GW Guy, in the first interview we had together, we based most of our discussion on your own career and your own experiences, and it was full of interesting and I think valuable information. I thought it was worthwhile our meeting again, because you have witnessed some very major developments, and in particular the idea of being a specialist in respiratory disease or chest disease, whatever title you care to use, was really unknown in the days when you first went into hospital. There were people with a special interest in the chest like Robert Arthur Young, but as a, as a speciality it didn’t exist, did it?

GS Well, yes, you’ve put your finger on a number of important points. The first of course is the name of the speciality, because it never has had a proper name and still hasn’t. I remember… To deal with the name first. When we were discussing the … the programme for medical training in this in Edinburgh once, the Edinburgh College [of Physicians] wanted to call it ‘respiratory diseases’ and the London College [of Physicians] was calling it ‘thoracic medicine’. And I suggested the right thing was to call it respiratory medicine, on the grounds that I didn’t reveal, that as every cell in the body respires it would mean that we would take possession of the whole of medicine. Because I think that’s a serious comment, because I do think that among all the specialities there is, it does embrace more of the whole of medicine than nearly any of the others. But anyhow, that’s, I’m sorry in a way that the London College still wants to call it thoracic medicine; I’d much rather we’d stuck to respiratory medicine, still… Now, about the beginning of the speciality, I think you’re not, you haven’t got it quite right about the, at the beginning. There were people who were specialists in respiratory disease. As you say, there was Robert Arthur Young and George Beaumont at the Middlesex and others at the other London teaching hospitals, others in the, in the other centres throughout the country. They were basically physicians who had taken an interest in and gained experience in respiratory disease, including tuberculosis. Now, at that time of course the tuberculosis was a very important part of their work. It was the major problem in what is now the field of respiratory medicine. Tuberculosis was responsible for an enormous number of deaths among young people, and an enormous amount of long-term morbidity, and of course was a major public health problem. Well now, of course, to deal with this a special service had been instituted back in the early 1900s, starting in the early 1900s, and was really in many ways the forerunner of our National Health Service. It was the first example of a publicly funded service for the, dealing with a specific disease.

GW This … the provision of sanatoria and so on?

GS It was, there was, it was an integrated service with… At least it wasn’t all that integrated, there were two aspects of it. There was the provision of tuberculosis dispensaries, which were run by local authorities, which were concerned with the diagnosis and the follow-up of tuberculosis in general. And there were the sanatoria,
also run by local authorities, which dealt with the sort of treatment that was then possible for patients with tuberculosis. So tuberculosis became a, recognised as a public health problem which should be dealt with at public expense. And that way it really was the forerunner of the idea of a National Health Service. Now, in order to run this service, there were recruited a large number of people who were employed either in dispensaries as what was called tuberculosis officers, or in sanatoria. And these groups of people really had diagnostic responsibilities perhaps in relation to other diseases than tuberculosis, but they had no therapeutic responsibilities. So a very odd sort of group in a way. Perhaps I can be a bit frank about this. They were … it was an enormous number of people involved in this, and they were a very mixed group. There were two people who were, two groups I thought were quite outstanding. There was a small group of people who were really interested in this as a problem of social, scientific, public health problem, people of high intellectual ability who went into it because of this genuine interest in this subject. There was another group who were very important, who were people who had suffered from tuberculosis themselves, pulmonary tuberculosis. Had gone through the mill, been treated in sanatoria, had been restored mainly by their own efforts more than anything that was done for them really because they were the lucky ones who had the right sort of resistance to the disease. Anyhow, restored to some sort of working ability, but felt that they should work in this field because it wasn’t quite so arduous as other things. So, these were the two. But there was an enormous number of people who came into it really, quite frankly, because it was a fairly easy option.

GW I suppose it was in a sense the sort of, a lower form than the old GP, in a sense!

GS Well, I wouldn’t like to perhaps quite honestly make these value judgements but anyhow the fact is that it was an easy option into which a lot of people of no more than average ability came. I think that’s true. So that the people concerned in the specialty really were a small group of people who were basically physicians and, like anybody else, but had taken this subject as, the clinical aspect of respiratory disease, as their specialty, and this enormous mass of people who were in the old tuberculosis service. And one of the problems we had after the beginning of the National Health Service of course was the integration of this, these somewhat disparate groups into a specialty that would be recognised as a, within the ambit of scientific medicine. I think we’ve succeeded in doing that now, and the fact that the latest president of the, of the [Royal] College [of Physicians] is Margaret Turner-Warwick is an index of our success I think in that respect.

GW Yes, indeed. But the change, the National Health Service, was just about the time that it was possible to begin to do something effective.

GS Sure. Well of course that brings up another very general problem, a point that… It did happen that in 1946/48 when the National Health Service was being planned and instituted, that the advance in medicine at that time generally was the discovery of antibacterial agents, of course including those effective against the *Mycobacterium tuberculosis*. And this of course resulted in the diminution of tuberculosis from a major problem requiring specialist attention and meriting a special service to deal with it to a problem important for those who are affected but from a public health point of view a relatively minor one. And of course this meant that the
number of people concerned specifically with tuberculosis was being diminished. And we had some problems in sort of the personal adjustments that were required within the professional body concerned during that time.

GW Not only personal of course, because there were still sanatoria being built, almost up to the time at which they became partly redundant.

GS Yes, I suppose, I don’t know when the last one was built but I don’t suppose many were built after the early fifties.

GW No, but still up to that time...

GS Yes, that’s right, that’s right. And then we had the problem of course with what to do with these buildings. We still have, but...

GW Yes. And it’s interesting that at a time when the people interested in chest diseases or respiratory medicine conquered the chief foe, that it was just then that they really began to count in scientific medicine as a discipline of their own, of standing.

GS Yes. Well, I think a lot of things contributed to that. One of them of course was that the development of the basic sciences relevant to respiratory disease, respiratory physiology for instance… When I first started in this field and went to the Brompton in 1931 as a house physician, the only apparatus we had which could test any form of respiratory function was a spirometer, an ordinary … gas, gasometer spirometer. And that was it. You measured the vital capacity and that was it. And it wasn’t really until well into the middle of the thirties that groups of people, especially on the other side of the Atlantic and partly on this side too, were realising the importance of measuring what we were doing in respiratory … measuring disability in some objective and numerical way. And the gradual introduction of that introduced a bit of science into what had been a somewhat … rather an art...

GW Yes, in some people’s hands a very, very impressive art.

GS Sure, sure. And then later things like clinical immunology came in and we began to understand far more of what was really going on. The asthmatics, and subsequently it’s extended now into the more recondite matters of the changes in the peripheral gas exchanging part of the lung, the, what I call fibrosing alveolitis and so on, and the immunological basis of all that. So that it was the possibility of dealing with this, with disease of the lungs, in a scientific manner that I think made it into a, made it possible to turn the, this somewhat amorphous group into a speciality.

GW What particular steps did you have to take to create it as a speciality?

GS Oh, I don’t think you could say we created it as a speciality. It’s rather like Topsy; ‘it growed.’ I think we had to provide the background science for people to work on it and get enough people interested in working on the scientific side of it. And forming a bridge between the laboratory workers and the clinic so that the scientific attitude pervaded the whole of our clinical work. And that’s what happened in any speciality, I suppose.
GW  But who decided what experience was necessary to become recognised as a respiratory physician?

GS  Well, I don’t suppose anybody decided. I mean, the College had a committee on it where we, where we tried to lay it down. I must say that, I mean I was the chairman of the first committee, and my approach to that was really quite empirical in the sense that I felt that it was quite unrealistic to attempt to lay down in advance more than the most general guidelines. For instance, in our report, the initial report, we didn’t distinguish as some other specialties did between those who were to be regarded as specialists, narrow specialists, and those who were general physicians with special training and experience in respiratory disease. And this was for several reasons. Because I didn’t think there was any difference of principle between these two groups. Because I think even the narrow specialists could have a very good grounding in general medicine and know what they are talking about. They’d be able to diagnose mitral stenosis when they see it without needing any apparatus, and they, you know, they should be able to recognise the simpler forms of disease in the central nervous system as well as being able to be the expert on their asthma. And from the point of view of the individual, it was quite obvious that what happens for most people coming into, as they get trained in a specialty, is that their, the course of their career is determined only in part by their predetermined ideas. You very seldom come across someone who says ‘I’m going to be this … I’m going to be a neurosurgeon’ and from the word go, when he goes to medical school, works ahead with that in view. What happens… I do know one who did that, but it’s very rare.

GW  Somebody did…

GS  But mostly is what people do is to get very general ideas as they go through as [to] the sort of thing they want to do. And so my advice to young people asking me about their careers is that they should have a general idea of what they want to do, and narrow down gradually as the opportunities come before them, and as they find out about their own abilities and desires in these matters. And that’s how it in fact works, so that it’s quite unrealistic to lay down in advance sort of detailed forms of study and experience. You can only lay down guidelines. And what happens to the chap depends, as I say, upon the development of himself and the opportunities that are presented to himself or herself.

GW  In the beginning of the NHS, or how early in the NHS did the specialty, I mean appointments to hospitals, really come in virtue of having an interest in respiratory medicine?

GS  Now, that’s a difficult question. You see, the thing was complicated by the organisational arrangements which were changing. You see, there were these tuberculosis dispensaries back in the 1930s. More and more the local authorities who were running them were calling them chest clinics, and extending their range of possible activities. Some of them were actually being brought into the premises of general hospitals, but most of them were still quite separate and they were run, as I say, by the local authorities. Where the local authority also ran the hospital that was fairly easy to do this. But in most places, however, they were run as quite separately from the hospital service. And one of the problems in the early days of the National Health Service was to integrate them – the old chest clinics, ex-tuberculosis
dispensaries – into the general ambit of, organisational ambit of medicine, get them associated with and eventually incorporated into general hospitals. And the process of doing that was difficult, and it proceeded more smoothly in some places than in others. But in the end it was, it did occur. And now of course the … every district general hospital ought to – I think does have, it certainly ought to have – a, one physician who is, with special training experience in respiratory diseases, who is also responsible for what little tuberculosis turns up.

GW Yes, which of course with AIDS infection and so on may well start again.

GS Well, that’s the problem that has developed since I retired, and which I’m glad I don’t have to deal with.

GW Just coming back to those chest clinics, were they at all interested in the, what one might call the occupational hazards of chest diseases?

GS I think the chest clinics – I’m going back to the early days when they were just moving over from being tuberculosis dispensaries – varied enormously in their range of activity and in the value of their contribution. And it depended of course on the personality of the...

GW And to some extent where they were, I suppose?

GS And where they were. Yes, that’s right. But you, certainly the better ones were get-, were very concerned with it. And indeed it was one of the virtues of the old tuberculosis service which you may… I don’t want you to think I’m entirely critical because I’m not, because there was, tremendously valuable work was done by them. One of the virtues of them was that they were very conscious of the social aspects of their work. And in many clinics the contribution that the clinic made, and the personnel of a clinic and the physician in charge of a clinic made, to the welfare of his patients in social respects was very high indeed. And I hope that we managed to carry that over into the speciality of respiratory medicine, where … I think the interest in things like occupational risks, occupational asthma, occupational pulmonary disease of other sorts, is very great. And aspects, an interest in the social aspects of disease I hope persists in it from the old tuberculosis clinics.

GW When did people begin to appreciate the importance of diseases like silicosis and similar...?

GS Oh, well, I think that was always appreciated by...

GW Was it?

GS Oh, I think so.

GW In the mining districts and...

GS Oh, certainly in the mines, you see, it was … no, you couldn’t escape it, of course. But even in London we were, we were aware of it, and those who were really interested in our work took good care to keep ourselves informed about, how
developments in that field, which was very important.

GW You had a special interest in sarcoidosis. How did that arise?

GS I suppose it arose from the diagnostic problems that it presented at a time when tuberculosis was our main concern. You see, back in the 1930s if you, if someone came to you with chronic respiratory symptoms or even no symptoms at all and certain sorts of shadows in their chest x-ray, you immediately thought this is tuberculosis. And I think the way in which we first became aware of sarcoidosis was when we came across patients who had shadows which were entirely compatible with fairly widespread chronic pulmonary tuberculosis, where the patient had very few symptoms, might have none. And the whole disease seemed to pursue an extraordinarily benign course. It didn’t progress, sometimes it just recovered spontaneously. And this was a most extraordinary phenomenon. And this … puzzle was further increased when, if we managed to get a bit of histology from somewhere – from having an enlarged lymph node or something and we took it out – we found there were beautiful tubercles present but they were non-caseating. They were not, they were not breaking down, but they were very well formed epicondyle(?) tubercles. And so this was an extraordinary problem. It was, it was resolved of course as a result of the delineation of a non-caseating form of tuberculosis, using that term in an entirely morbid anatomical way, which behaved in this way. And this of course started with the, with the dermatologists, with … I suppose Bainayen(?), Book(?), Shalman(?) who… And even our own Jonathan Hutchinson, although he unfortunately didn’t get any histology for his cases, who had shown a certain disease of the skin which had this histology, which even in some respects resembled the Mycobacterial lupus of the nodes, you see, which again behaved in an extraordinarily benign way. And the argument in the early days was of course what was the relationship of this to Mycobacterial infection? And I don’t think that’s resolved yet, but you mustn’t get me on to that, that’s my … King Charles’ head…

GW How common were these cases in those…?

GS Well, this is very difficult to tell, you see, because the … the diagnosis was difficult to establish. And I think the criteria we had in those days were not so precisely defined as we would have now, in particular the criteria for diagnosis of tuberculosis, for instance. The bacteriological techniques we had available for isolating Mycobacteria in the 1930s were by no means as sensitive as they are now. Although you used a certain amount of guinea-pig inoculation, the culture techniques were not so widely used, and so that we were quite willing to accept diagnosis of pulmonary tuberculosis without finding Mycobacteria in some circumstances. So that it’s quite clear quite a lot of patients did get put into the category of chronic indolent pulmonary tuberculosis who really had sarcoidosis, so we can’t… The problem of the incidence of sarcoidosis is a very, very difficult one indeed. The studies of its incidence on a geographical basis are very difficult.

GW By geographical do you mean within the country or international?

GS Within the country but different areas of the country, yes, yes. We, I mean for

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1 A phrase about Mr Dicks’s obsession taken from Charles Dicken’s *David Copperfield* to refer to anything that becomes an obsession or cannot be left alone.
instance there was, back in the early fifties, there was a hypothesis in the United States which you may remember that the incidence of sarcoidosis was related to the prevalence of pine forests.

GW I don’t remember that.

GS Well, it was an interesting hypothesis. And, you know, people did epidemiological studies and said it all seemed to fit, and they even did a lot of elegant work, well not always so elegant, showing that pine pollen contained agents that would cause an epithelioid cell to develop and...

GW So you sent your patients to live among the pine forests.

GS Well, you didn’t, no, no, no. Yes, you used to do that, of course. But this was, this was completely exploded. But we, in order to explode it we had to do studies of incidence in different parts of the country in relation to... Now this was attempted all over the world and a lot of negative findings were made. I still think the best study was done, was the one that we did in this, in this country when the old British Tuberculosis Association did a, as it then was, organised a study which went on over five years, when we chose three, four areas of differing geographic character with particular reference to industrialisation and the prevalence of forest, particularly pine forests. There was one down in the far west, in Cornwall and a bit of Devon. There was an area around Sheffield. There was an area of north-east and east Scotland. And where was the other one? Oh, East Anglia. And, you see, these were very widely differing, and there was one heavily industrial area around Sheffield. Well we, it was a very arduous business because we just, in order to get, ensure that we had … comparable diagnostic standards we asked everybody in these areas – physicians, ophthalmologists, dermatologists, radiologists, pathologists, anybody who might become aware of a possible diagnosis of sarcoidosis – to send us case records to London. And a panel there looked at them and made their own diagnosis on their own reasonable standards, so that although we may not always have been correct at any rate we were applying the same standards to these various areas. And there we found that there were some very interesting differences in incidence, but there was certainly no correlation whatever with pine forests. So that was, that was right out. It was a very arduous sort of thing going on for a long time involving a lot of people, and a lot of work for what people might think was very little result, but still it was a result.

GW Well, it was a negative result, but an important one. But were there any advantages of doing this from any other point of view? I mean, you got to know the incidence of…

GS Yes, well…

GW …and a better definition perhaps, of sarcoi-?

GS No, I think we got facts which have not yet been explained by any single hypothesis, but they’re waiting for an hypothesis to come up to satisfy them. And I think that is quite a valuable thing. I mean, people go round and say this is sort of botanising, this is just gathering facts without any particular ... but unless you’ve got some facts to look at, you can’t form any hypotheses and you...
GW Can you just tell me when that was done? Which, over which period of five years?

GS About 19... From about 1962 to ’7 I should think, it may have been a bit earlier. Sometime in the 1960s, anyway.

GW Yes, yes. You mentioned that this idea came up in the States. You have been a visiting professor on a fairly large number of occasions...

GS A fair number.

GW ...in widely separate places, both in the States and elsewhere, I think.

GS Yes.

GW Have these been particularly interesting to you, these experiences?

GS Oh, extremely interesting. I mean I was particularly fortunate in … not all, but most of them occurred after I’d retired from my job, which was, kept me from being idle and disinterested in things. Yes it, of course it’s interesting because you see other people’s angles on disease and you meet other people and … well, it’s just a very pleasant way of spending your time!

GW Did you concentrate on any particular disorders in the, in the course of any of these?

GS No, no, no. I was, I was going as a visiting professor to take part in the activities of the department to which I was attached and just enjoyed that, I think. I did in, in my last, one of my last visits, one to Chicago, I did a little work on my interests in the semantics of medicine that...

GW Yes, I really want to come to that. I’m not sure that we’ve quite reached that point, because I’d just like to keep you a little bit more on the problems that someone working in respiratory medicine now has. And disregarding AIDS which I mentioned a moment ago with all its, which of course can manifest itself in appalling ways and many systems, what would you say was now the intellectual challenge in respiratory medicine? Clinical and … I mean intellectually. Clinically, intellectually.

GS Well, I’ve never really been able to define cut-and-dried neat intellectual questions. And I think the problem in respiratory medicine is exactly the problem that exists throughout the whole of medicine, and that is to integrate the results of the findings in the basic sciences that are relevant to our work to the problems of individual patients. I mean that’s, that is the real intellectual problem, and you can’t concentrate one. You can say look now, you can look now and say ‘Well, at the moment it looks as though in the field of immunology a lot of interesting things are happening.’ But it’s all happening in pharmacology, in this, and in our speciality these are coming together.

GW This was just what I wanted to…
GS  These are coming together.

GW  ...the point I hoped you would make.

GS  So that you can’t, you can’t, it, you mustn’t have a one-track mind ever if
you’re going to do any good in clinical medicine. You’ve got to keep your interests
wide, interests all over the place, and encourage and see for yourself the inter-
relations between different approaches.

GW  Do you think we are set up adequately to take advantage of the information
being provided by the, from basic science?

GS  Mm ... I think that in our better centres we certainly are. And perhaps not as
well as we might be, but we are much better than we used to be. And I think also it’s
quite unrealistic to expect that sort of integration leading to advances to happen
everywhere. You can only develop it in certain areas where you happen to have the
right people at the right time.

GW  Yes, yes. Well now, let’s turn to this great interest of yours in medical
semantics. How did it arise? When did it arise?

GS  Well, I think I was always interested in it. I remember when I was a student
being very puzzled when – taking an example from what became my own field –
when people talked of bronchiectasis as a disease, the same way as they talked of
tuberculosis as a disease. And this seemed to be quite, really in what respect was
bronchiectasis a disease? Bronchiectasis certainly I could see was a name for an
anatomical abnormality, and we knew that some, that pathological changes in these
abnormal bits of the lung caused symptoms. But was this a disease in the same sense
that tuberculosis was a disease which, where we know the cause and we can define
tuberculosis by its cause? And it seemed absurd to say that ... ‘Why is a chap ill?
Because he got bronchiectasis. What’s the cause of this chap’s illness?
Bronchiectasis.’ When all you’re saying is well, he’s got this anatomical abnormality,
and you don’t know what that’s due to. Whereas if you say he’s got tuberculosis
you’re saying what the whole thing is due to. And I became aware of that elementary
problem, which I subsequently came to recognise was the logical heterogeneity of the
medical concept ‘a disease’. My thoughts in these ways were directed a little way,
this way too, in the late thirties, or in the middle thirties, early thirties. In the thirties
generally. There was a lot of problem, a lot of difficulty over the interpretation of
certain x-ray shadows, arising from what I was talking about a little earlier, the
problems of diagnosis of tuberculosis where in those days if you saw anyone with an
unexplained shadow in his lung the first thing you thought of or had to exclude was
tuberculosis, you see. And there was a terrible custom – the radiologists were largely
responsible I think – of calling any little shadow in the lung that they thought was
probably not tuberculosis a patch of pneumonitis, you see. And I thought well what
the dickens does this mean other than pneumonia? Pneumonia means the
inflammation of the lung and pneumonitis means inflammation of the lung. What the
dickens is the difference between them, you see? And I ... I argued very strongly
against this careless use of the word pneumonitis if it meant something different. If
you mean he’d got a little bit of pneumonia for God’s sake say so. And I indeed
invented some rather awkward terms; I’d rather call that a benign circumscribed pneumonia because that said I thought this was an inflammatory consolidated lung that was going to get better. And that … that was a bit pedantic but I thought it was right, you see. And then, my interest was further sharpened when in the early 1950s, 1951 I think it was, the Association of Physicians for the first time had a symposium on a topic. You know, before then it had been, the meetings had been entirely contributed to short papers. And then in ’51 they decided to have a symposium, and it was chronic bronchitis. I think Neville Oswald was largely responsible for organising it, but… Now I was asked to start by defining chronic bronchitis, you see, and I spent a long time thinking how on earth do we define what we mean by chronic bronchitis. And I adopted the view that if you’re trying to, that the meaning of the word resides in its usages. In other words, if you want to find out what a word really means you’ve got to see what the people who use the words imply by it. And it seemed to me that what people, when people were using the, doctors, informed doctors, were using the word chronic bronchitis they were referring to the state of a patient who had persistent cough and expectoration, without evidence of major structural disease in the lung. And so I suggested a definition based on these lines which was, in other words it was a, really a syndromal definition of chronic bronchitis. And it made it quite clear you can never think that chronic bronchitis cases caused anything because you don’t know what, it’s simply a description of the chap’s state. And the value of the, of that diagnosis obviously was that if you’d studied enough people who had this particular syndrome and followed them up you might know what was going to happen, you might know things that might help them, you might even find out what it was due to. Of course we did find out what it was due to eventually; it was due to cigarette smoking! So that was very important. But, so that you didn’t say ‘This chap’s suffering from chronic bronchitis, suffering from chronic bronchitis.’ He has chronic bronchitis but he’s suffering from cigarette smoking, do you see? And this seemed a nice analysis of the verbal usage of doctors. Well, I extended that further to consider the … the actual practical meanings, the practical implications of the names of diseases in other contexts. I next had to consider sarcoidosis, for instance. And here it seemed to be perfectly clear that the sort of definition that, so-called, that the Americans at that time were suggesting for sarcoidosis – ‘Sarcoidosis is a disease of unknown cause’ – and then giving a long description of it, was utterly illogical. Especially as they went on to say ‘It is a disease of unknown cause but tuberculosis and fungal infections must be excluded.’ Well, you’re claiming to know something about the cause if you say these must be excluded, you’re saying you know it’s not due to these, which is an illogicality, you see. And it seemed to me that the only solution to this problem was to recognise that the diagnosis of, diagnosis of sarcoidosis implies morbid anatomical, morbid histological findings. And so I suggested a diagnosis, a definition of sarcoidosis entirely in morbid histological terms, saying ‘When I say this chap’s got sarcoidosis I mean I expect if I got the opportunity I’d find this sort of change scattered throughout his body.’ And that’s what we really mean. And that leaves us quite free to discuss aetiology, even to say what we think it’s not due to if we like, but we mustn’t say it’s established if it’s not due to anything. And similarly with other… So that’s, so I’ve now dealt with something defined in terms of clinical syndrome of morbid anatomy. And then there’s a whole group of diseases we know that are defined in practice by specified disorders of function. I mean, if I say ‘This chap has hypothyroidism,’ I’m simply saying his symptoms by observing him are due to malfunction, hypofunction, of his thyroid gland. I’m not saying why that, what it’s due to, I’m not saying anything about histological changes.
If I do know about that I may say ‘Well it’s due to Hashimoto’s disease’ if you want to say that, but… In other words this is, there is a possibility of defining a disease in terms of a specified disorder of function. And then finally when we find an external cause for disease we change it over completely and say, use that as our primary diagnostic category for that group of patients. You see we’ve seen this development in tuberculosis throughout. If you think of it, in the, at the beginning diseases that we would now call tuberculosis appeared as phthisis, tabes mesenterica, body brain fever(?), tuberculous meningitis I suppose, Pott’s disease of the spine, the King’s Evil, you see. All these things, see. Now what brought these together, what… well, a lot of people suspected they might be related but the thing that brought them together was the morbid anatomists, when they first started discovering that they, this, they had a common morbid histological feature, the tuber-. Well, first the naked eye appearance, later morbid histological. And… you know, the name tuberculosis appeared about 1837 as a common name for those diseases which are characterised by this morbid (?) anatomical appearance. So at that stage it is morbid anatomical. Then up comes Koch⁴, and we have the possibility of defining a group on aetiological terms, and we now have to define tuberculosis as a disease caused by Mycobacterium tuberculosis. We’ve still got our problems, because we’ve got to define Mycobacterium tuberculosis. And as I pointed out in a letter to the American Review of Respiratory Disease only a year or so ago, they haven’t resolved the problem of what they’re going to call those, that disease which is caused by Mycobacteria other than Mycobacterium tuberculosis but has a morbid anatomical tuberculous… I think we should call this ‘tuberculosis due to Mycobacterium kansasii’ or ‘Mycobacterium intracellulare’ (?) or whatever it is, because this makes quite clear here we are making both a morbid anatomical and an aetiological diagnosis. And I think this analysis of the logical basis of the medical concept of a disease is very important. It destroys any idea that people might have of a unified concept of disease, so that we can regard diseases as causes of illness, which is absolute nonsense of course. But it does enable us as doctors to use the names of diseases informatively and accurately informatively, without implying more by any of our terms than we want to imply. And that’s, that was my, that’s my attitude on the semantics of medical diagnosis, in a nutshell.

GW And do you find that people … receive these ideas with pleasure? It must be a great simulation to people who are...

GS People are divided into two groups in my experience. There are ones who see what I’m about and are quite pleased with it, and there are ones who can’t understand what the hell I’m talking about and think I’m wasting my time. I’m glad to see that some people do take it, the psychiatrists are beginning to take a little interest in it, because they have awful problems...

GW Most appalling problems, yes.

GS Because their, of course their problem is that nearly all their diseases are … syndromally defined, and their problem arises when people reify syndromally defined diseases as causes of illness. Because they can’t be; they’re entirely descriptive. If I say this, I think this chap has schizophrenia you’re simply making, as far as I can see,

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⁴ Robert Koch identified tuberculosis in 1882 as caused by the Mycobacterium tuberculosis.
a descriptive statement about his behaviour and so on. You, I would think that in
using that most psychiatrists would feel that they think there must be some …
biological basis for it, in using biological in the narrow sense of reducible in some
way to physics and chemistry. I mean, there may be some chromosomal
abnormalities, some enzymatic, some … biochemical abnormalities in the background
and so on. But I think they mustn’t assume for instance that the group of patients they
call schizophrenics is a, an aetiologically homogeneous one. And I’ve suggested
recently that it would be helpful if they really acknowledged the possibility of what I
call compound diagnostic categories. That’s to say that it’s important to recognise
that the term you use to, for a disease may belong to one of these four broad universes
of discourse: clinical description or syndrome, morbid anatomy, functional
disturbance or aetiology. They’re all big diffuse groups; you can divide them up of
course. But that you may refer to, you often do refer, either overtly or cryptically, to
what I would call a compound diagnostic category including terms from more than
one of those fields. So that if they, if someone, I … for instance it seems to me that if
people found that there was some chromosomal abnormality associated with
schizophrenia, their right of course would be to separate out those cases in which they
had – for separate consideration I mean – those patients where they had discovered
that thing, and call this schizophrenia X or whatever it may be and look at that and see
if that is a homogeneous group. Rather than extrapolate, as people do tend to, they
say ‘Well all schizophrenia is due to X.’ Which is nonsense, of course. Anyhow...

GW Of course it’s a tremendous important discipline for the, for one’s own mind,
to make these sort of inquiries. I remember that … organising a conference on the use
of computers in synthesis of organic compounds. And the man from Harvard who
had done most of the work admitted that it, they weren’t getting very far with this, the
practical outcome and the possibilities, but that the discipline of having to put onto a
computer what was happening in organic synthesis had been an absolute revelation to
them all. And they felt that they had been back to school and that they were now
enormously better fitted to go ahead.

GS Well, I mean similarly the application, the attempts to apply computers to
clinical diagnosis of … has sharpened people’s appreciation of what they really do,
and appreciate the need to analyse what they’re really doing in making a diagnosis. I
mean some of the attempts to, the early attempts, to provide, to apply computers to
clinical diagnosis, were vitiated terribly by the simple analysis that diagnosis consists
of diagnosing the disease which is causing the symptoms. Which of course is
absolute nonsense. The diagnosis is a process of analysis in a way, and then a brief
statement of the results of your analysis of the situation in forms of a diagnostic
statement at the end.

GW It’s interesting to me how very generally terms come into use, without so to
speak the initial definition. I remember being involved in your field in the
emphysema when we had a meeting to discuss what we all meant by that.

GS Well, that was one of the things that arose of course out of the, carry on from
my original attempt to define chronic bronchitis, you see. We were concerned with
the definition of the terms we were using in the diagnosis of the chron-, common
chronic respiratory illness, which in this country, which is categorised by varying
amounts of hypersecretion in the bronchi airway, airflow limit, expiratory airflow
limitation, paroxysmal or persistent. That’s the group we were looking at. And of course in that we were trying to separate out groups which were ... well, likely to be mixed up. Because the respiratory system – the lungs, bronchi, lungs, alveoli – are exposed to nox-, possibly noxious influences from all over the place, not only of course that can be brought by the air from outside but brought round by the blood from the air, so that all sorts of things can happen in them. And it’s not surprising therefore that you very rarely get an entirely pure reaction, and they’re always mixed up. And your diagnosis consists of really a process of analysis. I mean there was a time when people were talking, were trying to say ‘Is this chronic bronchitis or emphysema?’ Well this was a ... a nonsense, and it’s astonishing how difficult it was to persuade people that it was nonsense. The question there is how much, how much bronchial hypersecretion is there here, how much does that ... and the liability to infections which cause, it causes? And how much damage to the lungs is there? How much limitation of airflow is there in peripheral bronchi? How much destruction of alveoli is there? In other words, emphysema. The question was a quantitative one, in other words a quantitative analysis rather than an either/or situation. But, mind you, at the extreme end of the scale of course you did get either/or situations. I mean, if you have a chap who has alpha-1-antitrypsin deficiency, homozygous alpha-1-antitrypsin deficiency, has never smoked, and at the age of sixty has a nasty over-distended emphysema of the lungs, he is pure emphysema. But if he smoked, he’ll probably get his disease at the age of thirty or younger, and he’ll be a mixed case. And on the other hand the chap who’s just smoked hard all his life is going to get a mixture of the chronic bronchitis with changes in his small airways, and a sort of patchy emphysema in his alveoli. And it’s a matter of analysing the situation for each individual patient.

GW When do you remember smoking in your own career becoming something that had to be a very significant factor?

GS Oh, I think it ... it was really only after the original Doll & Hill papers⁴, you know, on the relationship of smoking to lung cancer...

GW Before that time you...

GS ...which was so...

GW ...you would advise people probably to smoke less or whatever?

GS Well, we varied a great deal, and one used to advise them, but the evidence you see had not been collected to show that it was so. And that’s why it was so important to get the, to get the factual evidence about the relationship not only of course to lung cancer but also to those diseases associated with chronic expiratory airflow ... obstruction. So that it was really after we were alerted by the, by the lung cancer story. And indeed I, in 1953 I was, for some reason they persuaded me to go to the old television studios in Alexandra Palace and be the first person to tell the Great British public about the relationship of smoking to lung cancer.

GW  In what capacity?

GS  Because Doll…

GW  Were you chairman of the committee?

GS  No, no, no. I think Doll, I think, I don’t know, I rather suspect Richard Doll had something to do with it. He [was] approached and didn’t want to do it himself so put me up as a stooge I rather fancy. But I don’t know, I was asked to do it. I found myself put up as a sort of respectful front for a number of things in my time.

GW  Do you remember the reaction to that?

GS  Oh, very well. I had an extraordinary...

GW  What was it?

GS  Oh well, people said it was nonsense and, you know, the usual sort of resistance to any new ideas and … well, not all that way of course but there was an astonishing amount of it. People just didn’t believe it to begin with, and as you know there was a lot of distinguished statisticians tried to resist it for a long time, but were vanquished I’m glad to say in the long run. But it’s of course a major problem these days.

GW  What is surprising is to discover what other pathology comes from cigarette smoking. I mean, with cancer and so on...

GS  Well, and the effect on coronary artery disease is of course the most important that … numerically I suppose it’s the most important, though people don’t think of it so much.

GW  We now have the sad situation that whereas there’s been a big improvement in giving up smoking in this country there’s less in many countries, and of course in some of the third world a considerable increase. So that we are building up a situation where lung cancer and other disorders are likely to be terrifyingly...

GS  Well, it’s another example of uncontrolled financial exploitation of the weak, which we see in this country now only too well.

GW  We have just a few minutes left and will turn to one other totally different area of your interests, and that is in music. Would you just like to say a word about that? Because it’s been a life-long interest, I presume.

GS  Yes, it has. I mean, I was, I was lucky, if you want to be personal about it… My father was almost self-taught in music. He was, I think I told you he was a schoolmaster...

GW  Playing?
GS He played the piano and he could play a score from Tonic Sol-fa. I remember we had, he had *The Messiah* in the Tonic Sol-fa score, and when I was a young lad – eight, nine, ten, eleven – I had quite a nice voice and he would take me through the whole of *The Messiah*. I could sing all the arias in *The Messiah*. He just transposed of course, so I could even sing *Why do the Nations*, in my treble, you know! And you could do that to *I know that my redeemer liveth*, you see. So I was grounded in that sort of way in good old 18th century solid music. And then I was, I was taught the piano, which I was never very good at, but I still desperately try to play at least one of the forty-eight reasonably correctly, you know. But, and then, you know, when I went to medical school I was, wasn’t able to continue an active interest in music, but I started going to concerts and so on. I would go to, I remember I first went to the old Promenade concerts at the Queens Hall in about 1921 when I was fourteen, where you could walk in of course in the middle of the evening for two bob, and you go into the Promenade and hear what you want. And you could get a thirty-five shilling season ticket for the whole season of ten weeks, and until about 1927 you could walk into the Promenade and out again because it was never crowded but… And so I got interested in music in that way, and I now, just a wide interest in a good deal of music.

GW Well, I think we have on that note to end this talk together. Again, I’m very grateful to you, particularly for giving a personal indication really of changes which have really been dramatic and enormously beneficial in medicine. Thank you very much, Guy.

GS Well, I hope I haven’t been boring.

GW Surely not.