

Chapter 16

Letters to Melba Phillips, October-December, 1951

Letter 26. Folder C46, not dated.

[Shortly after October 10, 1951 when Bohm arrived in São Paulo].

Avenida Angelica 160
São Paulo, Brazil

Dear Melba

After many delays, I am finally in Brasil. It is hard to write down all my impressions. São Paulo resembles an American town of 25 years ago or more. The large department stores and chains of stores are absent. Everything is on a sort of small - scale chaos. The new buildings however are very beautiful. Apparently architects refuse to design buildings unless they are given scope to make them beautiful. The entire city has an air of great energy with much construction etc. The people move rapidly. The air is cool, resembling New York in late April. The comforts of living are definitely far below these of the US however. I stopped in one of the best hotels in town (about \$7.50 at the official exchange rate) but it resembles a second rate hotel in N.Y. The people at the physics dep't got me a room in a sort of pension where we also eat. The food is excellent, but the room is small and not very nice looking. Good rooms are however very expensive. Room and board here is about 2500 cruzeiros a month (about \$120) which isn't too bad.

The language problem seems tough right now. A lot of people near the University understand enough English so that I can get along. But only one person in the hotel understood it, and very few of the store keepers, etc. One feels really helpless without the language.

The University is rather smaller than I thought, about 5000 students in all, of whom 1000 are in the Faculdade de Ciências, Letras e Filosofia. The different "faculties" are separate (being in different parts of the city) although a new "Ciudad Universidade" (university campus) is now being built in a separate part of the city. Not only is

each faculty independent, but each chair (i.e. professor) can work independently. The result is a general chaos. Thus, it turns out that because there was a shortage of physics professors right after the war, most of the science students (including physics students) are taking 2/3 of their time in math. Now it is very hard to change this. Many of the physics professors prefer it as it gives them more time for research. Also, recently a custom has arisen in which students report to class about a month after the term begins. This is also very hard to change.

The library is not in very good shape, and they are far behind on foreign journals. On the whole, conditions are far from those in the States. I am not really unhappy, however. I just don't take these problems too seriously. I'll do what I can, but one cannot expect miracles here. They are evidently hoping that I can bring the department into better order.

Summer vacation begins soon, but they are expecting me to help get things going here now. I can probably wangle a vacation in winter for a trip to Europe (this June). This suits me quite well.

I do not really regret leaving the U.S. All that I really long for are the good friends that I had there, especially you and the rest of the house at 298. These are among the memories that stand out most vividly. Much of the rest now seems hazy and almost unreal. Here in South America, we seem to have turned the clock back 25 years or more. The horrors of war and the uniformity of opinion characteristic of US have not reached here. Yet, one can see that the people here are vulnerable to the same things, because behind this concern for the every - day things of life there is no understanding of the long range social processes that are taking place. It is hard to express what I mean, but here we seem to have a lot of individuals each trying to make his way and get ahead. They haven't yet got to the point where this game forces them to combine in great organizations that smother all independent thinking. Yet one can see that this is the inevitable end of what is happening here, just as it was in the USA, unless there is a fundamental social change. Meanwhile, however, the people seem to be less worried and friendlier than in the U.S. In Rio, they are even more different, because the prevailing atmosphere in São Paulo is that of getting ahead, whereas in Rio, the emphasis is on enjoying life. I could see this even in the short time I spent at the Rio airport. To illustrate one point in this direction, I might tell about getting off the plane. A cute little girl (about 18) came to take me to the waiting room. She asked me if I spoke Portuguese and I said "Not a word". She said "Surely you must know some words. [For example – words crossed out CT], the word for love - amor".

There is a great deal of poverty here. You can see the people on the streets especially the workmen, who look much poorer than in the US. They compare with the workmen I used to know when I was a child but are even poorer. Even the middle-class homes have a certain shabbiness about them, a tendency to fall into disrepair. However it isn't too bad. Perhaps it is good preparation for living in Europe. Only the new apartments are really in good shape, but an apartment of this kind is \$200 a month, clearly not worth it for me.

Well, I shall write more later. Give my regards to all and let me hear news from home before I lose touch altogether.

Love
Dave

Letter 27. Folder C46, dated: Oct 22, 1951.

Oct. 22, 1951
Avenida Angelica, 160

Dear Melba

Thanks very much for your letter. It is the first one from the States. I advise you to write to my home address, or to the Faculdade de Filosofia, Ciencias e Letras. The Physics Dep't address is not very good as there are 3 or 4 physics dep'ts in the university.

Thus far I have been studying the language and getting used to things a little. On the whole, Sao Paulo is not very different from the U.S. except that the poor people are poorer. I live in a very noisy place, but hope to move to an apartment with Smith as soon as he recovers from his accident. He was crazy enough to buy a motorcycle in a city where you take your life in your hands when you cross the street. As a result, he collided with a truck, and suffered cracked ribs and a broken clavicle. We are now trying to convince him to sell his motorcycle.

The language is rather ugly compared even with English. Every now and then you run across a pleasant or musical word, but you can always be sure that it is Indian. For the rest it sounds like a mixture of Spanish and French from which half the syllables have either been dropped or replaced by the nasal sound "aũ", which should be said "ah-oong". We live near Avenida "São João", which is "Sah-oong Joh-ah-oong", but this must be said rapidly and comes out roughly "Sahn Jo-ahn". The word for "to drink" is "beber", and the conjugation is pronounced as

present	past
eu beboo nos bebaymos	eu bebee nos bebemos
tu bebes vós bebays	tu bebaste vos bebasta
ayle bebe ayles bebayn	ayle bebee ayles bebarem

I am gradually getting used to it, and can make the sense of newspaper stories, signs on the street, and subtitles in English movies. But it will be a long time before I can understand the speech.

During the first week or so, I was not lonely, but now I think quite often of the people back in the States. Also, scientifically speaking, I miss the stimulation of talking to people. One feels far away from things. Even though there was a lot of opposition, still it was sort of stimulating. I guess I'll have to get used to working

without such stimulation. Also, I'll have to get out and meet more people. Smith has quite a few friends, but they seem rather naive to me. Smith himself is rather naive, but I like him because he is so full of life and because he has at least good intentions.

I had another idea about the quantum theory recently, tying it up with the plasma theory. This idea is based on a remarkable formal similarity between quantum theory (in my interpretation) and the plasma theory. In the plasma theory, one has the alternative of a description in terms of individual particles in a large assembly, or of a collective description of these particles in terms of an effective field, which is constituted by the density of particles at each point. Now, I propose to regard the negative energy electrons in a vacuum as forming a sort of plasma, while the ψ field (and also the electromagnetic field) represent the collective aspects of this plasma. The individual particle and collective aspects interact, but each provides a different description of the same system. This idea promises to give a more rational interpretation of the fact that the particle velocity is restricted to $v = \frac{\nabla S(\vec{X})}{m}$.

Well, I hope that I can get some sleep tonight. The street cars and autos are very noisy, there are roosters near here that start at 2 AM, and at 7 AM, they start to clean up the house.

It's hard to believe that we are 5000 miles apart. The idea hasn't sunk in fully yet. Give my regards to all

Love
Dave

Letter 28. Folder C46, not dated.

[November, 1951].

Avenida Angelica 160
São Paulo, Brasil

Universidade de São Paulo
Faculdade de Filosofia, Ciências e Letras
Caixa Postal: 8105
São Paulo

Dear Melba

Thanks for your several letters. I am falling behind in answering my correspondence because I got sick last week with a combination of fever and diarrhea (3°C of fever). We called a doctor, and he took me to a hospital, where they filled me so full of penicillin and sulfasoxidine that the fever disappeared in a few hours. The diarrhea went away in a few days. The doctor made many tests, but couldn't find the cause. (Perhaps because I had so much sulfasoxidine that no bacteria could possibly survive within a foot of me.) Anyway, I am now back to normal, a little weak, and

set back about 2500 cruzeiros (\cong \$125) for a few days in the hospital plus the tests and the cost of the medication. The only moral is to be more careful with what I eat and drink.

Tomorrow I leave for the city of Belo Horizonte (means “beautiful horizon”) which is located to the north and some distance in the interior of Brasil. Here there is a meeting of the Brazilian Scientific Society. Everybody will be there, and give talks. I shall talk on the Causal Interpretation of the Quantum Theory. I gave two talks on the subject here, and aroused considerable enthusiasm among the people like Tiomno, Schutzer, and Leal - Ferreira, who are assistants (Roughly assistant professors). Tiomno has been trying to extend the results to the Dirac equation, and has shown some analogy with Einstein’s field equations. In other words, one not only needs a quantum - mechanical vector potential, but also a tensor potential, $g^{\mu\nu}$, analogous to the gravitational tensor. Thus, there may be some connection between Dirac’s equ. and the unification of electricity and gravitation, which may perhaps occur only at the quantum level.

Everybody here has been very nice to me, especially O. Sala, who is Smith’s boss, and who is trying to set up a few - MeV van de Graff machine, for doing very accurate work in the low energy range. People here suffer from lack of money, lack of help on routine things (such as painting, cleaning the machinery, etc.) and lack of skilled machinists and technically advanced machine shops in the neighborhood. In order to make his van de Graff tank, Sala had to train the machinists in a local shop to do precision work. Things therefore move very slowly. He has a very beautiful building on the outskirts of the city, where a new university campus is being built.

Brazilian science is in for some atomic trouble. The gov’t and some rich men and the army would like to build an “atomic city” at Belo Horizonte. Lattes supports them by giving interviews in which he says that Brazil could make an atom bomb, and that Argentine is getting ahead of Brazil. Of course, he later qualifies his statements by saying that they aren’t ready yet, and must do other things first. But the harm is done, because nobody reads to the end of the interview. The Head of the Brazilian Research Council, (an admiral) came out with a statement that they would develop atomic energy, and would expect the help of every Brazilian physicist. This is of course ridiculous, since Brazilian physics would be destroyed in the attempt, and since they do not have enough physicists. But the “big - shot” fever seems to be spreading, despite the opposition of most of the Brazilian physicists. Every time they get a machine (like the 23 MeV synchrotron at São Paulo) they make a big spread in the papers. Once the papers got mixed up and said that São Paulo was going to build the biggest cyclotron in the world (This happened in 1948 while Sala was working in Illinois as a student). The American papers picked up this item and printed it. The FBI then called on Sala and asked him to explain. He of course said he knew nothing about it, but didn’t believe it. I asked Sala what right the FBI had to object to their building the biggest cyclotron in the world, and he told me that one must accept the fact that there is much American control in Brazilian affairs.

I haven’t done much science in the past week nor have I seen many people. Perhaps in a week or two I’ll be able to get further ahead. I am almost finished with

my Portuguese grammar, and can read newspapers, and books, and carry out very elementary conversations. The words often have Latin roots that can be recognized in print but not in speech.

Give my love to everyone.

Dave

Letter 29. Folder C47, not dated.

[November, 1951].

Universidade de São Paulo
 Faculdade de Filosofia, Ciências e Letras
 Caixa Postal: 8105
 São Paulo

Dear Melba

Well, I no sooner got back from Belo Horizonte than I caught another infection, which incapacitated me for a week, with diarrhoea, weakness, and fever. I finally called a doctor, who prescribed a new drug from USA “chloromycetin”, which is weight by weight, three times as expensive as gold. It seemed to help, but I am still worn out, and have a trace of the infection, as evidenced by the presence of some diarrhea. I am getting sick of this, and don’t know what to do about my susceptibility to these infections. It takes away all one’s excess energy and spirit, so that even a few blocks’ walk is tiring.

The conference was interesting. I talked about the quantum theory and created a favorable impression, even convincing Feynman that there might be something to it. Incidentally, Feynman has begun to get a sort of “social conscience” in Brasil, and is very much impressed with the extreme poverty of the people, which was especially evident in the interior, in such places as Belo Horizonte. In fact, when the city of Belo Horizonte gave us a dinner at a modern country club (designed by Niemeyer), Feynman became angry and when the Mayor came in with some pomp & ceremony, Feynman walked out angrily, because he felt that so much money should not be wasted in the presence of so much misery.

Lattes was not at the conference, because he was busy talking to Gordon Dean in Rio. When I arrived in Belo Horizonte, the papers were full of the story of a deal between Brazil + US, in which Brazil agreed to sell the U.S. Thorium, and in return, US would build Brasil an “atomic city” in Belo Horizonte, with a pile, etc. Some of the “military physicists” and military men want this, as in the secrecy of an atomic city, nobody will ever know that they aren’t accomplishing anything. I feel that Lattes is opportunistically backing them up. There is a general feeling, however, that such a city would absorb the few Brazilian physicists away from real physics, and thus prevent the growth of Brazilian physics. Incidentally, Feynman shares this

view. Dean was in São Paulo, and had dinner with Souza - Santos, the most influential physicist at the University. Smith tells me that Souza - Santos is a ruthless opportunist who drives for power, and that although Souza - Santos has in conversations with many people come out against this pile, he may easily change his mind. So you can see trouble ahead here.

I was amused by Charlotte's remark that "there isn't even a machine at São Paulo, and Lattes isn't even there." Is Lattes equivalent to a machine, and if so, what is his voltage? It is true that one J R Oppenheimer remarked that Lattes was too much of a "high-pressure salesman", and events seem to bear him out. Anyway, our problem in Brasil is less to get more machines than to keep them out, lest all of the efforts of Brazilian physicists be absorbed in servicing machines. Also, the time may come when Charlotte will be happy, if Bob is able to get a job, even at a "machine - less" university, although this idea has probably not yet fully reached her consciousness.

Well, I hope that I can approach a more human status, by getting rid of these bacteria. I hope that it will not be necessary to eat my weight in precious chloromycetin.

Give my regards to all

Love

Dave

Letter 30. Folder C46, not dated.

[November, 1951].

Universidade de São Paulo
Faculdade de Filosofia, Ciências e Letras

Dear Melba

I am writing to let you know that something alarming happened today. While I was in the physics dep't office, a representative of the Consulate came and told me that I should go to the consulate for "registration and inspection of passports" as is required of all American citizens. When I went there, and registered, they informed me that they were keeping my passport, and that I could stay in Brazil, but that I could get my passport back only if I returned to the U.S. He would give me no more information.

What this means I don't know. At least, it means that they only want to be sure that I stay in Brazil, but at worst, it may mean that something more serious is cooking. Frankly, I am worried. I would appreciate it if you would watch the papers to see whether anything is developing in connection with the "Weinberg case".

Well, it looks as if my brief interlude of peace is coming to an end. I wish I had used it better. This uncertainty is a bit hard on the nerves but I guess I had better get used to this uncertainty again. After all, I think I did my best work under such conditions.

When I got out of the consulate, I suddenly felt as if the U.S. had come down into Brazil. The people moved around with the comparatively placid and unworried

expressions of Brazilians, but it seemed as if the sun were being shaded by a faint cold haze that foretold the coming of the same kind of fear and tension that one sees everywhere in N.Y. It was really a shock to discover that I am not really out of the U.S. I knew it intellectually all the time, but now I really felt it. The traffic jams in São Paulo began to resemble the traffic jams in N.Y. with all their nightmarish associations (for me). And as I looked into the faces of the people, I felt that they were well meaning and good natured, but totally incapable of coping with the corrupting and destroying influences that were coming from the U.S., already visible in the form of American type advertising, American products of all kinds, American movies, etc. I had the feeling that they would not understand what was happening to them (just like the American people) and would helplessly fall into the same trap. But perhaps I was hasty in my judgement. On talking with Tiomno, I began to feel that I can get some support here, perhaps a surprising amount. People are quite different here in some ways, because the same overwhelming pressure toward uniformity is not present (although as I said, it is foreshadowed). Also, it is not as dangerous to support a person in trouble here as it is in the U.S. Time will tell.

In the midst of all this trouble, I might as well tell you of one bright ray. We have just had a 30% salary increase, so that I now earn the magnificent sum of 19,000 cruzeiros monthly, 12 months a year, worth \$1000 a month at the official exchange rate, and about \$800 in purchasing power. What I shall do with all of this wealth I don't know (Now that I can't travel). So at the last moment, I may become a wealthy man, just before wealth loses all its meaning.

Well, I expect to go to Rio in about a week to give a long talk on the quantum theory. Rio is probably hot as hell these days. São Paulo alternates. Last night was an uncomfortably cold rain. Tonight is a cold clear windy night. A few days ago, it was very hot. It is said that in Rio, there are only two seasons, Spring + Summer, while in São Paulo, there is only one, which is a mixture of all seasons in rapid alternation.

As to how to solve all of these problems, I don't know, but I am going to begin to talk to various people here, to see what their attitude is. Right now I feel almost care-free in a sort of intoxicated way, but I wonder how I will feel when I wake up in the middle of the night.

I miss very much having someone to talk to about these things. People like Tiomno and Phil Smith are very nice, but one cannot relax completely with them, because there are certain regions where there is no mutual understanding. Incidentally, I am moving in to an apartment with Smith on Dec. 15. I used to jokingly tell him that it was risky for me to share an apartment with him because (a) He may be drafted and (b) He may be killed on his motorcycle. Now he says that the risk is even bigger for him, because I may be called back to the States, leaving him responsible for all the costs. So goes life.

Please let me hear from you soon. Regards to all.

Love
Dave

Letter 31. Folder C46, not dated.

[December, 1951].

Miramar Palace Hotel
Rio de Janeiro

Dear Melba

I am now in Rio, and as was to be expected, it is hot. The first thing that happened to me in Rio is that I caught an intestinal infection which left me tired, so that the trip is not too enjoyable. Rio itself is in an incomparable setting of bay, ocean, mountains and rocks, which is even more spectacular than San Francisco. It is particularly impressive from the air, from which you can see tall modern apartment buildings sitting at the bottoms of steep valleys, with the tops of the buildings almost in contact with the tops of the hills. Alongside the hills are homes, set in rather dense tropical vegetation. When one sees the city at close quarters, however, it seems a bit shabby and dirty, compared with expectations aroused by the air view. There are many incredibly poor hovels only a short distance from the most magnificent apartment buildings. I am staying at a rather expensive hotel to which I was sent by the people at the Center. This hotel faces the Copacabana beach, which is in the shape of a half-moon ringed by mountains and very steep rocks (resembling the sugar loaf). It is very spectacular and wealthy, but most of the guests are American (Feynman stays here as a regular home). Most of the Americans are not particularly attractive specimens of our compatriots. On the whole, I don't like this location, despite its beauty, and I wish I had gone to a cheaper place where Brazilians stay. Only when I got here, I didn't know where to go, since it is my first time in Rio.

Mrs. Yevick wrote me about an idea of hers to get in touch with I. F. Stone, in connection with an article on the causal interpretation of the quantum theory. Stone is organizing a socialistically inclined periodical, the "Monthly Review" and Mrs. Yevick wondered whether one shouldn't suggest to him that he write an article on the causal interpretation (after he is briefed by a letter from me and by discussions with other people). I have told her to get in touch with you and to discuss the idea with you. My own idea at present is that it would perhaps be a good thing, but that there is danger that it would come to some Congressman's eye and get me called home. Without a passport, I am a sitting duck for such an attack. What do you think of the idea?

This loss of the passport makes me feel uncomfortable. It probably does not represent an immediate danger, but it certainly does not look good from the long-run point of view. Besides I feel sort of "hemmed-in" or "choked" because I am stuck here way off in Brazil, with no one with whom I can discuss things, etc. There is much danger that I will lose interest in the whole business. I can see that at this distance, there is no hope of convincing anyone of something new. My experience with Feynman and other people proves that nobody will read a paper carefully enough to convince himself that it is correct, if it is very far from the usual run of things. Also, there may be various wrong trends, blind alleys, etc. that could be corrected

if I had enough people to talk with. And also, I find that much of my thinking was connected with talking. Very often, an idea will lie dormant until I talk about it and make it more definite. Partly because of language difficulties and partly because of a lack of people who understand, there is little opportunity for that here. I note that already much of the impetus for thinking of these problems has been reduced, and there is danger that if I have to stay here indefinitely, I may give it up because of lack of interest. Either I will have to overcome these difficulties or else solve the problems of where else to go. Neither of these alternatives is particularly easy. Ever since I lost the passport, I have been depressed and uneasy, particularly since I was counting very much on this trip to Europe as an antidote to all the problems that I have mentioned.

Please give my regards to all

Dave

Letter 32. Folder C46, not dated.

[December, 1951].

Sat. morning

Universidade de São Paulo
 Faculdade de Filosofia, Ciências e Letras
 Caixa Postal: 8105
 São Paulo

Dear Melba

Thanks very much for your letter. It looks as if they didn't plan any immediate trouble in this passport business, as nothing more has happened yet. This business about a safe - deposit box for the passport would just not have worked. You have no idea how powerful the U.S. gov't is here. Although there is a lot more freedom here than in U.S., this is not due to the relative good intentions of the Brazilian gov't but rather to their comparative ineffectiveness. Thus, it is said that when the local police really want to know about anyone's political ideas here, they get in touch with the U.S. Consul; this is much easier than it would be to find out for themselves. The police are very ineffective, and for this reason, very few Communists, for example, are actually bothered, although Communism is against the law. But a prominent Communist (such as Catunda, who is a Math prof. here), is likely to be arrested about once every six months, beaten up a bit, and then released. The Brazilian police are notoriously brutal. A hint by the American embassy would make them very interested in any individual. Moreover, the University people here are almost as scared of a red label, as their counterparts in U.S., because it interferes with the supply of money. If half of the big shots in Brazilian science knew my background, they would be very unenthusiastic about me indeed. In fact, in situations like this, experience has shown that the only possible protection is to know a powerful, courageous, liberally - inclined person, high in the gov't. It is not out of the question, that I can ultimately establish such a

connection, but it is unwise to do so now, because nothing has actually happened, and before he is called on to do something, he may have many months to think it over, discuss it with “wiser” heads, etc., and cool down quite a bit. So until we are ready to ask for something definite, it is better to say nothing to anyone. It will just scare people to hear about it.

The apartment is much nicer than the gloomy pension in which I lived. It overlooks the city from a hill - side. The rooms are moderately large, bright, and cheery. Unfurnished, the cost is about \$125 a month (purchasing power equivalent) for 2 bedrooms, bath, kitchen, living room + maids room. As Smith says, the maid’s room contains just enough room for a short maid. We use it now for storage. We have a garrulous German woman, a vegetarian and a demon of industry, to clean 3 mornings a week. We cannot force her to take more than 30 cruzeiros a morning (about a dollar). In return she forces Smith to listen to lectures on vegetarianism, etc. She believes coffee and tea are very bad for us. Smith is hiding his liquor supply, for if she discovers it, she will surely refuse to work for us.

The address is Rua Brasilis Machado 380, Apt. 703, but for the time I suggest you use the address printed on this letterhead.

The furniture here is terribly expensive. To take care of kitchen + bedrooms, we have already spent about 12,000 cruzeiros, or about \$400, another \$300 is needed to finish the job.

You will be glad to know that Pauli admits the consistency of the causal interpretation of the quantum theory, but he still objects on philosophical grounds. He refuses to believe a theory which even permits us to conceive of a separation between the observer’s thought processes (taking place in the brain) and the rest of the world. Also, the French physicists, Vigier, and Regnier write that they are getting marvellous generalizations of relativity and connections of relativity with qu. mechs, causally interpreted, but as yet, they have sent no details that I can understand. I have urgently requested such details and am waiting for their answer.

As for the British, I am not sure how helpful they are likely to be. I sent an article on quantum theory to Massey, suggesting that he sent it to Nature. $1\frac{1}{2}$ months have passed and no reply. I suspect that they are leery of such ideas until the ideas are accepted. Last year, I got a fellowship offer of £600 from Mott, provided that I was willing to work on the collective theory of electron gases. I suspect that he knew about my work on the quantum theory and didn’t want any work on such notions going on in his university. This sort of thing makes me a bit angry. Various people, when I ask them about quantum theory, say they are interested in this collective theory (in a rather pointed way), saying that it has promise of various applications, never failing to mention nuclear physics. Every time I hear this sort of thing, I cannot avoid a reaction of loss of interest in this collective theory, because every time I hear the word “nuclear physics”, it calls up to my mind an image of the most boring possible subject in the world. The surest way to discourage me from working on the quantum theory would be to continually remind me that it might be useful in nuclear physics.

Well, regards to all at 298 and on the farm

Dave

Letter 33. Folder C46, not dated.

[December, 1951].

Dear Melba

I am feeling much better now that I have recovered from my second illness, and life looks much better. I am eating a diet in which fried foods and fresh vegetables, milk and cheese are excluded (these are possible sources of infection) and supplementing it with a horrible tasting vitamin compound. I am even getting back to work. The only bad point is that the best theoretical man here, Tiomno, is going to Rio to join his wife, who is working there in the Physics dep't, teaching and doing research. I can't blame him and yet it puts a heavy load on me, not only in removing one of the few people with whom I can discuss physics, but also because he knows the ropes here. I need such a person, at least until my Portuguese is good, or else I can hardly deal with the administration and get the necessary things done. There are only 4 professors in the dep't, and of these, Schönberg is on leave for another year in Brussels. Thus I am the only professor in the theoretical group. We are trying to improve the courses, making them less high flown, and trying to get the students to do a few problems. This will be quite difficult, and Tiomno's help would have been a great aid. Also, he is the only person who can really operate at an original level in suggesting problems for graduate students, and in working closely with them. He doesn't leave till March, but to take his place, I'll have to develop in a number of directions and do a lot of work.

It turns out that I can hire an instructor, on a contract of from 1 to 2 years, at a salary of about \$4000 a year (which will be raised to \$5500 in a few months when everyone gets a 40% raise to cover the effect of the steady inflation that has been going on for 10 years). Now it also turns out that Peter Bergmann has a student, Ralph Schiller, who has read my Mss. on the quantum theory, and wants to come down here to work with me on these problems. Peter says that you can tell me about his undergraduate work at Brooklyn. If you think a great deal of him, I can probably have him hired, starting Sept. 1 1952. What do you think? Peter has a high opinion of him.

Please let me hear how things are going. Regards to all.

Love

Dave

P.S. Do you know of anyone else who would be better than Ralph Schiller?
(Not that I know anything about Schiller, but I am just looking for information).