental Studies programs in the nine-campus system of the University.

McCULLOCH: Excuse me, I've lost you. Are you saying the Davis one is?

BOUGHEY: Yes.

McCULLOCH: That Davis is the most successful in the nine-campus system?

BOUGHEY: I think it may well in the future be.

McCULLOCH: That's very interesting.

BOUGHEY: It may not be strictly comparable with the Arnie Binder operation, because the Binder operation has a very strong input from the psychological social sciences area, and Davis lacks this. Those basic areas were not very strong to start with on the Davis campus because of its agricultural history.

McCULLOCH: I'm very pleased to hear all this. Now, do you like the liberal arts and science organization, or do you prefer the schools? You remember we decided not to follow the idea of a liberal arts and sciences college, and we have the five schools. How do you think that has worked out?

BOUGHEY: Well, Sam, I think that we have failed on this campus in one respect, and it could be because of this kind of organization that we have failed. I wouldn't know enough about it, but I know we've failed, and we have failed to get any good communication between humanities and the sciences, between social sciences and the humanities, and the hard sciences and biological science. I think most of us would agree that we don't have enough communication between these areas, and it could be (I haven't enough experience with this to say) that the segmentation into schools has caused some of this lack of communication.

And were we organized instead into a Liberal Arts College, it's possible that we could have avoided some of this fragmentation, but I don't know enough about the structure of American universities. There's no doubt in my mind that we have this lack of communication, but I don't know whether it's due to the school versus the liberal arts structure or not.

McCULLOCH: I think it's the geography of the campus, and I think this was set up when we thought we were going to have a College of Arts, Letters, and Sciences, but, by setting up these distances, people tend to move, you know, within their building; they don't often move out to another building. We talk a lot to the people in this building, and that's the humanities. I regret to say we don't talk as much as we should; we should go up to the fifth floor to the philosophers or down to the first floor to the English people, but even that's not so good. When you get to walking over to, say, Computer Science and so on--this has become a problem, I feel. When you

have meetings and committees and those sorts of things, they bring people together. We just don't have a community, I feel.

BOUGHEY: Right. Yes, that's my own feeling.

McCULLOCH: Well, are there any experiences in the early years that we've missed or that you'd like to comment on? This is the last question.

BOUGHEY: Oh, we've got through to the twelfth.

McCULLOCH: Here's your chance to mention more about this question of the egress and the whole problem of the way the--. You want to get back to the question of the way the cars come onto the campus and so on.

BOUGHEY: Yes, Sam, I think we've had a major physical-planning failure, and I think this physical-planning failure has caused an academic failure. You, yourself, just alluded in the last passage, I think, to this in the fact that we are segmented into buildings there, and this tends to prevent us from information exchange with our colleagues in different disciplines. But we have had some enormous failures, and I think this has to be attributed primarily to the business administration, which has tended to regard itself as all-omnipotent and has not adequately sought academic advice.

Now, the latest example of this is in the edict that's come out (this is an edict, a papal bull, if you'd like to put it this way) about the conservation of energy. Now, energy is being conserved on this campus without, as far as I can see, any input from the academic side, whatsoever. This campus is an academic operation; it's not a buildings operation, it's not a business operation. And when we are talking about conservation of energy, as we have to now, we academics have to decide what academic affairs are to be maintained and what academic things are to be let go there. This is glaringly absent from this papal bull, as far as I can make out, and it's just one example of the whole attitude that has persisted throughout all

these years and started, I guess, in 1962 with the appointment of the Business (whatever he calls himself).

McCULLOCH: Vice Chancellor of Business Affairs?

BOUGHEY: That's the guy. Now, he really missed the boat. What do we have on this campus? We have a north and a south campus, divided by a major highway. Well, I ask you, Sam, who in the hell ever heard of a campus divided by a major divided highway? There was the opportunity in '62 to get that highway put round the University, and that opportunity was missed. When I began looking at the possibilities of the conservation of this marsh, I found that these bloody administrators had started to run roads across the bloody thing. I ask you, roads across the most valuable natural asset that this campus has! There was complete lack of imagination.

Now, you try getting onto or off this campus on the hour; this is impossible, although I think these business people are supposed to have appointed a traffic circulation consultant. If this guy was paid fees, he should be asked to return them with some damage, because, God Almighty, this is just not an adequately thought-out system of approaches and exits. We, of course, should have had a mass transit system, and we are just now belatedly trying to develop this. Had we had a mass transit system (we have to subsidize this one, so we would have had to subsidize the original one)--but somebody should have thought of this long, long ago. And it's a history, I think, of many campuses, like UCLA and Berkeley, that they had roads going through them which they had to close. Even if these guys hadn't the imagination--

McCULLOCH: Stanford has, too, Stanford has some--

BOUGHEY: Yes. You see, if they hadn't the imagination to think this out for themselves, they only had to look around at the other campuses and see what happens. So I think this is one of the most irritating things that

I find now, that it's almost impossible to get on and off the campus at times. The way I come, cars are backed up for four or five miles along Palisades Road, and this is going to get worse. I have students that are caught up in jams there for half an hour, and that's all because of the failure of these guys in business who were supposed to look after these things, and that's what they were hired for--that's why they were appointed in '62 before any academics were. It would have been far better to have appointed a bunch of academics in 1962; they wouldn't have had this nonsense there, but this is a bit of academic--

McCULLOCH: But, as a matter of fact, Clark Kerr did try to do it, Arthur, but this Advisory Committee, as it was called, of five academics was not established until April of 1963, and essentially the architectural planning had been done. They were brought on, and then they went to work in helping establish the program. John Galbraith was the Chairman of it. They acted as the Budget Committee, and they were the Academic Senate, as it were. Santa Cruz had an Advisory Committee, too. But the point here is that they were really appointed too late to affect the physical planning.

BOUGHEY: I think at least one of them was appointed too late in his life. It was a question of jobs for the boys. This was a Professor Emeritus; they were sorry for him, and they gave him a job to help him out. God Almighty, this fellow gave us an aquarium room without any water! We just suffered from that advisor who was supposed to be the Science Advisor on these buildings here.

McCULLOCH: Oh, I remember him.

BOUGHEY: That guy was a lulu there! I am amazed that he put his johns in the right place--he didn't even know where to urinate!

McCULLOCH: As a matter of fact, there are no johns in the Science Lecture Hall.

BOUGHEY: Right. And that guy, he really made a complete nonsense of arranging the kinds of science facilities that were needed there. We have, I suppose, a peck order in science, and at the time then the boys at the top of the peck order were Physics, and as you start to talk about johns, just go and look at the Physics johns--they are twice as large as anybody else's there. Are physicists inaccurate when they get into these places? Or you look at the Biology johns! God, we can hardly stand shoulder to shoulder in the damned things! Now this is typical of all the rooms there. You open a door in Biology, and out come falling a lot of books and students and everything; you open a door in Physics, and all you see is a vast room with comfortable cushions and chairs, a coffee pot there, and journals, but nobody in the damned things.

McCULLOCH: I'll tell you why, though, Arthur. Whereas your building, your Biological Science Building was planned by this man (I know whom you're talking about), Physical Sciences was planned when we all got here. Sherry Rowland sat down, and Bernie Gelbaum sat down, and Ken Ford sat down, and they all had a say in that building--I remember it.

BOUGHEY: Yes, and this is my point exactly, Sam. This campus lost out from having the business input predominate for so long there, and it took a long time to have the academics adequately represented on committees. I think that we have got a better organization now, but we're stuck with a lot of cement--a lot of expensive cement--and that's going to handicap us in the future there. But we should not make the same mistakes now, now that we have this better academic input into committees.

McCULLOCH: Right. Any other thoughts that you have that you might have missed in this talk and that you'd like to make a comment on?

BOUGHEY: I think that we've covered most of it. I would say I think that all through our planning years we would have done better to look at

demographic projections. I don't think we made enough use of these, in view of the fact that we were in a growth area and that we are in a period of rapid population changes of one sort or another. I think that this has been a major planning failure there.

McCULLOCH: This is really a future problem now, but I'm interested in your comments, Arthur. What do you think the fuel crisis, which I think is something that is fairly permanent, will do to this kind of planning, because it's really dependent on the automobile? Now, can we put in a rapid transit system rather quickly, a bus system that would bring the students here and we wouldn't lose students because--

BOUGHEY: Well, as you know, Sam, we have to distinguish now between rapid transit and mass transit. Rapid transit will probably take the form in Orange County of a cross: there will be a roughly north-south line and a roughly east-west line in the form of a cross. This will be some kind of metro or something like this with comparatively few stations and few stops, and this will serve major centers. From these centers, the mass transit system, which will be essentially buses linked with Dial-a-Ride cabs or Dial-a-Ride minibuses. This will link up these major stops on the rapid transit, with all the shopping centers, with the universities, and the educational places, and the residential areas. Now, this should all act in our favor. For one thing, it will stop more cars coming onto the campus, so that we should be able to hold with our present expenditure of land for car parks, and it should facilitate things for the poorer student who can't afford the cost of a car.

McCULLOCH: Right.

BOUGHEY: It should conserve energy. Now, as I guess most people know, we've got one of our own on the mass-transit side--that's Gordon Fielding. Again, they want somebody good, they go south of the equator!

McCULLOCH: New Zealand.

BOUGHEY: Right. And he has very imaginative concepts of this. He has already expanded the mass transit system in Orange County where it's most expandable rapidly, and that's in the dense Garden Grove area, which is the best-served at the moment. When he is able to get onto the less dense areas, when it becomes economic to work these areas, then the University will be included.

McCULLOCH: I'm delighted to hear this, because this is the brightest thing I've heard in a long time.

BOUGHEY: Yes, and the energy crisis has done us a good turn in this respect. It has precipitated us into both a longer-term development of this rapid transit which, of course, the Orange County cross will link up with similar rapid transit in LA and Riverside, San Diego, and San Bernardino counties, so that one may be whisked by this rapid transit up to UCLA and/or out to Riverside, et cetera. And that will link up with this mass transit, which will be primarily the bus service between districts, supplemented by the Dial-a-Ride which will serve individual homes.

McCULLOCH: You know, this is the first time I've heard of this. I know Pete Fielding is working on it, but I haven't heard--

BOUGHEY: Come and join our social ecology group!

McCULLOCH: I should, I should. Arthur, I think that this has been really fascinating, and I thank you very much. Anything else you want to say?

BOUGHEY: Oh, no. I thank you, Sam, for the opportunity to put some of these ideas down.

McCULLOCH: Very good.