

A Study of Government Policy-Making In Higher
Technological Education 1944-68

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Abstract

A Study Of Government Policy-Making In Higher Technological Education, 1944-68, Submitted by Rosemary H. Vipond In Fulfilment Of The Requirement For The Degree of Doctor of Philosophy in August 1982

This study provides a detailed analysis of government policy-making in higher technological education 1944-68; and attempts to explain this in terms of a particular understanding of the policy-making process.

The introductory chapter outlines in brief the situation higher technological education was in during World War II, thereby providing the background to subsequent developments.

The second chapter looks closely at the period 1945-50 which has been depicted as one of debate ranging from the Percy Report to that of the National Advisory Council for Education in Industry and Commerce.

The third chapter is concerned with the first four years of Conservative Government and its attraction to the idea of establishing a technological institute.

Attention in the fourth chapter focuses largely on the technical colleges; the decision to establish 8-10 Colleges of Advanced Technology and the National Council for Technological Awards.

The recommendations of the Robbins Committee as they affected the development of technological education are outlined in the fifth chapter; and in the sixth, the binary policy and the setting up of the polytechnics are considered.

Two main themes underpin this study: firstly, there is the desire to re-organise the system of higher technological education on a more rational basis; and secondly, the need to increase the output of technologists. These themes, together with the ways in which they were dealt with, form the central concern of this study.

Throughout this period far-reaching reforms were proposed, but only incremental changes were made. Often these proposals were formulated in terms of a single, ideal solution. However, as this study suggests, no such solution was likely to prove workable given the constraints of the existing system: at best there would be piecemeal, marginal changes. Thus in 1968 the system of higher technological education was not very different from that of 1944: it still remained straddled between the universities and the technical colleges.

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Abbreviations

A.G.S.P.	Advisory Council on Scientific Policy
A.E.C.	Association of Education Committees
A.M.C.	Association of Municipal Corporations
A.P.T.I.	Association of Principals in Technical Institutions
A.T.I.	Association of Technical Institutions
A.T.T.I.	Association of Teachers in Technical Institutions
C.A.T.(s)	College(s) of Advanced Technology
C.C.A.	County Councils Association
C.N.A.A.	Council for National Academic Awards
C.V.C.P.	Committee of Vice-Chancellors and Principals
D.E.S.	Department of Education and Science
D.S.I.R.	Department of Scientific and Industrial Research
F.B.I.	Federation of British Industries
H.M.I.	His Majesty's Inspector
H.N.C.	Higher National Certificate
H.N.D.	Higher National Diploma
L.E.A.	Local Education Authority
M.C.T.	Membership of the College of Technologists
M.I.T.	Massachusetts Institute of Technology
N.A.C.E.I.C.	National Advisory Council on Education for Industry and Commerce
N.C.T.A.	National Council for Technological Awards
Ph.D.	Doctor of Philosophy
P.R.O.	Public Records Office
S.I.S.T.E.R.(s)	Special Institution(s) for Scientific & Technological Education and Research
T.E.S.	Times Educational Supplement
U.G.C.	University Grants Committee

Preface

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My thanks are also due to my supervisor, Professor Peter Gosden for his continued help and support over the past five years. In addition I would like to thank Dr. Owen Hartley of the Politics Department who has read the various drafts of my thesis and been ready to offer much advice and constructive criticism.

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A STUDY OF GOVERNMENT POLICY-MAKING IN HIGHER
TECHNOLOGICAL EDUCATION, 1944-68

CHAPTER 1

Policy-Making in Higher Technological Education: Introduction

A. Introduction

This study is concerned with the attempts of successive British governments to formulate and implement policy for the development of higher technological education between 1944 and 1968.

The term higher technological education is used to cover a wide range of disciplines including, for example, the many branches of engineering - civil, electrical, mechanical, chemical, etc. - as well as metallurgy, mining, applied chemistry, textiles and plastics, to name but a few, studied to degree level in either a university or a technical college.

It is in large part the technologist's grounding in basic scientific knowledge, received as part of a degree programme in applied science, that underlays the distinction between a technologist and a technician. The technologist requires such a background in order to generate ideas, to relate theory to practice in an industrial setting, to initiate new developments or improvements. The technician, by way of comparison, is concerned with the - often routine - application of a specific skill or technique within industry.

The distinction between technologists and technicians has often been difficult to draw in practice, not least because technologists have had to accept work as technicians. Such confusion might have been reduced had one been able to assert that technologists were educated solely in universities and technicians in technical colleges. However, throughout the 20th century, and most especially dating back to the period of the second World War, this has not been the case.

Rather, students were able to pursue courses in higher technology in either the universities or the technical colleges. The desire to rationalise this situation is one of the themes running through this thesis.

Having outlined in broad terms the sphere within which this study of policy-making falls, the remainder of the chapter will deal with the following: firstly, an attempt will be made to outline what I understand by the policy-making process.

Secondly, a brief summary of the source material used in carrying out this study will be given.

Thirdly, a survey of some of the recurrent issues or problems dominating the minds of those involved in the policy-making process throughout this period will be outlined to provide a backcloth against which the twists and turns of government policy can better be understood.

Finally, as a prelude to this study of policy-making in the post-war years, a brief study will be made of the situation that higher technological education was in during the war years, and an indication given of some of the ideas which were circulating as to how this might be clarified and improved upon. Particular emphasis will be placed upon the ideas being considered within the Board of Education.

B. The Policy-Making Process

What does a study of policy-making entail? My attempt to analyse government policy-making in the field of higher technological education 1944-1968 rests upon a definition of the policy-making process which owes much to the work of C. E. Lindblom.⁽¹⁾ The policy-making process evolves out of the complex relationships existing between various actors who have an interest in the development of higher technological education and who

(1)C. E. Lindblom, The Policy-Making Process (Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1968).

seek to influence its development: thus in this particular case the actors involved may include representatives of various educational associations, members of educational institutions, spokesmen of industry, and ministers and officials of government departments. All these actors have particular roles to play within the policy-making system: some are particularly concerned with putting forward arguments to persuade others to accept their case; others carry responsibility for drawing up policy documents. However, ultimately they all seek to influence or persuade each other to accept their own views about how best higher technological education might be developed. In pictorial terms it is difficult to find an adequate description of this system of pressures and influences. Lindblom suggested the system might be thought of as circular or as a ladder system.⁽¹⁾ However, perhaps a more satisfactory image might be that of a pyramid with the ministers and civil servants of the relevant government departments at the top - those who are ultimately responsible for outlining government policy in White Papers and for accepting or rejecting the recommendations put forward by various committees of inquiry - and beneath them, all those actors or groups of actors seeking to influence these policy-makers. However, it should not be forgotten that the direction of pressure is not merely one-way but two-way: if policy is to be implemented successfully ministers and civil servants need to be sure that their policies will be acceptable to the other participants in the policy-making process.

Such is the system, but how does it work? Essentially the policy-making process is an incremental one: policy is rarely altered in a radical or fundamental way in a single move, rather it develops piecemeal, slowly, each move changing the backcloth against which future policy

(1)Lindblom, op.cit., p.118.

decisions will come to be made.

It is such a series of gradual, even cautious, changes in government policy for higher technological education that will be illustrated in the ensuing chapters of this thesis. Indeed it will be seen that even in the wake of considerable debate about technological education, the result was often inaction rather than action. In addition, whilst supporting this general theory of incrementalism I shall also seek to demonstrate in subsequent chapters (see Chapters 3 and 4 in particular), that from my study of this particular policy-making process, it can be argued that at times of considerable policy confusion, when there is strong pressure for some action, mediated through strong personalities, the actions chosen represent a significant addition to all possible lines of policy choice.

Finally, in the course of this thesis, particularly through the roles of certain key individuals, the ultimately political nature of a number of the policy decisions in this field will not be allowed to pass unnoticed. Simultaneously though it will also be shown that for the most part the policy decisions taken, whilst political in the broadest sense, were not party political issues.

By adopting an essentially historical approach to this study the intention is to examine at close range the intricacies of this particular policy-making process in depth. However, throughout this thesis an effort will also be made to extrapolate from this particular case study points of contrast or comparison with other areas of educational policy-making.

C. Source Material

The primary source material upon which this study is based has consisted of Ministry of Education and other records held at the Public Records Office in London, the Minutes of the Committee of Vice-Chancellors

and Principals, 1944-65, the files of the Association of Education Committees, now lodged at the University of Leeds, and Leeds University Archive Material.

In addition to this I was fortunate in securing interviews with a number of individuals who had played some of the key roles in the development of government policy for higher technological education during the period concerned. My thanks are due to the following who gave generously of their time to discuss with me at length matters that had occurred fifteen or more years ago: the late Lord Boyle, ⁽¹⁾ Dr. E. G. Edwards, ⁽²⁾ Sir Antony Part, ⁽³⁾ Mr. E. E. Robinson, ⁽⁴⁾ Lord Robbins, ⁽⁵⁾ Sir Lionel Russell, ⁽⁶⁾ Sir James Tait ⁽⁷⁾ and Sir Toby Weaver. ⁽⁸⁾

The interviews were conducted on a one-to-one basis without the use of a tape-recorder. Each interviewee received a detailed list of questions which I wished to discuss with him - usually in advance of my visit - and the discussions were based on these. During the course of each interview I made lengthy notes, and tidied these up as soon as possible after the interview was over. Most interviewees seemed to find the questionnaires a useful means of jogging their memories - indeed this seemed essential given the time that had elapsed since the issues under discussion had been in the forefront of their minds.

- (1) Parliamentary Secretary, Ministry of Education, 1957-59, Minister of Education, 1962-64, Minister of State for Education (responsible for higher education), Apr-Oct 1964.
- (2) Principal, Bradford Institute of Technology, 1957-66, Vice-Chancellor, Bradford University of Technology, 1966-78.
- (3) Under-Secretary, Ministry of Education, 1954-60, Deputy Secretary, Ministry of Education, 1960-63.
- (4) Principal, Bradford College of Technology, and formerly President of the Association of Teachers in Technical Institutions.
- (5) Chairman, Committee on Higher Education, 1961-63.
- (6) Chief Education Officer for Birmingham, 1946-68.
- (7) Principal, Northampton College of Advanced Technology, 1957-66, Vice-Chancellor, City University, 1966-74.
- (8) Deputy Secretary, Ministry of Education, 1962-73.

The benefits I derived from these interviews were two-fold. On the one hand they provided a means of corroborating evidence already gleaned from other sources, and on the other hand they enabled me to achieve a closer, more personalised perspective on this policy-making process.

D. An Introduction to some of the Key Problems Recurring Throughout This Study of Government Policy-Making

The experience of World War II highlighted the nation's shortage of scientific and technologically-trained manpower. For example, the Central Register showed up the failure of the supply of technologists to meet demand, and this in turn led to the establishment of the Technical Personnel Committee⁽¹⁾ under Lord Hankey, on whose recommendation a number of short-term measures designed to alleviate short-falls in the fields of radio, engineering and chemistry were implemented.⁽²⁾ It was thus hardly surprising that in the immediate aftermath of war there was a widespread consensus in favour of trying to increase the output of technologically-trained manpower. This consensus prevailed throughout the period under consideration; and only once, in the early 1960s was any suggestion made that government policy might have gone too far along this road⁽³⁾ - a suggestion that was soon dispelled.

However, throughout this period whilst there was general agreement over the need to increase the number of technologists, there was also a marked lack of unanimity as to how this increase should be brought about. A number of alternative strategies seemed possible: either expansion

(1) Its terms of reference were: "To consider and deal with questions relating to the demand and supply of technical personnel of professional or approximately professional standard; including the determination of priority of demand for such personnel, its economic use, and measures for increasing the supply."

(2) H. M. D. Parker, Manpower - A Study of Wartime Policy & Administration (H.M.S.O. and Longmans, Green and Co., 1957) p.p. 381-27.

(3) The Long Term Demand for Scientific Manpower, (Cmd 1490) Manpower Committee of the Advisory Council on Scientific Policy (1960).

could take place in the existing universities alone, or in both the universities and the technical colleges, or in new technological institutes. How technological education might best be developed was the central question which worried those responsible for the formulation of policy in this field between 1944-68. It was around this question that intense debate developed; and it proved to be the axis around which policies came to be formulated.

That this question aroused so much argument and debate and led to the formulation of a succession of differing policies for the development of higher technological education reflected the widespread and often very confused attitudes which were exhibited towards technological education. Dating from the setting up of a number of university foundations in the second half of the 19th century including Owens College, Manchester (1851) and the Yorkshire College of Science (1874), technological education had been an accepted part of a university. However, its acceptance had sometimes been grudging and there were those who continued to regard technological education with circumspection. Thus in 1958 E. Ashby was able to write of higher technological education in the universities in the following terms:

"It was difficult enough for British universities to adapt themselves to scientific thought; it is proving much more difficult for them to adapt themselves to technological thought. For pure scientific research is akin to other kinds of scholarship: it is disinterested, pursued for its own sake, undeterred by practical considerations or popular opinion. There is no great divergence between the attitude of the physicist toward the concept of entropy and the attitude of the philosopher toward the concept of virtue. But teaching and research in technology are unashamedly tendentious and their tendentiousness has not been mellowed (as it has for medicine and law) by centuries of tradition. Technology is of the earth, earthy; it is susceptible to pressure from industry and government departments; it is under an obligation to deliver the goods. And so the crude engineer, the mere technologist (the very adjectives are symptoms of the attitude) are tolerated in universities because the State and industry are willing to finance them. Tolerated but not assimilated; for the traditional don is not yet willing to

admit that technologists may have anything intrinsic to contribute to academic life. It is not yet taken for granted that a faculty of technology enriches a university intellectually as well as materially. The attitude of universities towards technology is still ambiguous; until the ambiguity is resolved the universities will not have adapted themselves to one of the major consequences of the scientific revolution."⁽¹⁾

It was largely on account of its applied nature that some argued that technological education did not really fit in with the academic orientation of the universities. It was also considered to lack that 'liberal' aspect which was regarded as an integral part of a university education. From there it was but a short step to the view that technological education was necessarily illiberal and thus had no place in the universities. That, though, was a rather extreme view and held only by a small minority: in a sense the inadequacy of such arguments had already been partially conceded by the establishment of the 'civic' universities.

Nevertheless there was some support for the view that technological education really belonged outside the traditional universities, and there were some who argued that technological education would never achieve its true status within the existing universities. Advocates of both lines of argument lent support to the idea of establishing separate technological institutes for the development of higher technological education. Such an alternative was one which had been successfully adopted in a number of European countries e.g. Germany and Switzerland, and also in the United States. This alternative provides a recurring theme in later chapters, with the Massachusetts Institute of Technology in the United States being cited as a successful illustration of this pattern of development.

(1)E. Ashby. Technology and the Academics (Macmillan and Co. Ltd., 1958), p.p.65-66.

Reference to this alternative leads onto the inevitable question: to what extent was such a pattern likely to be viable within the British context? Without wishing to pre-empt the arguments of later chapters it should perhaps be borne in mind that in Britain the traditional universities had already opened their gates to technological education whilst in Europe and in the United States these institutes had grown up because the universities there had remained closed to applied science.

Moreover, the situation in England and Wales was further complicated by the existence of a large number of technical colleges which also offered courses in advanced technology. As there was no machinery to regulate the courses taught in these two types of institution there was, not infrequently, considerable duplication of some courses taught by universities and their neighbouring technical colleges - in some cases due to the stimulus of local demand - and the complete neglect of others.

However of yet greater concern in the context of central and local government policy-making in the field of higher technological education was the markedly different status of the two types of institution. At the institutional level, whilst the universities were the indirect responsibility of the Treasury via the University Grants Committee, the technical colleges came under the control of the local education authorities and the Ministry of Education. Thus the universities enjoyed an autonomy and a degree of academic freedom denied to the technical colleges.

Moreover, these two types of institution provided different types of education for different types of people. The universities were multi-faculty institutions offering mainly full-time courses at advanced level, and attracting students on a national basis. They attracted an educational elite - students who went straight on to higher education at the age

of eighteen, following a secondary education in public or private, or perhaps grammar schools, and who in academic terms constituted the top 2-3% of the 18-year old age-group. By contrast the technical colleges concentrated mainly on scientific and technical courses at a variety of levels ranging from courses in advanced technology to teaching fairly elementary skills and craftsmanship. These were taught mainly on a part-time basis, and attracted local students who were already in work and wanted to improve their qualifications. The age range of the students in the technical colleges was thus considerably greater than that of students in the universities. It was in the spheres of advanced scientific and technological education only that the work of these two types of institution overlapped.

These differences reflected the difference in status enjoyed by the universities and the technical colleges. There was also one further factor which reinforced this, and which proved to be of particular significance in the development of the technical colleges during the period 1944-68. This was the universities' monopoly over the awarding of degrees. The technical colleges had no award of their own which was equivalent to a university degree. At advanced level their students could study for either an external degree of the University of London, or for an internal degree of the university to which a particular college was affiliated. Both alternatives highlighted the problem of rigidity and external control of syllabuses taught in the technical colleges. This was an issue which successive attempts were made to resolve during the period under consideration.

It was on account of such problems indicated above that there was such debate over the development of government policy for higher technological education in the post-war years. Some mention should also

be made at this stage of the tendency among the public at large to hold technological education and technical expertise in low esteem. It is not easy to explain why this was so for the explanation seems to have rested in that unquantifiable measure called social prejudice or snobbery. Such an attitude seems to have been peculiar to this country - at least it was not shared on the Continent or in the United States. Unfortunately it also seems to have been reinforced by our equally unique system of technical education which has never enjoyed the same prestige as the universities.

B. Higher Technological Education During the Second World War

(a) General

In the academic year 1938-39, just before the outbreak of war, there were, according to the U.G.C. 5,288 students studying technology in British universities, and of these 4,400 were in universities in England and Wales.⁽¹⁾ The figures for the technical colleges were not nearly as precise. However, early in 1941 H. B. Wallis, Under-Secretary in the 'Technical' branch of the Board of Education, drew attention to the fact that, according to the London University Calendar there were 1,200 engineering students under the heading 'Registered External Students', and 2,389 science students. From this, though, he was unable to estimate exactly how many students were actually studying in the technical colleges.⁽²⁾ He also referred to a note on external degree students in the field of engineering prepared by H.M.I. Dr. Abbott⁽³⁾ in 1937. He had estimated that the annual number of candidates offering themselves for engineering degrees excluding the Internal Students of the

(1) University Development from 1935 to 1947, University Grants Committee (1948) 'Appendix IXb.

(2) P.R.O. ED 136/559, Memorandum by H. B. Wallis, 17 Apr. 1941.

(3) Dr. William Abbott, C.B.E. H.M. Staff Inspector for Engineering.

London Polytechnics was of the order of 200.⁽¹⁾ Another memorandum on the number of students in Further Education in 1941 put the figures at 9,000 full-time students of a senior and advanced grade, and 290,000 part-time. The subjects most commonly studied by full-time students were listed as including Commerce, Pharmacy, Engineering, General Science, Chemistry and Architecture. However, there was no further breakdown of the figures into degree-level, sub-degree-level etc. It was simply recorded that a substantial proportion of these students were preparing for external degrees of the University of London.⁽²⁾ Unfortunately there is no recourse to any more detailed figures from the Board of Education for it did not publish its annual reports between the years 1938-46. Neither do these figures tally very closely with those adopted by the Special Committee on Higher Technological Education under Lord Percy in its report of 1945.⁽³⁾ It put the figure for the annual output of engineering students with external degrees of the University of London at 100 in 1939, of which only a few were thought to be full-time. The Report also estimated that the total number of degree-level students in the technical colleges was only just over 1,200 as shown in table 1 below.⁽⁴⁾ In this context it is perhaps appropriate to note that the Percy Report considered the Higher National Certificate (H.N.C.) to be of degree standard. It was the last report to do so. By

(1) P.R.O. ED 136/669, Memorandum by H. B. Wallis, 17 Apr. 1941.

(2) P.R.O. ED 136/296, Note on Further Education, 5 Sep. 1941.

(3) This Special Committee on Higher Technological Education was set up by the Board of Education in 1944. The work of this Committee is discussed in detail in the next chapter.

(4) Table 1: Percy Report - Output of engineers 1939

Technical Colleges, Part-time degrees (H.N.C.)	1,053
" " Full-time	39
" " Internal Degree, London University)	only a few 40
" " External " " " ")	full-time 100
	<hr/>
	1,232
	<hr/>

the close of the decade the H.N.C. had come to be regarded as of sub-degree level, and the Higher National Diploma (H.N.D.) as equivalent to a pass degree.

As for the conditions in the universities and the technical colleges, whilst obviously both types of institution suffered certain hardships and shortages both during and in the immediate aftermath of war, it cannot be denied that the universities enjoyed considerably better conditions than the technical colleges. Amongst the major additions to university buildings between 1935-6 and 1944-45 the U.G.C. listed new buildings for Physics and Engineering departments at the University College, Southampton, and a new building for the Glass Technology department at Sheffield University.⁽¹⁾ As for the technical colleges, plans to invest £12 million had been drawn up in 1935-6, but shelved at the onset of war. That there was a need to improve the conditions in the technical colleges can best be appreciated by reference to the state of the Leeds College of Technology in 1936. It was described thus:

"The College of Technology is housed in ten separate buildings; in shops, attics, cellars and hutments. Some of the buildings are approximately one mile distant from the others: and in such poor condition that manufacturing firms have recently preferred to give equipment to other colleges rather than Leeds because of the unsuitability of the buildings." (2)

The following extract, written in 1945, further serves to outline the out-moded and totally inadequate condition that the technical colleges were in at the close of the second World War:

(1) University Development from 1935 to 1947, U.G.C., Appendix V.

(2) H. E. Carrington. The Development of Technical Education in England with special reference to Leeds, H.Ed. Theses, Department of Education, Leeds University, 1945, p. 196 - quotation from a pamphlet published by the Leeds Education Committee in 1936.

"The boom in the erection of buildings for Technical Education occurred during the last twenty years of the 19th century whilst the Science and Arts Departments' grant scheme was in operation, but since the opening of the present century emphasis has been on the academic secondary school. In general the buildings in use today as Technical Colleges were built to satisfy the needs of technical students of half a century ago or more, or were built for some other purpose and have been more or less adapted for tuition. Conditions and requirements of this generation are vastly different, and the facilities bequeathed to it are totally inadequate and hopelessly antiquated." (1)

(b) Higher Technological Education in the Technical Colleges Under Discussion in the Board of Education 1936 - 1944

Small though the number of advanced students in the technical colleges may have been by 1939, their presence there at all was beginning to cause concern within the Board of Education.

The problem was first raised by Wallis towards the end of 1936, in a memorandum sent to Mr. E. G. Savage (2) to be passed onto the Technical Inspectors. Wallis was particularly concerned about the effect of providing both degree and non-degree level work in a single institution, and to this end he raised the following questions:

(i) was there such a demand by employers for graduates to justify a substantial provision of full-time degree courses in the technical colleges, (ii) could it be ascertained into which industries and types of jobs the External Degree holders would go, and (iii) was there a real demand for External Degree places in the technical colleges, or were they really competing unnecessarily with the universities? By way of conclusion the memorandum stated that the technical colleges were not to be deflected from their normal activities by outside (university) influences. (3)

(1) Carrington, op.cit., p.141.

(2) Education Officer to the London ^{County} ~~City~~ Council from 1940.

(3) P.R.O. FD 46/291, 'Technical Education and University Work'. Memorandum by H. B. Wallis, (1936).

With the outbreak of war the issue went into abeyance but as early as 1941 Wallis was raising it again amongst a number of problems he was considering in respect of technical education. Concentrating on degree work carried out under the auspices of the University of London, Wallis argued:

"There has been, I think, general agreement that degree work whether part-time or full-time is a disturbing influence in the Colleges. It tends to have a disproportionate amount of attention given to it; it results in over-emphasis on academic qualifications in the staff; and it means that requirements as to equipment, sometimes unsuitable for local needs, are prescribed by the University."(1)

Interestingly, having exhibited a considerable lack of enthusiasm for degree-level work in the technical colleges, Wallis went on to question whether they provided enough by way of post-graduate courses. He also expressed regret at the exclusion of the universities from the control of the Board of Education, especially in respect of technological education.(2)

In a further memorandum, in October 1941, Wallis outlined a number of points by way of a response to some of the questions he had raised in the preceding one. Of particular note was his lack of support for any substantial increase in the number of full-time courses in the technical colleges for students over the age of 16, although he conceded that exceptions might have to be made in connection with certain industries such as building and the chemical trades. Instead Wallis favoured the expansion of part-time courses for students over 16 years old.(3) He also stressed the need to clarify the relationship between the universities and the technical colleges in respect of advanced-level courses, a view which was also shared by the Inspectors.(4)

(1) P.R.O. ED 136/669, "Some Problems in Technical Education", H. B. Wallis, 17 Apr. 1941, para 34.

(2) *ibid.*, paras 53 and 54.

(3) P.R.O. ED 136/296, "Technical Education: Post-War Policy and Organisation", H. B. Wallis, 15 Oct. 1941, para 12.

(4) *ibid.*, para 26.

By May 1942 Wallis was looking yet more closely at the relationship between the universities and the technical colleges which resulted in his preparing a detailed memorandum on the subject. He began by pointing out the extent to which the universities and the technical colleges overlapped in the provision of certain types of courses such as engineering - civil, electrical, mechanical and marine --, naval architecture and leather technology; and he also stressed that, with a few exceptions such as the relationship between the Rutherford Technical College and Kings' College, Durham University, there was usually a total lack of co-ordination between neighbouring institutions. (1)

Wallis also touched on the question of status, acknowledging that,

"It is clear that the whole problem is complicated by the question of prestige. Rightly or wrongly many Principals of Technical Colleges feel that their position is not duly recognised in the locality and they often have recourse to the establishment of London External Degree Courses in the hope of raising the status of their institutions." (2)

If Wallis lacked enthusiasm for degree-level work in the technical colleges he expressed equally strong reservations about the development of technological education in the universities:

At one time it might have been said that the Universities were solely concerned with 'disinterested' or 'academic' study and that this meant that they should devote themselves to pure science, leaving applied science to the technical colleges. This point of view no doubt has a certain value, but it could hardly be maintained unconditionally at the present time ... it seems, however, safe to say that the main field of University activity is Pure Science; that a case needs to be made for excursions into applied science; and that the question must be considered in relation to the needs and structure of the major industries." (3)

(1) P.R.O. ED 136/669 "Universities and Technical Education", H. B. Wallis, May. 1942, para 7.

(2) ibid, para 8.

(3) ibid, para 9.

Such an attitude expressed by an administrator within the Board of Education is particularly interesting: on the one hand it suggests that it was not merely members of the universities themselves who retained a certain ambiguity in their minds about the development of higher technological education within the existing universities; and on the other hand it reflects an unwillingness to recognise the place that technological education had already won for itself within the universities.

It was Wallis' initiative within the field of higher technological education which ultimately led to the establishment of a special committee to look into the various problems associated with it, and most especially into the relationship between the universities and the technical colleges in this field. Towards the end of 1942 the universities had evidently learnt of the Board of Education's interest in this question, and in November of that year, during the course of a meeting between R. S. Wood, Deputy Secretary in the Board of Education and Sir Franklin Sibly, Chairman of the Committee of Vice-Chancellors and Principals, the latter suggested that the relationship between the universities and the technical colleges in respect of technological education should be investigated by a Royal Commission or a strong departmental committee. (1)

The Board of Education decided to give the issue further consideration before consulting again with the universities, and during this period there emerged from within 'T' branch the idea that there was room to develop higher technological education in the technical colleges:

(1) P.R.O. Ed 46/292, Meeting between R. S. Wood and Sir Franklin Sibly, as recorded by Wood in a memorandum of 29 Nov. 1942.

work which would not be in direct competition with that carried out in the universities, and which could possibly best be provided for by developing, in selected existing technical colleges, national schools or departments devoted to particular branches of technology. (1)

In September 1943 the Board of Education received another deputation from the Committee of Vice-Chancellors and Principals, during which general agreement was reached on the need for an inquiry into the relationship of the universities and the technical colleges in the sphere of higher technological education. (2)

However, having reached agreement on the need to set up some sort of enquiry, there remained considerable controversy over the actual constitution of the committee and its terms of reference.

Taking the chairmanship of the committee first and foremost, right from the start Wallis saw that it was important to appoint someone of national standing, but who was not obviously connected with either the universities or the technical colleges. (3) The Board of Education considered a number of names including that of Sir Alan Barlow, Secretary to the Treasury, and Sir H. Hartley (Railways). Eventually, though, it was decided that Sir Eustace Percy should be asked, the suggestion receiving support from both the Board of Education and the universities. (4) Although Lord Percy was in a strict sense a 'university' man, then being Rector of the Newcastle Division of the University of Durham, he had always shown a considerable interest in technical education. In addition he was a former President of the Board of Education, and was thus an acceptable choice to the administrators. In recommending Lord Percy's

(1) F.R.C. ED 46/295, Note of Conference held within the Board of Education, 14 Aug. 1943, para 7.

(2) ibid, Deputation from the C.V.C.P. meets the Board of Education, 17 Sep. 1943.

(3) ibid, Memorandum from H. B. Wallis to R. S. Wood, 28 Sep. 1943.

(4) ibid, R. S. Wood to R. A. Butler, 1 Jan. 1944.

name to the President of the Board of Education R. S. Wood expressed only the slightest reservation concerning their choice:

"There is, of course, always a danger, if I may say so about one of my late Masters, that he is so full of ideas that he may a little overwhelm any Committee. On the other hand, ideas are what are wanted and my impression is that Lord Bustace offers all the possibilities of doing the job extraordinarily well."⁽¹⁾

Lord Percy accepted the chairmanship of the Committee when he met R.A. Butler, the President of the Board of Education, early in 1944.

Deciding upon the actual composition of the committee as well as its membership gave rise to yet further debate and discussion.

Initially Wallis suggested that the Committee should comprise a total of 21 members: 6 representing the universities and 6 the technical colleges, 4 representing industry and commerce and 4 official members, plus the chairman.⁽²⁾ However, following upon discussions with members of the Committee of Vice-Chancellors and Principals it was agreed not to appoint this committee on a representative basis for fear that it might prove too large and unwieldy, and possibly also ineffective if it was a balanced body of representatives of particular interests. Instead it was agreed that the President of the Board of Education should appoint a committee,⁽³⁾ but that the chairman should have the power to co-opt suitable persons to serve on sub-committees as and when the need arose.⁽⁴⁾

Early in 1944 R. S. Wood thus suggested the names of a number of people who might serve on the committee,⁽⁵⁾ and Percy was also consulted. The latter was particularly critical of the bias amongst the list of potential members towards physicists - Sir Lawrence Bragg, Sir Henry

(1) *ibid*, R. S. Wood to R. A. Butler, 1 Jan. 1944.

(2) *ibid*, H. B. Wallis to R. S. Wood, 26 Sep. 1943.

(3) *ibid*, R. S. Wood to R. A. Butler, 1 Jan. 1944.

(4) *ibid*, R. A. Butler to Lord Percy, 18 Feb. 1944.

(5) *ibid*, R. S. Wood to R. A. Butler, 1 Jan. 1944. See also

Appendix 1.

Tizard and Sir Edward Appleton were all amongst the names originally put forward.⁽¹⁾ Even when the final list of members was drawn up, Percy remained of the opinion that it was too heavily oriented towards the interests of physicists: in 1945 in a letter to Miss Ellen Wilkinson, then Minister of Education, he remarked,

"A Committee composed so predominantly of physicists and 'heavy' industrialists could not have commanded confidence if it had ventured much beyond the field of engineering."⁽²⁾

In addition Butler criticised the composition of the committee on the grounds that it would not cover such areas as textiles or the chemical industry.⁽³⁾ Eventually, though, the membership of the committee was agreed upon, as set out in Appendix 2.

In April 1944, this Special Committee on Higher Technological Education held its first meeting. The substance of the Committee's deliberations and final recommendations form the opening part of the next chapter. The foregoing should have illustrated some of the arguments and questions that were behind its establishment, as well as its origins.

(c) The Need to Clarify the Relationship Between the Universities and the Technical Colleges in respect of Higher Technological Education: Some Views Being Expressed Outside the Board of Education, 1943-44

During the last years of the second World War the Board of Education was not alone in believing that the relationship between the universities and the technical colleges in the field of higher technological education required clarification and possibly rationalisation. A number of reports published around this time, and individual expressions of opinion in the press, indicated that there was considerable

(1) ibid., Percy to Butler, 4 Feb. 1944.

(2) ibid., Percy to E. Wilkinson, Minister of Education, 10 Sep. 1945.

(3) ibid., Butler to Percy, 18 Feb. 1944.

support for looking at this matter, and for appropriate action to be taken. It is to these views that attention will now be briefly turned.

One of the first bodies to comment upon the development of higher technological education was the Parliamentary and Scientific Committee which published a report on Scientific Research and the Universities in 1943.⁽¹⁾ This report was interesting on two counts. Firstly it contained some statistical data on expenditure on the universities and on research in the U.S.A., the U.S.S.R. and Britain, which illustrated the unfavourable nature of the British position.⁽²⁾ This type of comparative analysis of educational systems and the amount of money and resources devoted to them was a standard feature in much that was written about technological education at the time; and it was used as a pointer towards a similar poor showing expected on Britain's industrial front.

Secondly, the Report raised the question of the respective functions of the universities and the technical colleges in the development of technological education, and went on to make the following recommendation:

"As a useful step towards the solution the Board of Education, which bears the responsibility for technical education, should arrange consultations to include the U.G.C. and the vice-chancellors of the universities. Consideration should also be given to the possibility of making more colleges into institutes of technology on American lines, with much more full-time work and chairs in various branches of applied science (as in the Royal College of Technology, Glasgow, and the Manchester College of Technology). It is in such places as well as the universities, that the urgently needed chairs of aeronautics, radio engineering and so on, might be found."⁽³⁾

In the same year the City and Guilds of London Institute submitted its views on the technical colleges to the Board of Education:

(1) Scientific Research and the Universities in Post-War Britain, Parliamentary and Scientific Committee (1943).

(2) ibid., paras 4 - 5.

(3) ibid., para 45.

"It is important that a broad basic education in science and other subjects should receive first consideration so that they can rank educationally as high as universities. They should be distributed so as to be linked with specialised branches of industry, associated with different districts, and their individual provision for advanced and post-graduate study and research should be planned accordingly. Apart from these, it may be possible to re-orientate or upgrade some existing institutions for this purpose."⁽¹⁾

(As regards this proposal it may be surmised that a fair amount of self-interest came into play here for the City and Guilds examinations were taken in the technical colleges, and they would obviously have welcomed the possibility of placing their certificates on a par with university degrees).

This awareness of the inferior position of the technical colleges vis-à-vis the universities implicit in these recommendations to up-grade the technical colleges was also felt within the technical colleges themselves. However, the Association of Technical Institutions and the Association of Principals in Technical Institutions stated the problem in somewhat different terms in a joint policy statement in 1944.⁽²⁾ This document took the line that the universities and the technical colleges each had a distinctive contribution to make in the field of higher technological education: the universities were viewed essentially as places of scholarship, whilst the orientation of the technical colleges was seen to be towards industrial production and design. These functions, though, had become somewhat blurred over the years -

"Each type of institution has a clearly defined field of activity but each has been guilty of considerable trespass. The university has to some extent altered its traditional outlook by too narrow a pursuit of technological development while the senior full-time course in the technical college has endangered its existence by an equally narrow pursuit of the degree qualification."⁽³⁾

(1) T.E.S. 11 Dec. 1943.

(2) Policy in Technical Education, Report by a joint committee of the A.T.I. and A.P.T.I. (1944).

(3) ibid.

The A.T.I. and the A.P.T.I. wanted the distinct orientation of both types of institution to be maintained. Where they saw a need for change was at the level of the award given for courses of an advanced nature in the technical colleges. They were appreciative of the prestige attached to degrees and suggested that one alternative might be for the technical colleges to associate themselves with their neighbouring universities so that degrees in technology could be conferred on successful students from the technical colleges.⁽¹⁾ A more preferable solution still to the A.T.I. and the A.P.T.I. was that of establishing a system analogous to that for H.N.Ds, i.e. a joint committee representative of industry, the professional bodies, the Board of Education and the technical colleges, but which would have the power to award degrees in technology. Ideally these awards would remain distinct from university degrees involving a period of 'college apprenticeship' or its equivalent and possibly the submission of an industrial thesis.⁽²⁾

There were also a few individuals within the technical colleges who realised that the relationship between the universities and their own institutions called for some re-adjustment. One such person was H. Richardson, Principal of the Bradford Technical College, who in September 1943 sent a letter to The Times arguing that some of the country's largest technical colleges should be developed into technological institutes on the American model.⁽³⁾

Perhaps it should be noted at this juncture that in some respects the Bradford Technical College constituted rather a special case amongst the technical colleges, not least because it had been trying to achieve

(1) ibid.

(2) ibid.

(3) The Times, 30 Sep. 1943.

university status ever since its neighbouring university of Leeds had received a separate Royal Charter at the turn of the 20th Century when the Victoria University broke up. Nor was Richardson fighting for university status for his college alone. He was supported by Mr. Leach, M.P. for Bradford Central who put a question to the President of the Board of Education in the House of Commons in the summer of 1943⁽¹⁾ and by Bradford's Education Committee under the direction of Thomas Boyce. In February 1944 Boyce and Richardson submitted a report to their education committee advising that university college status be sought for the college.⁽²⁾

However, this proposal was not supported by H.M.I. J.B.M. Hay. In December 1943 he sent Wallis and Elliot some newspaper cuttings on this issue from the Bradford Yorkshire Observer and added his own view on the matter:

"The independence of the Universities has led to so much uneconomic duplication of classes (Bradford and Leeds for example have both considerable numbers of degree students in Engineering, which if combined would give a very strong School of Engineering) and a hiatus near the top of the Technical Educational System which cannot be overcome. To increase the number of independent institutions would simply aggravate these difficulties."⁽³⁾

In the event, Bradford's request for university status was not met in 1944. The U.G.C. decided against the development of any more new university institutions with the exception of the University College at Keele.⁽⁴⁾

Returning to the situation in 1943 it is clear that as war drew to a close there was a general awareness of the need to improve Britain's technical education at all levels, and a realisation of its utmost

(1) P.E.S. 10 July 1943.

(2) Education, Vol. LXXXIII, 7 Apr. 1944, p. 418.

(3) P.R.O. ED 46/259, Hay to Wallis and Elliott, 18 Dec. 1943.

(4) At the end of World War II the U.G.C. also agreed to recognise the University Colleges at Hull and Leicester for grant purposes for the first time.

importance for the future. Apart from at Bradford, though, there seems to have been little thought given to what an increase in advanced-level work might mean for the technical colleges themselves. The primary consideration in the technical colleges was to try and meet student demand whether it was for advanced or lower-level courses.⁽¹⁾

However, some attention was concentrated on the awards issue. For example, in 1945 T. J. Drakeley, Principal of the Northern Polytechnic, London, presented a paper to the Annual General Meeting of the A.T.I. in which he argued in favour of establishing a non-university institution which would award the equivalent of university degrees in the technical colleges.⁽²⁾ During the course of this paper Drakeley expressed considerable alarm that the technical colleges might lose their advanced level courses to the universities, a fear partly substantiated in his own mind by the views expressed by Dr. Priestley, Vice-Chancellor of Birmingham University: Drakeley argued,

"The respective roles of the universities and technical colleges in higher education is a subject upon which a departmental committee has been asked to report. To express anxiety, therefore, at Dr. Priestley's dictum that the university is the correct place for the development of technical education at its highest level might prove subsequently to have been a needless alarm. But it calls for the greatest vigilance."⁽³⁾

Several other reports were also published at about this time concerning the respective functions of the universities and the technical colleges. For example, in January 1943 Nuffield College, Oxford published a pamphlet entitled 'Industry and Education - A Statement',⁽⁴⁾ which came to the broad conclusions that it did not support the idea of

(1) View expressed by Dr. E. G. Edwards in interview on 6 May 1980.

(2) Education, Vol. LXXXV, 1 June 1945, p 794.

(3) ibid.

(4) The pamphlet was the outcome of a private conference held at the college in September 1942.

up-grading a few technical colleges to university status, nor did it wish to see technological education concentrated solely in existing universities. Rather it favoured the setting up of 'People's Colleges', equipped to train students for a wide range of differing vocations.

The Association of Scientific Workers also entered the debate with a report on science in the universities which looked forward to a time when the technical colleges would become affiliated to the universities.⁽¹⁾ There was also a report on post-war university education by the British Association for the Advancement of Science.⁽²⁾

(d) Some Concluding Remarks

The foregoing views were important for a number of reasons. In the first place they indicated the great diversity of ideas which were abounding at this time concerning the future development of higher technological education. Secondly they underline the fact that ideas about its development were still fluid, shifting, not fixed or even hardening.

Thirdly, and of particular significance in the context of the next chapter which concentrates on the developments between 1944 and 1950, it reiterates and confirms a point made earlier in this introduction, namely that by 1944 there was a strong underlying consensus which supported the idea of clarifying and rationalising the respective functions of the universities and the technical colleges in the field of higher technological education.

(1) Science in the Universities, Association of Scientific Workers, Mar. 1944.

(2) Final Report of the Committee on Post-War University Education, British Association for the Advancement of Science, (July 1944).

Chapter 2.

From Percy to Weeks: A Period of Debate, 1944-50

A. The Percy Committee: its deliberations and its report

As has already been indicated the decision to set up the Percy Committee was the result of pressure, mainly from Wallis at the Ministry of Education, who during the last years of the war became convinced that the problem of the relationship between the universities and the technical colleges in respect of advanced level work was one that needed to be tackled as soon as possible after the cessation of hostilities. Nor was the Ministry of Education alone in its appreciation of the problems and anomalies existing in this sphere. The variety of reports in the years 1943-5 which touched on this issue clearly reflected quite widespread awareness of the need to rationalise and redefine the respective contributions of the universities and the technical colleges. It was against this background, in a spirit of expectation if not optimism, that R. A. Butler, Minister of Education, appointed the Percy Committee in April 1944 with the following terms of reference:

"Having regard to the requirements of Industry, to consider the needs of higher technological education in England and Wales and the respective contributions to be made thereto by Universities and Technical Colleges; and to make recommendations, among other things, as to the means for maintaining appropriate collaboration between universities and technical colleges in this field."(1)

At the first meeting of the Committee the discussion was of a rather unstructured nature with individual members outlining what they felt were some of the key problems with which the Committee would have

(1) Higher Technological Education, Ministry of Education (H.M.S. O. 1945).

to deal. In particular Sir Lawrence Bragg spoke out about the absence in this country of any institutions on a par with the German technische hochschulen, the merit of the latter in his opinion being that they trained students for specific jobs. Also both Dr. D. S. Anderson and Sir George H. Nelson suggested that the Committee would be helped in its deliberations if industry could give some indication of its manpower requirements. (1)

From there the Committee went on to hold a succession of meetings with various interested bodies representative of industry, the universities, the technical colleges and the local education authorities, and considered also the written evidence which had been submitted to it. By adopting this approach the Committee received the evidence in a rather piecemeal fashion, simply listening to those who had a particular view to put across. For example, quite early on in the proceedings the Committee met with representatives of the Institution of Chemical Engineers who spoke out in favour of Britain developing a number of Colleges of Technology, similar to M.I.T., to supplement the existing provision of the universities and the technical colleges; (2) and then a couple of months later the Committee heard evidence from the A.T.I. and A.P.T.I. with the latter's stress upon the need to provide some sort of national award-making body so that students in the technical colleges could receive a qualification which would be of equal standing to a university degree. (3)

(1) P.R.O. ED 46/295, First Meeting of Percy Committee, 28 Apr. 1944.

(2) P.R.O. ED 46/295, Third Meeting of Percy Committee, 29 & 30 June 1944.

(3) P.R.O. ED 46/295, Fifth Meeting of Percy Committee, 1 Sep. 1944.

Thus it was perhaps hardly surprising that at the turn of the year Dr. Anderson sent a letter to Lord Percy criticising the progress of the Committee. He argued that it had been too unsystematic in its approach, spending more time in debate than on getting facts on which principles might be based. The up-shot of this was that rather than proceeding with further consideration of the draft report Lord Percy asked Dr. Anderson to put before the Committee the issues which he felt demanded closer consideration.⁽¹⁾ Clearly the method of procedure adopted by the Committee in its early stages meant that the deliberations were haphazard at best, and possibly, reflected also the fondness of its Chairman for ideas.

Returning to the views of various representative bodies, in October 1944 it was the turn of the universities to meet the Committee. The ensuing discussion provided the first explicit expression of the universities' views at that time, and for this reason is dealt with here in detail. To begin with the university representatives made three general comments: (a) that where there were close relationships between universities and neighbouring technical colleges, as at Manchester, these should not necessarily be disturbed, (b) that no 'single faculty' institution could be called a university, and (c) that no university other than London should have to create external degrees.

They then went on to make a number of points more specifically on the relationship between the universities and the technical colleges. Firstly, that any branch of technological education originally undertaken by a university because there had been no local technical college to

(1) P.R.C. ED 46/295, Tenth Meeting of Percy Committee, 4 Jan. 1945.

provide it should be removed from the university. However, any branch of technology which was closely associated with a particular university might be exempted. Secondly, that the external degrees of the University of London should not represent the ultimate goal of the technical colleges. The latter should either be a diploma of the colleges themselves - not a degree, nor an award carrying the letters of a degree; or, alternatively, degree level courses should be transferred to neighbouring universities. If necessary steps would have to be taken to show industry how valuable holders of a technical college diploma could be. (1)

These were the main views of the universities. What they amounted to was a jealous guarding of their monopoly on degrees and a staunch support for the traditional conception of a university in this country i.e. a multi-faculty institution.

Another interesting approach to the subject came from the Ministry of Education itself when R. S. Wood, the Deputy Secretary, put before the Committee the suggestion that instead of establishing institutions on a par with M.I.T. or of selecting a few technical colleges to concentrate on advanced level work, there was a third alternative, namely, the establishment of national schools concentrating on a particular technology. These, Wood suggested, could be set up within existing technical colleges. (2) The discussion which ensued between R. S. Wood and the Committee, and their obvious differences of opinion, has been dealt with elsewhere. (3) What has not been pointed out though is that prior to the establishment of the Percy Committee the Board of Education had already begun to take preparatory

(1) P.R.O. ED 46/295, Seventh Meeting of Percy Committee, 26 & 27 Oct. 1944.

(2) P.R.O. ED 46/295, Eighth Meeting of Percy Committee, 23 Nov. 1944.

(3) P.H.J.H. Gosden, Education in the Second World War, (Methuen & Co. Ltd. 1976).

steps towards the establishment of such schools, and in November 1943 the Board had met representatives of the Treasury with whom the scheme was agreed upon in principle.⁽¹⁾ This point should be borne in mind and contrasted with the later recalcitrance of the Ministry of Education to up-grade a few colleges to the status of Colleges of Technology.

A final point to come out of the Committee's meetings arose during discussions with representatives of the Federation of British Industries. C. Tennyson, Chairman of the F.B.I's Education Committee commented upon the difficulty of getting any precise numerical estimate of industry's post-war technological manpower requirements, and he was only able to speak in the most vague terms about there being a need for a greater flow of technological ability into industry than there had been in the past.⁽²⁾ This suggests that the effectiveness of the Technical Personnel Committee under Lord Hankey had been of a minimal nature, and had not penetrated the thinking of the F.B.I. to any significant extent!

Having seen or heard all the relevant evidence the Committee came to its conclusions fairly rapidly and the report was published in November 1945.⁽³⁾ Contrary to expectation this report was not to prove the first of several. In itself it gave rise to sufficient points to keep the Ministry of Education busy. Moreover, it seems as if the composition of the Committee was such that any further collaboration might be expected to prove somewhat fruitless. Already Dr. Anderson's criticism of the Committee's method of procedure has been mentioned.

(1) P.R.O. FD 46/295, National Departments of Technology, 29 Nov. 1943.
 (2) P.R.O. FD 46/295, Fourteenth Meeting of Percy Committee, 27 Apr. 1945.
 (3) Higher Technological Education, Ministry of Education, (H.M.S.O. 1945).

In addition the Ministry of Education's assessors were sensible of a certain friction within the Committee. According to F. Bray,

"The Chairman, who had his own somewhat fixed ideas on most of the problems involved and on their solution too, found the Committee unwilling to accept his views and progress was consequently slow."(1)

As for Percy himself, he was of the opinion that the Committee was weighted too much in favour of physicists and heavy industrialists for it to be competent to make recommendations outside the field of engineering.(2)

Turning to the Report itself it is clear from its opening paragraphs that the underlying rationale of the work of the Committee was to clarify the respective functions of the universities and the technical colleges in the field of higher technological education. The Report went straight to the point:

"And here arises a question which must form one of the main subjects of our Report. For certain categories of scientists and technologists, the division of function between Universities and Technical Colleges is clear enough. Industry must look mainly to Universities for the training of scientists, both for research and development, and of teachers of science; it must look mainly to Technical Colleges for technical assistants and craftsmen. But both Universities and Colleges must share the responsibility for educating the future senior administrators and technically qualified managers of industry; and this joint responsibility is not at present defined by any clear principles, nor expressed in any joint arrangements for consultation and planning."(3)

It was on this area of joint responsibility that the rest of the Report largely concentrated. Firstly it brought to the public's attention the extent to which the technical colleges were already contributing towards technological education. It produced figures to show that just before the war the output of engineers from the two types of institution totalled approximately 2,000 per annum, of which only 35% came from the universities and 65% from the technical colleges.(4)

(1) P.R.O. ED 46/295, Bray to Wood, 27 Aug. 1945.

(2) P.R.O. ED 46/295, Percy to E. Wilkinson, 10 Sep. 1945.

(3) Higher Technological Education, para 4.

(4) ibid, para 17.

In future it suggested the output should be in the proportions of 45% and 55% respectively.⁽¹⁾ Proportionately, then, the Committee wanted to see the universities' contribution to higher technological education increased, but the majority of engineers would still be expected to come from the technical colleges.

(As has already been pointed out in the introduction, the Percy Committee equated the diplomas available at the technical colleges - Higher National Certificates and Diplomas - with university degrees and included the figures for students on these courses in the total output of engineers from the technical colleges. Subsequently the part-time qualification came to be regarded as below degree level, whilst the full-time courses were considered at best on a par with pass degrees of the universities).

Also with reference to the actual estimate of numbers required by industry it is interesting to note that the Report admitted it was,

"Very largely guesswork."⁽²⁾

Obviously it is difficult for any industry to precisely calculate its future manpower requirements but this vagueness on the part of industry does at least seem rather strange given the general feeling in the country at large that in this sphere a large deficit had to be made up after the war.

The Report then turned to consider the functions of the technical colleges more closely. In particular the Report proposed that these colleges - at least some of them - should be made responsible for a new type of course. It would be broader than the H.N.C.s, of a comparable

(1) ibid, para 22.

(2) ibid, para 12.

standard to university degree courses, but planned on different lines.⁽¹⁾

In short the Report advocated the development of sandwich courses which would integrate advanced level education with a fair amount of practical training, designed on a full-time basis.⁽²⁾ The introduction of such courses was to be restricted to just a few technical colleges at first - the Report recommended that six colleges should be so selected, excluding any in the Greater London area.⁽³⁾ The intention was that these colleges should perform a national function⁽⁴⁾ - normally the technical colleges operated on a local or regional level - and to meet this end the colleges were to be up-graded to Colleges of Technology. Ideally these institutions would be completely free to develop their own style and traditions and their own syllabuses⁽⁵⁾ although they were to remain under local authority control, perhaps receiving a higher rate of grant than other colleges in recognition of their national function.⁽⁶⁾

Ultimately it was also hoped that these colleges might award their own qualifications but in the short term some form of national recognition of the awards conferred in these colleges was thought to be necessary so that they might be readily recognised by industry.⁽⁷⁾

In the Note at the end of the Report (which might be seen as a further indication of the strength of Lord Percy's personal opinion on the problems of technological education), he speculated upon the ultimate future of these colleges. In the long-term he foresaw that they might

(1) ibid, para 22.

(2) ibid, para 23.

(3) ibid, para 29.

(4) ibid, para 30.

(5) ibid, para 28.

(6) ibid, para 30.

(7) ibid, para 53.

well be up-graded into universities. Such a view has significance within this debate. Percy, although not unsympathetic to the technical colleges, clearly distinguished between them and the universities, and felt that the transfer from one sector to the other was likely to be the inevitable - perhaps desirable - lot of the Colleges of Technology. Behind this view lay the implicit assumption that in some sense the university tradition was 'best', and that the Colleges of Technology would naturally aspire to it. Later it became clear that as far as Percy was concerned the crux of the matter was local authority control of the technical colleges.

In 1947, at a meeting of the U.G.C's Science Sub-Committee Percy argued,

"It is essential that the technical colleges should be free from the control of the L.E.A.s who cannot foster the right atmosphere, however sympathetic their outlook."(1)

This opinion was reiterated by Percy in 1950 in an address he gave to the education group of the Institute of Physics and reported on in The Times Educational Supplement:

"The report which commonly bore his name recommended, five years ago, the selection of a few technical colleges for development into institutions of higher technology and he added to the report a personal note suggesting, as a title for these institutions, the Royal Colleges of Technology. He did not have the courage in that note to say what he then believed, and now knew to be true: that no such development could be hoped for so long as technical colleges were owned and administered by local education authorities. A Royal College of Technology might be a State institution, like the Scottish central colleges, or it might be an independent institution like an English university college; but it could not be administered by a municipal committee."(2)

(1) P.R.O. U.G.C. 8/8, Minutes of the meeting of the Science Sub-Committee, 23 Sep. 1947.

(2) T.E.S. 27 Oct. 1950, p.827.

Nor was Percy alone in feeling that this control was in some sense inimical to the proper development of higher education. This matter will be dealt with more fully in respect of a policy for the Colleges of Advanced Technology and the recommendations of the Committee on 'Higher Education'.⁽¹⁾

The Percy Report also touched upon the problem of the status of technological education, and in this regard recommended that a national campaign should be started to increase the prestige of the technical professions; that there should be more information sent to schools about careers in industry; and that the question of scholarships for students of technology should be reconsidered.⁽²⁾

Related to this was the problem of a suitable award for the new courses proposed by the Committee for the Colleges of Technology. The Committee agreed that the award should be conferred by the National Council of Technology which it wanted to see set up. This body was not to be an external examining body - indeed the Committee thought the London University external degree system to be an anomaly.⁽³⁾ Rather this new body should simply approve and moderate courses of study leading to its award, should suggest standards of staffing and equipment, and maintain standards by selecting or approving the external examiners concerned with the marking of final examinations.⁽⁴⁾

However, the Committee was unable to agree on what the award should be: a diploma or a degree. In fact it was equally divided in two on this issue, and this led to the Report simply outlining the pros and cons of the two alternatives, not recommending one or the other.⁽⁵⁾

(1) Higher Education (Cmd 2154) 1963 - the Committee, appointed by the Prime Minister in 1960 was chaired by Lord Robbins.

(2) Higher Technological Education, paras 43 and 44.

(3) ibid, para 27.

(4) ibid, para 54.

(5) ibid, paras 56 - 65.

An interesting point was made in this connection by an interviewee. He explained that the West Midlands Advisory Council, in preparing its evidence for the Percy Committee, had reached the same impasse, and in the event had opted for the same way out as the Percy Committee. That in itself reflected the split on the awards issue, but more important was his perception of it: the interviewee argued that whilst those who spoke out in favour of a degree truly wanted it, those who supported a diploma also really wanted to see the technical colleges awarding degrees. However, to the latter group the awards issue was so important that it was prepared to accept a diploma as a first step along that road, fearing that if they stood out for a degree qualification they might end up with nothing at all.⁽¹⁾ This is an important point: it reflected an awareness of the need to proceed cautiously, incrementally, where the universities' monopoly over their degree - awarding powers was concerned.

The Report also made two further important recommendations. Firstly, in line with the evidence given to the Committee by R. S. Wood, it was noted that there were some branches of technology of great national importance but which required only a relatively small number of trained personnel. To this end the Report suggested that institutions concentrating on a particular branch of technology might be set up to act as a national centre in its field.⁽²⁾

Secondly it was recommended that Regional Advisory Councils should be established throughout England and Wales on the lines of those already in existence in Yorkshire, the West Midlands and in South Wales.⁽³⁾

(1) Point made in interview with Sir Lionel Russell, former Chief Education Officer for Birmingham.

(2) Higher Technological Education, para 51.

(3) ibid, para 33.

These bodies would be expected to co-ordinate the provision of technological education in their region and would be made up of representatives of the Universities, the Colleges of Technology and other technical colleges. In addition there would be a National Council of Technology responsible for national aspects of regional policies, and acting in an advisory capacity on behalf of the Ministry of Education and the University Grants Committee. (1)

B. Response to the Percy Report: the Debate drags on

When the Percy Report was published in November 1945 it was given rather a mixed reception in the press. The Times (2) reported on it reasonably favourably - in particular welcoming the proposed Regional Advisory Councils and academic boards (3) and the National Council of Technology - as did Education, (4) but the Economist and the Times Educational Supplement adopted more critical tones. The Economist argued,

"The Report makes a tentative and timid impression. The Committee seem to have underrated their opportunity and interpreted their functions too narrowly", (5)

whilst the T.E.S. criticised the recommendation to up-grade some of the technical colleges. In its opinion the Report had not offered any reason why these institutions should not in fact be given the status of university colleges, with the ultimate aim of developing them into full-grown, independent universities. (6) (Such criticism, it should be added,

(1) ibid, para 35.

(2) The Times, 7 Nov. 1945.

(3) Academic Boards, composed of the academic heads of Universities and Technical Colleges, were to advise the Governing Bodies of the participating institutions and the Regional Advisory Council on the development and co-ordination of higher technological studies in each institution and in the region as a whole.

(4) Education, Vol. LXXXVI, 9 Nov. 1945, p.719.

(5) Economist, Vol. 149, 10 Nov. 1945, p.672.

(6) T.E.S., 10 Nov. 1945, p.535.

had been anticipated by Percy in his Note at the end of the Report).

More widely it is fair to say that the recommendations concerning the Regional Advisory Councils and those about the development of particular schools of technology commanded considerable support whilst the proposal to up-grade a few colleges to the status of colleges of technology was the most controversial and disliked. Neither the universities⁽¹⁾ nor the representatives of the teachers in the technical colleges had any objection to the proposed Regional Advisory Councils, but the Association of Teachers in Technical Institutions did oppose the idea of up-grading a few colleges, and in discussion with the Ministry of Education admitted quite explicitly that its opposition was based on the fear that such a development would result in the virtual degrading of the rest of the colleges.⁽²⁾ (Clearly the A.T.T.I. had to consider the interests of all its members, not just those working in the colleges which were likely to be up-graded).

As for the Ministry of Education itself, its attitude towards the Report was somewhat mixed too. Bray,⁽³⁾ referring to the setting up of academic boards, commented -

"This is rather a weak recommendation, but it is possibly the only one that would commend itself to the Universities. The Chairman himself was very keen to get these established, and although the recommendation falls short of what is probably the most effective way of securing co-operation - namely, affiliation - it is a step in the right direction and one I think which is worth trying."⁽⁴⁾

In conversation with the A.T.T.I. the Ministry of Education also expressed its support for the idea of national schools or colleges concentrating on a particular technology, and said that it was prepared to pay a 100% grant for courses which colleges ran on a national basis.
(5)

(1) C.V.C.P. Minute 34, Report of the Committee on H.T.E., Minute of Meeting held on 23 Nov. 1945.

(2) P.R.O. MD 46/484, Record of a meeting between the A.T.T.I. and the Ministry of Education, 13 Dec. 1945.

(3) Mr. F. Bray, Under-Secretary, Ministry of Education, 1946-56.

(4) P.R.O. MD 46/295, Bray to Wood, 27 Aug. 1945.

(5) P.R.O. MD 46/484, 13 Dec. 1945.

Predictably the Ministry of Education was less keen on the idea of up-grading a few technical colleges. Again the Ministry affirmed its view that,

"Here the difficulty lies in the selection of colleges for special treatment of this kind and, of course, we might find it difficult also to persuade L.E.As to agree unless we also accept the recommendation of the Committee to give a higher rate of grant."(1)

Bray elaborated further on the difficulty of selecting a few colleges:

"The Percy Committee found themselves in a dilemma when it came to suggesting a list of colleges and decided to leave the Ministry to deal with these details. This difficulty is not surprising, for although certain colleges are obvious, such as Bradford, Manchester, and Birmingham, others are not, such as Huddersfield, Coventry, Leicester, Bolton and so on. Moreover, the Committee confused the issue to some extent by regarding the functions of these colleges as national rather than local whereas, in fact, they are both local and regional, but rarely national."(2)

These were the immediate reactions to the Percy Report. Later attitudes changed, and with hindsight M. Argles for one has described the Report as 'seminal'.⁽³⁾ Certainly in the light of subsequent developments it is fair to say that the Report has provided something of a blueprint for future developments and even in the short term the influence of this document should not be under-rated. In the years of debate which succeeded the Report it was repeatedly referred to, and its recommendations frequently endorsed and reiterated. Indeed the Report brought into perspective some of the key issues in this debate over the development of higher technological education, especially in regard to the technical colleges' contribution. Its major short-coming was its failure to get to grips with the awards issue. Otherwise the

(1) P.R.O. ED 46/295, 27 Aug. 1945.

(2) *ibid.*

(3) M. Argles, South Kensington to Robbins, (Longmans, Green & Co. Ltd. 1964), p.85.

reasons why so few of its proposals were acted upon seem to be, on the one hand, a shortage of money with which to carry out the proposals, and perhaps equally important, a clear antipathy on the part of the Ministry of Education itself to its key ideas. The Ministry of Education was quite obviously unwilling and unready to do anything about developing new full-time courses which should be concentrated in just a few technical colleges. In the view of the Ministry of Education,

"The function of the technical colleges is to deal mainly with the needs of the part-time student actually engaged in industry. It is true that full-time courses, including degree courses, are also carried on, particularly in large technical colleges, but we have never encouraged the development of this university work as we have usually found that it tended to interfere with the provision for the part-time student."⁽¹⁾

In the immediate aftermath of the Report the essential developments which the Ministry of Education were prepared to follow through in the field of higher technological education were embodied in a number of circulars. The first of these was Circular 87,⁽²⁾ published in February 1946, which recommended the establishment of Regional Advisory Councils and academic boards. Then in April of that year, in Circular 98,⁽³⁾ the first steps were taken to encourage the development of national schools or colleges concentrating on particular specialist branches of technology, alongside recommendations on the strengthening of the Governing Bodies of all major technical colleges. At about the same time Circular 94⁽⁴⁾ was also published which recommended that the pursuit of research by staff in the technical colleges should be increased.

Following upon the issue of Circular 87 the government also announced in the Commons that it was to set up a National Council of Technology

(1) P.R.O. ED 46/436, Bray to Sir Cyril Norwood, St. Johns College, Oxford, 19 Aug. 1946.

(2) Regional Organization of Further Education, Circular 87, 20 Feb. 1946.

(3) The Status of Technical, Commercial and Art Colleges, Circular 98, 10 Apr. 1946.

(4) Research in Technical Colleges, Circular 94, 3 Apr. 1946.

which, in the first instance would be asked to address itself to the awards issue.⁽¹⁾ This body would also be expected to review once again the question of up-grading some of the technical colleges, a point that the Ministry of Education had intimated to the A.T.I. and A.P.T.I. as early as December 1945.⁽²⁾ This suggests that the Ministry had no intention of up-grading the technical colleges. Instead it preferred to 'pass the buck' to yet another committee, thereby forestalling the need for action.

If the Percy Report gave rise to little immediate action in the field of higher technological education it did at least provoke a great deal of debate on the problems involved. Indeed, the period 1944-50 has been characterised as one of debate, and it was really the Percy Report which acted as a catalyst in this sphere, stimulating other bodies to look into the problems concerned, resulting in a whole host of reports on the subject. Here attention will be concentrated on the reports of three bodies in particular, each of whom made important contributions to the debate in the years 1946-48.

The first of these was the Committee on Scientific Manpower under the chairmanship of Sir Alan Barlow, which published its report⁽³⁾ in 1946. This report has probably been best remembered for its proposals concerning the increase in student numbers in the post-war era: that the output of science graduates should be doubled within the next ten years, and that this should be matched by a similar expansion on the Arts side. However, this report also considered the recent recommendations of the Percy Report. In particular the report expressed support

(1) House of Commons, Vol. 420, col 2250, 22 Mar. 1946.

(2) P.R.O. HD 46/485, Memorandum of Interview between the A.T.I., the A.P.T.I. and the Ministry of Education, 20 Dec. 1945.

(3) Scientific Manpower, (Cmd 6824), Council of the Lord President, May 1946.

for the development of full-time technological courses of degree standard at a selected and limited number of technical colleges and then it went on to support the view outlined by Lord Percy in his Note that, out of these colleges some major university institutions should in time be developed. (1)

The Barlow Report also looked at the role that the universities should play in the field of technological education and argued that,

"The measures recommended by the Percy Committee for Technical Colleges will not absolve the Universities from their responsibility for training a high proportion of the nation's first class technologists (2).

It then went on to suggest that consideration should be given to the idea of developing two or three Institutes of Technology in this country, in close contact with existing universities, but mainly concerned with graduate and postgraduate courses in technology as well as with research. (3)

The Barlow Committee (4) was made up of persons of high scientific repute. Interestingly it did not recommend that the technical colleges should help cope with the expansion of science education: that was to be concentrated in the universities.

It should also be noted that Sir Alfred Egerton, representing the Institution of Chemical Engineers, had also spoken out in support of setting up a number of technological institutes like the German technische hochschulen and America's M.I.T. when he had appeared before a meeting of the Percy Committee (5). This suggestion seems to have won more favour amongst members of the Barlow Committee than the latter, but that

(1) ibid, para 32.

(2) ibid, para 34.

(3) ibid, para 35.

(4) For composition of the Committee on Scientific Manpower see Appendix 3.

(5) P.R.O. ED 46/295, Third Meeting of Percy Committee, 29 & 30 June 1944.

might be because the Percy Committee paid only scant attention to the problems of technological education in the universities.

The Barlow Report was interesting on another score as well: it sought to put the universities' minds at rest about the financial aspects of the expansion it proposed, and it was possibly in an excellent position to do this given Barlow's own post in the Treasury. The Report made the following points -

"The great bulk of the money required for university development must come from the Exchequer and we are satisfied that, more than any other single factor, the Universities' response to any call for expansion will depend upon a wise and generous financial policy towards them on the part of the Government. We have been most forcibly impressed by the effect of monetary uncertainties upon the development of our Universities. Their whole atmosphere is impregnated by a conception of financial stringency caused not only by current lack of funds but by the fear that at some future date their income from benefactors, and mainly of course from the Exchequer, may suddenly diminish, leaving their governing bodies without funds to meet their inescapable commitments."(1)

This suggested that the Treasury had completely altered its attitude towards University finance in the post-war years and this may well have contributed to the willingness of the Universities to expand at quite a considerable rate during the 1950s and 1960s.

The second committee to publish a report closely connected with the issues in the Percy Report was the Parliamentary and Scientific Committee. It produced a report entitled 'Colleges of Technology and Technological Manpower' in 1947. In many respects it followed the outline of the Percy Report, if anything laying more stress on the contribution of the technical colleges to higher technological education. Indeed, rather than advocating the up-grading of a few technical colleges this report saw a much larger number providing courses of university standard:

(1) Scientific Manpower, para 37.

"In addition to the universities that provide courses in technology, the large colleges of technology in this country can make a substantial contribution towards satisfying the needs for technologists. The Percy Committee Report suggests there are 27 such colleges and we estimate that each college could accept in its technological courses about 600 full-time students. This means a potential student membership of 16,200 and, with a three years' full-time course, an annual output of over 5,000 trained technologists."
(1)

As for the awards issue, the Parliamentary and Scientific Committee failed to put forward any useful suggestions, merely commenting that the anomalies of the present system needed to be ironed out.
(2)

Finally there were the annual reports of the Advisory Council on Scientific Policy. This body was established in 1947 in line with a recommendation of the Barlow Report, to advise the Lord President of the Council on scientific policy, including higher technological education. It was composed of 12 - 15 members, largely chosen from amongst university scientists, and also always included the permanent deputy-chairman of the U.G.C. It did not include any representatives of the technical colleges.⁽³⁾ Its first report was published in 1948⁽⁴⁾ and the second in 1949.⁽⁵⁾ They were interesting because, contrary to the Percy Report, they argued that higher technological education should be the exclusive concern of the universities. To the A.C.S.P., at least in the late 1940s, the technical colleges did not have any role to play in this sphere.

In the next section attention is given to a special report that the Advisory Council prepared on higher technological education. It seems

(1) Colleges of Technology and Technological Manpower, Parliamentary & Scientific Committee (1947) para 9.

(2) Ibid, para 8.

(3) The original membership of the Advisory Council on Scientific Policy is set out in Appendix 4.

(4) 1st Annual Report, Advisory Council on Scientific Policy (Cmd 7465) (1948).

(5) 2nd Annual Report, Advisory Council on Scientific Policy (Cmd 7755) (1949).

to have been of quite pivotal significance in the on-going debate on the subject, from which time there seems to have developed almost two separate lines of argument, the one concerning the development of technological education in the universities, and the other the contribution of the technical colleges.

C. The Debate divides in two

(a) The Development of Higher Technological Education in the Universities, 1948-1950

In 1948 the Advisory Council on Scientific Policy published its report on 'Higher Technological Education'. It was of particular significance because unlike many of the reports that had preceded it, far from applauding the Percy Report it came out very strongly against the latter's major recommendations. It argued -

"We consider that the nation's crying need is to increase the number and improve the quality of men who have received an education up to University honours standard in both the fundamental and applied sciences. If the recommendations of the Percy Committee must be taken to mean that this need can be met either by putting a 'top storey' on certain existing technical colleges or by limiting some of them to advanced training in technology, we must make it clear that we fundamentally disagree."⁽¹⁾

The Report maintained that such a scheme was wrong in principle as well as incurring all sorts of practical difficulties. It criticised the Percy Report's recommendations on the grounds that they would thereby deny to thousands of younger, part-time students the facilities they needed; that if the up-grading took the form of granting university status to the colleges, it would raise questions of general policy for the universities which traditionally had been multi-faculty institutions; that if university status was not granted, the awards conferred on technical college students would carry little weight; and that if the

(1) Higher Technological Education, Advisory Council on Scientific Policy (1948) para 9.

use of the external degree of London University was simply used more widely, it would interfere with the traditional activities of the technical colleges. Nor did the Advisory Council like the idea of mixing higher education with lower grade work in a single institution. In the light of these arguments the Advisory Council concluded that higher technological education could only be satisfactorily provided by the universities.⁽¹⁾

The Advisory Council then went on to suggest as a long-term policy that, rather than developing technological education in an unsystematic fashion in any or all of the existing universities, it should be concentrated in just a few - in fact the Advisory Council proposed that new institutions should be set up for this purpose. The courses in these institutions would either combine pure and applied science, or a pure science undergraduate degree might be followed by a postgraduate qualification in applied science. In many respects Imperial College of Science and Technology most closely measured up to the kind of institution the Advisory Council had in mind: an institution which would have to be separately administered but which should be closely associated with the existing universities.⁽²⁾ This relationship between the technological institutes and the existing universities was somewhat ambiguous, a point remarked upon by P. D. Proctor at the Treasury, indicating simultaneously that the idea was Sir Henry Tizard's own, and had not won the support of the rest of his colleagues on the Council. Proctor felt that Tizard wanted things both ways:

"On the one hand, he insists that higher technological education ought to take its place as part of a broader education of full University quality; on the other hand, he sets his face against any

(1) ibid., para 9.

(2) ibid., para 11.

counter suggestion that the way to achieve this is to start by developing and expanding schools of technology or applied science where they already exist in Universities."(1)

Despite the ambiguity of certain of its recommendations, the Report as a whole should be seen as something of a turning point in the on-going debate on higher technological education. In the first place, coming down so heavily in favour of developing technological education in the universities alone, it reflected just how open to dispute the whole problem still was.

Secondly, following upon the publication of this Report it seems fair to suggest that thereafter the debate really divided in two. After that time it was less a question of whether technological education should be developed in either the universities or the technical colleges but, what contribution could they both make. On the one hand there was the question of how the universities should respond to the development of technology within their own walls; and on the other hand the Ministry of Education was preoccupied with the future pattern of higher technological education in the technical colleges. The two sides of the debate will be dealt with respectively below.

The Advisory Council's report received rather a mixed reception. By 1948 the U.G.C. had accepted that theirs was the responsibility for developing technological education, (2) but it remained somewhat sceptical about the idea of establishing a number of technological institutes. The U.G.C.'s Technology Sub-Committee discussed this very issue in June 1948, the Minutes of the Meeting reflecting their lack of certainty about how best to proceed:

(1) P.R.O. CAB 124/559, Proctor to Spicer, 8 July 1948.

(2) P.R.O. UGC 8/8, Minutes of Meeting, Technology Sub-Committee, 16 June 1948.

"After some discussion it was agreed that a complete concentration is impossible. Some at least of the minor technologies such as textiles are rooted in their locality, and ought not to be moved. As far as the major fields are concerned, however, it was felt there was room for argument."(1)

By the time the Technology Sub-Committee discussed the Advisory Council's report in 1948 it had come down quite firmly against the establishment of any such new institutes, (2) and this view was endorsed by the rest of the U.G.C. (3) In coming to these conclusions the opinion of Dr. A. E. Trueman, deputy-chairman of the U.G.C. and chairman of the Technology Sub-Committee, seem to have held considerable sway. In a note on the Advisory Council's report he argued,

"We have at the present time no real choice between concentration and dispersal though of course this does not exclude the progressive development of particular places."(4)

A little later Dr. A. King, Head of the Lord President's Scientific Secretariat, wrote to Sir Henry Tizard in the following terms:

"The Technology Sub-Committee of the U.G.C. and the National Advisory Council in Technology, have now both discussed the paper compiled by your Advisory Council on Scientific Policy on Higher Technological Education. The result of all this talk has been that Trueman has obtained confirmation of his contention that it is impractical to chose 2 to 3 centres and establish the new 'Imperial Colleges'. Instead they recommend choosing '6 to 10 universities' already strong or potentially strong in the applied sciences and the strengthening of these so that they will be capable of providing teaching and research of the highest type of technology." (5)

Clearly then the U.G.C. did not accept the Advisory Council's report; and at about the same time it had another opportunity to indicate its disagreement with such proposals. This arose when the U.G.C. came to consider a scheme to establish an institute of applied

(1) ibid.

(2) P.R.O. UGC 2/29, Report of the Technology Sub-Committee on the Report on H.T.E. by the A.C.S.P.

(3) P.R.O. UGC 1/2, Minutes of Meeting, U.G.C. 7 Oct. 1948.

(4) P.R.O. CAB 124/559, Note on the A.C.S.Ps Report on H.T.E. by Dr. A. E. Trueman, 10 Aug. 1948.

(5) P.R.O. CAB 124/559, King to Tizard, 26 Nov. 1948.

science at Birmingham University, a proposal which was the result of an informal suggestion made by Tizard.⁽¹⁾ Again Trueman was not keen on the idea, and objected to the disproportionate amount of money such a plan would necessitate being put at the door of one university;⁽²⁾ and eventually, in line with its response to the Advisory Council's report, the U.G.C. turned down this scheme too.⁽³⁾

Yet if the U.G.C. opposed the Advisory Council's report, the same could not be said of the Treasury. On the contrary, it showed itself to be very much in accord with the report's recommendations. On the first count, namely the development of higher technological education in the universities rather than in the technical colleges, the Treasury concurred with the Advisory Council, but felt that the latter had put forward its case too dogmatically:

"There is no reason for erecting a fence round University education and telling the technical colleges that they are on the wrong side of it and must stay there."⁽⁴⁾

Secondly, as to the idea of setting up a number of technological institutes Proctor, 3rd Secretary to the Treasury, wrote,

"Ultimately, I have no doubt that the right objective is to establish some new institutions as Sir Henry Tizard proposes, but I think it is folly to go for this at the present time if it means destroying the balance of the Universities' expansion programme and nipping in the bud promising developments which are already going forward."⁽⁵⁾

In addition to this slightly qualified support for the Advisory Council's report from the Treasury, Hall, Director of the Economic Section of the Cabinet Office, also acknowledged his sympathy for the idea of establishing institutes of technology as the Advisory Council had proposed, and went so far as to comment,

(1) P.R.O. UGC 2/29, Priestley to Trueman, 8 May 1948.

(2) P.R.O. UGC 1/2, Minutes of Meeting, U.G.C., 3 June 1948.

(3) P.R.O. UGC 2/29, Report of the Technology Sub-Committee (discussed by full U.G.C., 7 Oct. 1948).

(4) P.R.O. CAB 124/559, Proctor to Spicer, 8 July 1948.

(5) ibid.

"From this point of view, I would hope that the Lord President's Committee could give something of a lead. But even more important is the necessity to get going quickly, and to think on a large scale. Although we are limited in home investment as a whole, we could certainly divert some building labour in this direction, and I should think that quite substantial expenditure in this field would make a very large contribution to our long-term proposal."(1)

This support for some sort of technological institute should be borne in mind. Here there was clearly quite a distinct difference of opinion between the Treasury (and the Economic section of the Cabinet Office) and the U.G.C.; with a willingness on the part of those who controlled the purse strings, to see the Advisory Council's recommendations transmitted into action.

By contrast with the Treasury's support for the Advisory Council's report, it provoked quite the opposite reaction in the Ministry of Education. In a sense quite predictably the Ministry of Education refused to accept that the universities alone should be responsible for higher technological education:

"This is certainly not the time to be restrictive about training facilities for advanced technology. We need the combined efforts of both the universities and the major technical colleges."(2)

And in addition it expressed doubts about setting up a few technological institutes on the model of Imperial College on the grounds that such an arrangement would inhibit students of the applied sciences from mixing with those of other disciplines.(3)

The following month Bray expressed the Ministry of Education's attitude towards the report in less diplomatic tones than those adopted in the memorandum just quoted. He simply stated,

"In the first place we do not accept the report of the Advisory Council on Scientific Policy, and you can criticise that to your heart's content."(4)

(1) P.R.O. CAB 124/559, Hall to Proctor, 7 July 1948.

(2) P.R.O. ED 46/490, Memorandum by the Minister of Education on the A.C.S.P.'s report (a Cabinet paper), 6 July 1948, para 9.

(3) *ibid.*, para 11.

(4) P.R.O. ED 46/741, Bray to Drakeley, 24 Aug. 1948.

Apart from illustrating the diversity of attitudes still prevalent towards the problems of higher technological education in the late 1940s, the response to the report on the part of the Treasury and the Ministry of Education respectively also highlighted an underlying problematic in this field: that the number of different bodies responsible for certain aspects of higher education made it more than a little difficult to reach a single coherent policy for technological education. An awareness of this was recorded in the Office of the Lord President. In a paper on higher technological education E. M. Nicholson referred to the various steps that the Ministry of Education had already taken in the fulfilment of the Percy Report's proposals, and then he went on to argue,

"All this action has been taken before any coherent, agreed national policy has been worked out,"⁽¹⁾ and stressed the obvious need for some sort of agreement on priorities to be reached between the Ministry of Education and the universities to avoid the too great, indeed wasteful, dispersal of scant resources. That policy for higher technological education was divided between the Ministry of Education and the universities was also criticised by H. Richardson ⁽²⁾ in the Times in 1949.⁽³⁾ However, these criticisms carried little weight and as has been intimated, policies for the universities and the technical colleges continued to be developed almost independently of one another - although that is not to say that the universities were not consulted on developments planned for the technical colleges.

(1) P.R.O. CAB 124/559, Nicholson, to the Lord President of the Council, 8 July 1948.

(2) Principal, Bradford Technical College.

(3) The Times, 8 Apr. 1949.

The immediate up-shot of the Advisory Council's report was a renewed wave of interest in the arguments for and against the development of higher technological education in the existing universities and/or in new technological institutes.

Although the U.G.C. itself seemed to dislike the idea of setting up any new institutes, it was by no means clear that this attitude was shared in the universities as a whole. There were certain individuals who strongly endorsed the idea of setting up a technological institute. Lord Cherwell,⁽¹⁾ for example, was a passionate advocate of such a development, and support also came from Sir Lawrence Bragg⁽²⁾ and Sir Edward Appleton.⁽³⁾ In addition, in 1948 the University of Birmingham had put forward a proposal for setting up a technological institute, as has already been noted.

There was also support for establishing a technological institute from outside the universities, with both The Times⁽⁴⁾ and the Times Educational Supplement⁽⁵⁾ carrying articles in favour of such a development, at least on an experimental basis.

Nevertheless, there were also those who strongly opposed the idea of setting up a technological institute. Judging from a flurry of letters sent to The Times towards the end of 1949 it would seem that at least in some of the universities which had a long tradition in the field of technological education there was considerable agreement with the U.G.C.'s point of view. Thus G. H. Rawcliffe, Dean of the Faculty of Engineering at Bristol University, argued fiercely against an article in The Times which had supported the setting up of a technological institute,

(1) Lord Cherwell, Paymaster General, 1942-46 and 1951-53.

(2) Sir Lawrence Bragg, O.B.E., M.C., F.R.S., Cavendish Professor of Experimental Physics, University of Cambridge and member of the Percy Committee.

(3) Sir Edward Appleton, Principal and Vice-Chancellor of Edinburgh University from 1949, and member of the Barlow Committee and the Advisory Council on Scientific Policy.

(4) The Times, 26 Nov. 1949.

(5) T.E.S., 23 Dec. 1949, p. 885.

maintaining that,

"If it is proposed that professional engineers, and a certain number of other professional applied scientists, should no longer be educated and trained in the universities, then the weight of university opinion, and that of leading professional engineers, is very much against the sense of your article."(1)

If the academic community was confused on the issue, so were some of the arguments which were adopted to support the different cases. This was illustrated most clearly in the same series of letters to The Times mentioned above. On the one side there were those, like Lord Cherwell who opposed the expansion of technological education in existing universities on the grounds that it would throw them off balance.(2) Such was a very conservative stand to take on the issue, the main motivation behind it being a desire not to have to introduce any changes into the existing institutions. Closely linked with this attitude was the view outlined in The Times' editorial: that the expansion of technological education in the existing universities,

"Swells the size of universities and alters their character by filling them with students who are not pursuing the liberal studies."
(3)

In other words, technological education was still equated by some as being 'illiberal', or at best inimical to a liberal education. That such arguments could be marshalled in all seriousness in the late 1940s either reflected an unawareness of the extent to which technological education was already a part of most of the universities, or an unwillingness to recognise the changed purpose of the universities in the 20th century.

- (1) The Times, 3 Dec. 1949.
- (2) The Times, 30 Nov. 1949.
- (3) The Times, 26 Nov. 1949.

Not all the support for establishing technological institutes in Britain rested on such negative arguments. There were those, like Sir Ernest Barker⁽¹⁾ for example, who argued that students of technology would develop more successfully into a community of scholars in a unit of their own rather than if they were hidden away in the laboratories of existing universities: a paradox that he claimed to have observed in other technological institutes.⁽²⁾

Also there were arguments in terms of cost which theoretically at least favoured setting up technological institutes. According to Lord Cherwell, it was wasteful to provide the necessary facilities and equipment for courses in technology for less than 1,000 students.⁽³⁾

Conversely, though, there was the problem that, in the short term, any such institute would make only a minimum contribution to the output of technologists.

Over and above these arguments there was a further twist: the pattern of technological education in Britain was different from that of many continental countries or of the U.S., and to some extent Britain's problems in this field were attributed to this difference. In Britain higher technological education was divided between the universities and the technical colleges whilst most other countries had special institutions devoted to technological education and research. However, as it was pointed out,⁽⁴⁾ these comparisons generally failed to take account of the reasons why such institutes had been established in the first place, i.e. because the universities had resisted the development of courses in technology within their walls, and the pattern was often not seen as so ideal in these other countries as advocates of technological institutes in Britain claimed.

(1) Doctor of Letters, Oxford & Cambridge, Professor of Political Science, University of Cologne, 1947-8.

(2) The Times, 2 Dec. 1949.

(3) M.E.S. 2/ Jan. 1950.

(4) The Times, 3 Dec. 1949.

Moreover, it was not just the academic community which was divided on the issue. In 1949, in a report entitled, 'The Education and Training of Technologists', the F.B.I. recommended that besides the establishment of national colleges,

"The development of a small number of appropriate and suitably located existing colleges into colleges of the character of the Imperial College of Science and Technology and preferably associated with local universities should be an ultimate objective."(1)

However, such a development was not to be implemented at the expense of developing existing university departments or the upgrading of the technical colleges! In the light of such a medley of alternatives it is hardly surprising that Bray commented upon the report thus -

"The Report now is more or less in line with our present policy. There is a little confused thinking here and there and some inconsistencies, but I do not think there is anything in the Report which will give us serious embarrassment or prevent the National Advisory Council from making some recommendations."(2)

Despite the mixed response of the academic community at large to the idea of setting up one or more technological institute in Britain, and despite the attitude of the Treasury outlined above, it was the view of the U.G.C. which came to dominate at the close of the decade. In 1950 the U.G.C. published its 'Note on Technology in the Universities', a document which came down firmly in favour of developing technological education in the existing, established institutions. In support of this view the U.G.C. pointed out that in most universities there were already faculties of engineering and other technologies, and then went on to argue,

"The universities have thus done a great deal for the development of technological education in this country and have shown since the war a readiness to expand their provision at a rate comparable with the expansion of the science faculties," (3)

(1) The Education and Training of Technologists, F.B.I. (1949) para 8.

(2) P.R.O. ED 46/493, Bray to Naud, 25 June 1949.

(3) A Note on Technology in Universities, U.G.C. (1950) para 4.

and concluded,

"We have heard no suggestion from the universities that they would wish to remove the teaching of technology from their activities."(1)

The U.G.C. was not even prepared to see postgraduate work hived off into technological institutes,(2) although it did concede that a modicum of concentration was probably necessary at the research level, and by the middle of May 1949 it had drawn up some preliminary plans to this effect.(3)

Thus the views of the U.G.C. were transformed into practical policy. Why did its views gain acceptance in this way when there was considerable support for the ideas promulgated by the Advisory Council? Firstly, the forces of inertia were possibly partly responsible. After all, the policy favoured by the U.G.C. really amounted to the maintenance of existing practice.

Secondly, there was probably insufficient money available to actually go very far in implementing the Advisory Council's recommendations.

Finally it should be noted that compared to the support for continuing established practices by the U.G.C., the advocates of one or more technological institutes were mainly expressing personal views, rather than a collective opinion, and hence they might have been expected to carry less weight in the corridors of power.

(b) The Technical Colleges' Contribution to Higher Technological Education

The immediate steps taken by the Ministry of Education in the technical colleges in the wake of the Percy Report's proposals have already been outlined above. However, that still left the two most

(1) ibid, para 4.

(2) ibid, para 16.

(3) P.R.O. UGC 2/30, Report from Technology Sub-Committee on postgraduate training and research in certain branches of technology, for U.G.C. meeting, 26 May 1949.

crucial matters to be dealt with, namely, the question of whether or not a few colleges should be up-graded to the status of Colleges of Technology, to concentrate largely upon advanced level work; and the awards issue. It was with these in mind that the Ministry of Education set about the establishment of a national council of technology.

In September 1947 a working-party was set up under D. R. Hardman, Parliamentary Secretary to the Minister of Education, to draw up a constitution for a national council of technology in line with the Percy Report's suggestion. The aim of such a body, as broadly outlined by the Report was to advise both the Ministry of Education and the U.G.C. on national aspects of their policies for higher technological education, thus forming a counterpart to the Regional Advisory Councils. The working-party acted speedily, and within two months it had completed its task. Thus early in 1948 the National Advisory Council for Education in Industry and Commerce was appointed. It was composed of 72 members, 52 of which represented the Regional Advisory Councils and 20 of which were nominated by the Minister of Education. It was to represent all those with an interest in technological education including the universities, the technical colleges, industry and the local authorities: a large, unwieldy body whose first unenviable task was to attempt to outline a policy for technological education acceptable to all its members. The first chairman of the Council was Sir Ronald Weeks, Vice-Chairman of Vickers Ltd. Given the make-up of the Council many were sceptical as to what it could hope to achieve, not least Lord Percy himself. Appearing before a meeting^{of} the U.G.C.'s Science Sub-Committee in September 1947 he expressed doubts as to its effectiveness if it were to be a truly representative body, and went on from there to argue that that was an additional reason why the universit-

ies should take the initiative in the field of technological education as far as possible.⁽¹⁾ At this point it seems apposite to note that by 1947 Percy had adopted a very critical attitude towards the Ministry of Education. He had come round to the view that if the technical colleges were to be up-graded they should also be freed from the control of the L.E.A.s whom, in his opinion did not foster the right atmosphere. Equally Percy recognised that this was not a proposal that the Ministry of Education was likely to adopt, and he thus suggested that the onus for the development of technological education should be placed on the universities.⁽²⁾

The Percy Report was intentionally vague about the form that the National Advisory Council should take but certainly in one respect this body deviated from the Report's broad guidelines: the latter had visualised this body as advising both the Ministry of Education and the U.G.C. equally on the problems of higher technological education, but given its appointment by the Ministry of Education, and the nomination of 20 of its members by the Minister, it was perhaps inevitable that the National Advisory Council's relations with the U.G.C. were not as close as those between it and the Ministry of Education. This point was raised by both the Yorkshire Council for Further Education⁽³⁾ and by L. Ralphs, of the East Anglian Regional Advisory Council.⁽⁴⁾ It reflected yet again the problem of technological education being divided between the technical colleges and the universities under separate government departments. Moreover, given this situation it was perhaps to be expected that when the National Advisory Council did eventually produce a report

(1) P.R.O. UGC 8/8, Minutes of Meeting, Science Sub-Committee, 23 Sep. 1947.

(2) ibid.

(3) P.R.O. ED 46/699, Working Party Report: NACEIC, Criticism from the Yorkshire Council for F.E., Letter from S. Price to the Minister of Education, 19 Feb. 1948.

(4) P.R.O. ED 46/699, Meeting between L. Ralphs and G. W. W. Browne, H.M.I. Dr. Thorne, H.M.I. Mr. Fleming and Mr. McLuckie, 19 Mar. 1948.

on the future development of higher technological education in 1950 it was seen to have concentrated almost exclusively upon the contribution of the technical colleges.⁽¹⁾

Turning now to the work of the National Advisory Council, in 1948 it began consideration of the future development of higher technological education. This task took a considerable length of time, largely because of the system of lengthy consultations with various interested parties which the Council adopted. In the course of studying the steps taken towards the production of the Council's report particular emphasis will be placed upon the relationship of the Council to the Association of Education Committees, and the views of the Committee of Vice-Chancellors and Principals.

In August 1948, in order to assist the National Advisory Council in its deliberations, the Ministry of Education sent it a memorandum on the problems as it perceived them. The memorandum is of interest on a number of counts. In the first place it indicated that, in the short-term at least, the Ministry remained opposed to the idea of selecting just a few colleges in which to concentrate advanced level work, arguing,

"That any attempt at the moment to limit the activities of even a limited number of Technical Colleges to the needs of the advanced students would be to deny to thousands of younger part-time students the facilities they must have in order to play their part in industrial development and to prepare themselves for more responsible posts."⁽²⁾

(This echoes the view that Bray expressed to Norwood in 1946).⁽³⁾

In the light of this the Ministry of Education had adopted a system - rather piecemeal - of simply fostering advanced level courses in the technical colleges to meet particular demands. In the long-term though

(1) Lord Debates, Vol. 170, col 178, 1 Feb. 1951, a peer suggested that the report should have been entitled, 'The Future Development of Higher Technological Education in the Technical Colleges'.

(2) P.R.O. ED 46/7A1, Memo, Ministry of Education to N.A.C.E.I.C., Aug. 1948.

(3) P.R.O. ED 46/486, Bray to Sir Cyril Norwood, St. Johns College, Oxford, 19 Aug. 1946.

the Ministry still appreciated that the question remained as to whether certain colleges should be developed along the lines of the Imperial College of Science and Technology or M.I.T., catering for full-time students only.

In its memorandum the Ministry also raised the awards issue, as well as a number of more specific questions about the use of resources in the technical colleges, for example, whether a special salary scale should be introduced in colleges mainly concerned with H.N.C. or other advanced courses. Nevertheless, judging from this document it was clearly the question of how to organise advanced level work in the technical colleges that the Ministry was most concerned with.

However, turning to the discussions of the National Advisory Council itself, it was to the awards issue that most attention was directed. The question of up-grading some of the colleges was considered, but it did not assume that pivotal significance that might have been expected given the antecedents leading up to the establishment of the National Advisory Council - and in particular the weight attributed to that issue by the Percy Committee. Why the Council adopted such a strategy is not altogether clear although the reasons can be speculated upon. Firstly, as already indicated, the attitude of the Ministry of Education towards the selection of a few colleges was made abundantly clear to the Council; and possibly the latter thought that it could add little more to an issue which the Percy Committee had already dealt with so fully, and with which the Ministry of Education disagreed and refused to be swayed by.

Secondly, it should be borne in mind that many of the L.E.As would also have objected to the Percy Report's recommendations, and thus the National Advisory Council itself may not have been prepared to endorse

the Percy Report. In this respect the influence of the Association of Education Committees should be taken into account. Quite early on in the discussions held by the Council in consultation with the A.E.C. Byng Kenrick, a member of the A.E.C., spoke out against the removal of any of the technical colleges from local authority control.

(1)

The awards issue was first discussed by the Steering Committee of the National Advisory Council at the beginning of 1949. This Committee, comprising Weeks, Sir Arthur Fleming, (2) Sir Graham Savage (3) and R. S. Wood, (4) was clearly in favour of some scheme of 'affiliation' or 'sponsorship' of the technical colleges by the universities. (5) This view probably owed much to the influence of R. S. Wood since it was very much in keeping with the line taken elsewhere by other members of the Ministry of Education. For example in April 1947 when Bray had appeared before the Parliamentary and Scientific Committee's Sub-Committee on Technology he had argued in favour of the affiliation of departments of technology in technical colleges with the local university; (6) and again in March 1949 he spoke out in favour of close association between the universities and technical colleges. (7) Sir Ronald Weeks also expressed himself as personally in favour of some such scheme of affiliation - a point picked up by S. Moffett, Director of Education for

- (1) A.E.C. Files, B.105, Technological Education 1, Meeting between N.A.C.E.I.C. Steering Committee and representatives of the A.M.C., the A.E.C. and C.C.A., 8 July 1949.
- (2) - of Metropolitan Vickers.
- (3) - Education Officer, London County Council, from 1940.
- (4) - Principal of University College, Southampton, formerly Deputy Secretary, Ministry of Education.
- (5) P.R.O. ED 46/741, McLuckie, Secretary of the National Advisory Council on Education for Industry & Commerce, to Gibson and Sir Griffith Williams, 28 Feb. 1949.
- (6) P.R.O. ED 46/488, Bray before the Parliamentary and Scientific Committee's Sub-Committee on Colleges of Technology, 31 Mar. 1947.
- (7) P.R.O. EGC 8/26, Meeting of the U.G.C.'s Sub-Committee on Technology. Bray and McLuckie were present, 9 Mar. 1949.

Sheffield, who wrote to Dr. Alexander, Secretary of the A.E.C., arguing that such a view ran counter to the views of that Association. (1)

However, if the Steering Committee favoured a system of affiliation, it was not keen on forcing this alternative on the rest of the Council, (2) and when it put forward a memorandum to the Standing Committee of the Council it thus outlined what it considered to be the two main alternatives - either a system of affiliation or the establishment of a national award-making body - and their respective pros and cons. With regard to the second alternative the Steering Committee foresaw one great disadvantage, namely that the new award would have to establish itself in competition with the university degree. As for a system of affiliation, it was pointed out that there were already two methods (apart from the London External Degree) by which technical college students could obtain degrees, namely by linkage with a university on the Manchester model (that is, a department of the technical college is recognised as a faculty of the university), or by linkage on the Sunderland model (that is, senior members of the technical college staff are given the status of 'recognised teacher' in the university, and the college is represented on the University Senate). However, neither of these alternatives had proved terribly popular, and the Steering Committee suggested that others might be considered. (3)

Moreover, the Steering Committee's disposition towards a scheme of affiliation found little support amongst the other bodies it consulted. At a meeting with representatives of the Association of Municipal Corporations, the Association of Education Committees and the County Councils Association in July 1949 the tide of opinion went

(1) A.E.C. Files, B.105, S. Moffett to Dr. Alexander, 28 Feb. 1949.

(2) P.R.O. ED 46/741, McLuckie to Gibson and Sir Griffith Williams, 28 Feb. 1949.

(3) A.E.C. Files, B.105, Technological Education 1, Memorandum on H.T.E. by the Steering Committee of the N.A.C.E.I.C., 22 June 1949.

definitely in favour of some form of national award-making body. As to the title of the qualification to be awarded, in deference to the views of the universities it was agreed that any such body should confer Associateships and Fellowships rather than degrees.⁽¹⁾ On the issue of the award-granting machinery the views of the A.E.C. obviously won against those of the Steering Committee. The policy of the A.E.C. can be seen in a resolution on the problem passed at its Annual General Meeting in 1948 which read as follows:

"That this Association, while recognising the special value of university degrees, is of the opinion that existing higher qualifications in Technology, including degrees, are not appropriate to or sufficient for all the needs of industry and considers that there is a pressing need for a qualification having the prestige of a degree and representing a course of advanced training more closely adapted to the practical aspects of modern industrial processes and methods. It therefore urges the Minister of Education to take steps to bring about the institution of an appropriate body of national standing empowered to award degrees in Technology or other suitable qualification."⁽²⁾

On the actual title of the qualification the A.E.C. did not quite get its way since it favoured it being called a degree,⁽³⁾ a view also shared by the Ministry of Education itself.⁽⁴⁾

In October 1949 it was the turn of the Committee of Vice-Chancellors and Principals to be consulted by the Steering Committee, and at this meeting as well the decision went in favour of some sort of national award-making body rather than a system of affiliation. Indeed the Committee of Vice-Chancellors and Principals argued that it was a development it could most easily support and recommend to the universities individually.⁽⁵⁾

- (1) A.E.C. Files, B.105, Technological Education 1, Meeting of N.A.C.E.I.C. Steering Committee with A.M.C., A.E.C. and C.C.A. 8 July 1949.
- (2) A.E.C. Files, B.105, Technological Education 1, A.E.C., A.G.M. 1948.
- (3) A.E.C. Files, B.105, Technological Education 1, Meeting between N.A.C.E.I.C. Steering Committee and the A.M.C., A.E.C. and C.C.A. 8 July 1949.
- (4) P.R.O. UGC 8/26, Meeting of the U.G.C.s Technology Sub-Committee, with Bray present, 9 Mar. 1949.
- (5) C.V.C.P. Minutes, Minute 57 of Meeting held on 25 Nov. 1949.

As to the title of any such qualification, the Committee of Vice-Chancellors and Principals was quite adamant that it should not be a degree. In May 1949, prior to its meeting with the Steering Committee, the Committee of Vice-Chancellors and Principals had received a memorandum on this whole problem, drawn up by its own Sub-Committee on technology under Dr. Masson. The memorandum began in the following uncompromising terms -

"On 26 October 1944 the Committee of Vice-Chancellors and Principals gave written and oral evidence to the Percy Committee ... In the ensuing four years and a half there have appeared outside the Universities no developments in practice, policy, or publications which cause the Vice-Chancellors now to go back upon the views and forecast which they formulated in 1944. On the contrary, that view is felt to have been strengthened by events during the interval.(1)

With particular reference to the title of the award the memorandum argued that it would simply be false to call it a 'B. Tech' - the option favoured by the Ministry of Education⁽²⁾ -

"It would be unreal unless the academic members of it were personally active in governing - or at least continually regulating - the staffing, facilities, equipment and curricula of the College (or Colleges) of Technology concerned. To suggest that they should simply regulate the 'standards of examinations' would be to misconceive the needs of the situation and the nature of a University; and the supposedly academic cachet of the qualification (whatever its title) would frankly be a sham."(3)

As for the question of up-grading some of the technical colleges, this was discussed briefly at the meeting of the Steering Committee with the A.M.C., the A.E.C. and the C.C.A. in July 1949. Despite the practical advantages accruing to the concentration of advanced level work in the technical colleges, such as concentrating expensive, complex machinery in a few colleges and the payment of a single salary scale to

(1) C.V.C.P. Minutes, Minute 16 of Meeting held on 27 May 1949.

(2) P.R.O. UGC 8/26, Meeting of the UGC's Technology Sub-Committee, with Bray present, 9 Mar. 1949.

(3) C.V.C.P. Minutes, Minute 16 of Meeting held on 27 May 1949.

teaching staff, the representatives at the meeting decided against this alternative, preferring instead to leave the problem to be settled according to local circumstances - again reflecting the view of the A.E.C. (1)

Similarly, when financial arrangements were discussed at this same meeting in July 1949, whilst it was generally felt that a form of direct grant might be more acceptable to the Treasury, the local authority representatives favoured the provision of enhanced rates of grant through the local authority as the best means of preserving local autonomy.

In the light of these consultations it was hardly surprising that when the National Advisory Council drew up a draft report in December 1949 it came down clearly in favour of establishing a national award-making body. More precisely the draft report recommended the establishment of a Royal Institute of Technology, which would be empowered to confer associateships and fellowships on students who had successfully completed courses of advanced technology. (2)

Simultaneously the report rejected the idea of up-grading a few colleges to the status of colleges of technology in the following terms:

"As progress would be made by the recognition of courses in colleges, and not the whole work of a college, developments could proceed on evolutionary lines rather than by the selection of particular colleges for up-grading and limiting their functions to advanced technology, as the Percy Committee recommended - a solution which would most certainly embarrass many local education authorities who would be faced with building problems on a scale beyond their powers at the moment to solve." (3)

The draft report omitted to mention that the selection of a few colleges to concentrate on advanced level work would also have embarrassed the Ministry of Education!

- (1) A.E.C. Files, B.105, Technological Education 1, Meeting between N.A.C.E.I.C. Steering Committee and the A.M.C., the A.E.C. and the C.C.A., 8 July 1949.
- (2) A.E.C. Files, B.105, Technological Education 1, Draft Report, Dec. 1949, para 9.
- (3) A.E.C. Files, B.105, Technological Education 1, Draft Report, Dec. 1949, para 10.

This document was then sent out to all interested bodies and their comments were invited on it before 5 April 1950, so that a final report could be drawn up.

Criticism of the draft report came from two main sources: the Bradford Education Committee and the professional institutions. On January 19, 1950, A. Spalding, Director of Education for Bradford, wrote to Alexander. He went straight to the point:

"Knowing Bradford's peculiar interest in this matter you will readily appreciate, I think, my perturbation because it would appear at first sight that the recommendations of the Percy Report just go by the Board. I do not intend to criticise the draft report in this letter, but merely to say that the arguments as expressed in paragraph 10 with regard to what local authorities might do in certain circumstances are the weakest I have ever read in a responsible report and to say that there appears to be the utmost confusion in the way in which the recommendations have been made. Apparently technical colleges awarding the Diploma or Degree of the Royal Institute are to be universities in respect of staffing, accommodation, students and courses of study, but are not to have any equivalent status."⁽¹⁾

In short, Bradford Education Committee was upset and disillusioned at the rejection of the idea of up-grading a limited number of technical colleges for, after all, it had anticipated that its college would have been amongst that number.

Alexander's reply was far from sympathetic towards Bradford's criticisms. He pointed out that the policy of the A.E.C. had been expressed through resolutions at their annual general meetings - in which there was no mention of up-grading a few colleges - and that the draft report was in fact partially the result of consultation between the National Advisory Council and the A.E.C.⁽²⁾ Alexander thus implied that it was the view of the Bradford Education Committee which was not in accord with that of the A.E.C. and hence of the draft report.

(1) A.E.C. Files, B.105, Technological Education 1, Spalding to Alexander, 19 Jan. 1950.

(2) A.E.C. Files, B.105, Technological Education 1, Alexander to Spalding, 24 Jan. 1950.

This exchange of letters was followed by a lengthy criticism of the draft report by H. Richardson, Principal of Bradford Technical College,⁽¹⁾ with the contents of which Spalding fully concurred. The basis of Richardson's criticism was that by separating the awards issue from that of upgrading a few technical colleges, the draft was ignoring the arguments laid down in the Percy Report and in many other documents. Alexander did not accept this criticism. On the contrary, he re-asserted that the draft report was in line with the policy of the A.E.C., and a fulfilment of the Percy Report!⁽²⁾ This left the issue at an impasse. The Bradford viewpoint did not find support elsewhere within the A.E.C. Nevertheless, it cannot be denied that there was some truth behind this criticism for to the Percy Committee the up-grading of the technical colleges had been closely bound up with the awards issue as was made clear by Lord Percy in his Note. It is equally clear that the A.E.C. did not share the views of the Percy Committee on this matter. Bradford Education Committee and its technical college should perhaps be seen as something of a special case in this context. For years it had endeavoured to achieve university status for its college, to put it on a par with Leeds University, and until then had always failed in the attempt. The recommendations of the Percy Report had offered it another avenue or means to this end, and thus it would evidently be disappointed at this closing of the door by the National Advisory Council's recommendations.

As for the professional institutions' criticisms, these derived from a fear that any national award-making body would duplicate the role already carried out by themselves. For example, the City and Guilds of London Institute commented on the report,

(1) A.E.C. Files, B.105, Technological Education 1, Report by Richardson, 26 Jan. 1950.

(2) A.E.C. Files, B.105, Technological Education 1, Alexander to Richardson, 3 Feb. 1950.

"The Institute accordingly regrets that it was not brought into formal consultations by the National Advisory Council in the early stages of the consideration of this subject. It would have welcomed such consultation, especially in view of the fact that the proposals and powers envisaged for the Royal Institute of Technology approximate so closely to the functions and powers of the City and Guilds of London Institute." (1)

The three Engineering Institutions also responded unfavourably to the report, criticising in particular the titles recommended by the National Advisory Council for the awards, again because it seemed likely to cause confusion with the Engineering Institutions' own awards -

"The grades of Membership and Associate Membership of the Professional Institutions not only indicate the attainment of a definite academic standard, but in addition indicate adequacy of practical training and the attainment of an approved professional status and responsibility. As the award by the proposed body would be an examination qualification only, it would at once create serious anomaly and, indeed, confusion, if "membership" titles were used." (2)

However, these criticisms seemed to have little effect upon the final draft of the report which was published later that year. (3) Only one slight concession was made relating to the upgrading of a selected few technical colleges: the report indicated that the establishment of one or more technological universities was being considered by the U.G.C. (4) However, the National Advisory Council clearly viewed any such developments as quite separate from its own proposals.

The reception of the National Advisory Council's report in the press and elsewhere was anything but welcoming. As articles in both The Times (5) and the T.E.S. (6) commented, the report recommended

- (1) A.E.C. Files, B.105 Technological Education 1, Observations by the City and Guilds of London Institute, sent to Alexander, 29 Mar. 1950.
- (2) A.E.C. Files, B.105, Technological Education 1, Memorandum of the three Engineering Institutions, sent to Alexander, Feb. 1950.
- (3) The Future Development of Higher Technological Education, N.A.C.E.I.C., 1950.
- (4) ibid, para 11.
- (5) The Times, 14 Nov. 1950.
- (6) T.E.S., 17 Nov. 1950.

no new and striking departures but merely the improvement of institutions that already existed. The implication was that such a report was hardly likely to cure the evils currently troubling the provision of higher technological education. As for the Economist, it argued in one article that anything was worth trying⁽¹⁾ - a very defeatist attitude indeed. The only support for the report from the press came from Education - the mouthpiece of the A.E.C. It argued that the report was the only practical solution to the problems of higher technological education, stressing the desirability of adapting the old system to meet the present needs rather than trying out something new and revolutionary.⁽²⁾ This view fitted in very closely with observations made on the Report by the A.E.C. itself:

"The proposals do, in fact, recognise the existing pattern in technical education. They afford the opportunity to any college of technology to develop advanced courses where these are appropriate. They offer an effective means of ensuring national standards in higher technology, enabling students to obtain a qualification which is of graduate status, and will, it is to be hoped, be so accepted in industrial and educational circles throughout the country."⁽³⁾

The above quotation clearly reflected the emphasis of the report on the awards issue, and its conservative attitude towards the organisation of technological education in the colleges, which in turn reflected upon the conservatism of the A.E.C., which had evidently played such a large part in the compilation of the report.

Criticism of the report in Parliament was even more outspoken than that in the press. In a debate in the Lords Viscount Caldecote referred to the proposed Royal Institute as,

"A mammoth mushroom growth",⁽⁴⁾

(1) Economist, Vol. 159, 18 Nov. 1950.

(2) Education, Vol. 96, 1 Dec. 1950.

(3) A.E.C. Files, B.105, Technological Education 1, Observations by the A.E.C., 1950.

(4) Lords Debate, Vol. 170, col. 153, 1 Feb. 1951.

and described it as a great cumbersome, bureaucratic machine which would involve yet more committees, and which would duplicate the work of existing professional institutions. He also suggested that during the period of consultation leading up to the report, the National Advisory Council had taken pains to avoid consultations with the professional bodies - which would account for their voices being raised in criticism following the publication of the draft report.

Lord Cherwell was also critical of the report, arousing laughter amongst the peers as he described the proposed Royal College as a clear case of putting the cart before the horse. He stressed the need to improve standards within the technical colleges before establishing any Royal Institute, and went on to refer to an article in the journal 'Nature' which advised the Minister of Education to leave,

"A singularly inept report severely alone."⁽¹⁾

The report was thus criticised in two conflicting ways. On the one hand it was criticised for going too far and advocating that the Royal Institute should take over the roles of the professional institutions; and on the other the establishment of a Royal Institute was thought not to grasp the real problems surrounding technological education. The first line of criticism was quite understandable although later any fears the professional institutions had had were proved to be mistaken. Nevertheless, given the extent of the consultations undertaken by the National Advisory Council it was, at the very least, unfortunate that it had not discussed the proposals with the professional institutions at an earlier stage in the proceedings. As

(1) Lords Debate, Vol. 170, col. 166, 1 Feb. 1951.

for criticising the Report for not going far enough, in one sense that was evidently just for it had concentrated on the awards issue pretty much at the expense of all others. Nevertheless, the recommendations which the report made should not be under-rated. Looking back to the Percy Report, this document had totally failed to reach any agreement on this score, and had simply outlined the possible alternatives. Five years later the National Advisory Council had given some very serious attention to the problem, and had at least secured a measure of agreement in the Council on a national award-making body. Indeed, given the crucial importance of the awards issue to those in the technical colleges perhaps that was partly why the Council devoted so much time to this particular issue.

D. Some Conclusions

The period 1944-1950 has been characterised as one of debate, a characterisation which has been borne out in the foregoing account. It was a period when ideas about how to tackle some of the problems of higher technological education were fluid and numerous, although as the years passed by there was a certain crystallising of some of the key problems and possible solutions to them. From 1943 onwards there was clearly something of a dual debate going on, with arguments for and against the establishment of technological institutes on the one side, and ideas on how to improve the status of technological education in the technical colleges on the other.

By contrast there was little activity in the sphere of either the universities or the technical colleges as a direct result of the many reports and their multiple recommendations relating to technological education. Why was this? Well, the case for the universities has already been considered. In the case of the technical colleges, however, the reasons seem to have been two-fold. Firstly there was the problem

of a lack of funds in the immediate aftermath of war, and the decision on the part of the Ministry of Education to direct such money as was available to areas other than technological education in the technical colleges. As D. R. Hardman⁽¹⁾ explained before a North of England Conference in 1946, the government had had to choose between spreading its resources thinly across the board or concentrating them upon certain short-term aims such as the early raising of the school-leaving age and the provision of school meals, and it had opted for the latter.

(2)

It should be remembered that this shortage of money and resources was experienced not only in the Ministry of Education, but in government departments at large in the 1940s. After all, since the end of the war inflation was rampant; the winter of 1946-7 was exceptionally severe and had helped engender power-cuts, shortages of food, industrial closures and unemployment, as well as a fuel crisis. In addition 1947 was the year of the exchange crisis, which ultimately led to the devaluation of the pound in 1949. Little wonder that so far as technological education was concerned, the post-war years were ones of debate rather than action.

Secondly, from all the evidence it seems that the Ministry of Education itself was at odds with the recommendation made by the Percy Report concerning the up-grading of a select few of the technical colleges and possibly had no intention of carrying out such a development. Indeed, it is possible to regard the establishment of the National Advisory Council as a stalling device - and the Ministry may even have

(1) Parliamentary Secretary, Ministry of Education, 1945-51.

(2) T.E.S., 5 Jan. 1946.

been reasonably sure that given the composition of this body, that it would not endorse the Percy Report on this matter. Clearly the Ministry of Education was much more in tune with the recommendations made by the Council itself, as seen by its decision to follow the latter's recommendation to set up a national award-making body in 1951.⁽¹⁾ That, though, will be dealt with in the next chapter.

(1) Higher Technological Education, (Cmd 8357), Ministry of Education, 1951.

Chapter 3

A Technological University? The Expansion of Higher Technological Education, 1951-55

A. Introduction

If the preceding six years were ones of debate, the period 1951-55 was one of action. To some extent this was perhaps predictable as the period of post-war austerity and constraint slowly gave way to a steadily growing affluence, and as both money and resources became less difficult to come by. Thus, if the governments of the second half of the 1940s had been unable to provide the necessary resources to encourage the expansion of higher technological education, by 1951 it was apparent that such procrastination would no longer be tolerated.

However, although this was a period of considerable expansion and development in the field of technological education, it is interesting to note that there was still a remarkable lack of unanimity about the direction that government policy should take. This was seen most clearly in the two quite different policies outlined respectively by the Labour Government in 1951 and its Conservative successor in 1952. It was also reflected in the changes in government policy for the universities under the Conservative administration whilst it wavered between the idea of establishing a new institution devoted predominantly to technological education, and the continued expansion of technological education in existing established institutions. Equally, the Conservative administration seemed somewhat unsure as to how best to deal with the technical colleges.

In the course of this chapter some attempt will be made to analyse the reasons for these vacillating government policies. It will be asked

how far these changes were attributable to the influence exerted by particular personalities? How far they were a response to a slowly dawning new perception of manpower requirements? And, not least, how far these policies in the later years reflected concern about the threat of foreign competition.

Finally an attempt will be made to assess the development of government policy during this period in the light of the theory of incrementalism outlined in the introductory chapter.

B. The Emergence of Policies for Higher Technological Education

(a) The 1951 White Paper - The Way Forward Under Labour

In September 1951 almost twelve months after the publication of the National Advisory Council's Report⁽¹⁾, the Labour Government published a White Paper on "Higher Technological Education".⁽²⁾ This was presented to Parliament jointly by the Chancellor of the Exchequer, the Lord President of the Council, the Minister of Education and the Secretary of State for Scotland. As such it was presumably an agreed statement of policy for the future development of higher technological education.

The White Paper began by acknowledging the various bodies from which the government had received advice. These included the U.G.C., the N.A.C.E.I.C., and the Advisory Council for Scientific Policy. However, in the light of succeeding paragraphs of the White Paper, it was quite clear that it was the view of the N.A.C.E.I.C. which had prevailed upon the government. The government obviously did not accept the Advisory Council for Scientific Policy's view that only the universities should and could contribute to the education of technologists;⁽³⁾

(1) The Future Development of Higher Technological Education, N.A.C.E.I.C., 1950.

(2) Higher Technological Education, (Cmd. 8357), 1951.

(3) ibid, para 2.

and neither, in the short term at least, was it willing to set up a technological university. This idea was rejected on account of the high capital cost it would entail, and also because it could be expected to give no return in terms of new graduates during its first ten years at least. (1) The White Paper then went on to outline the recommendations made by the N.A.C.E.I.C. in its report, and to endorse them. (2) It was only on matters of detail that the White Paper differed from the N.A.C.E.I.C.'s proposals. Thus the government decided that in the initial stages it would not give the College of Technologists the right to use the title "Royal", and to limit its responsibilities to the granting of awards and the approval of courses. (3)

Details of the government's decision to implement the N.A.C.E.I.C.'s report were relayed from Bray to Alexander in August 1951, during the course of which Bray commented,

"It is, of course, a little disappointing to me that we have had to modify the recommendations of The Advisory Council, but if we are careful in drafting the Charter, we might eventually get everything that the Council recommended." (4)

This indicated the Ministry of Education's total acceptance of the N.A.C.E.I.C.'s report.

Bray also mentioned that there had been something of a struggle between the Ministry of Education and the Treasury over the increased grant for courses of advanced technology in the technical colleges, with agreement finally being reached on an increase in the percentage grant from 60 per cent to 75 per cent. (5) Whether the struggle was due to typical Treasury stringency or to a rather more fundamental conflict of views remains unclear, although it should perhaps be remembered, as shown in the preceding chapter, that the Treasury itself was rather more

(1) ibid., para 6.

(2) ibid., paras 8, 9 and 10.

(3) ibid., para 10.

(4) A.E.C. Files, C.69, Technological Education II, 1951-55, Bray to Alexander, 1 Aug. 1951.

(5) ibid.

in accord with the views of the Advisory Council for Scientific Policy than with those of the N.A.C.E.I.C.

Thus the 1951 White Paper represented the government's acceptance of a policy for higher technological education with which the Ministry of Education was obviously in agreement. Indeed, it seems as if the Ministry of Education and the N.A.C.E.I.C. had succeeded in foisting their own preferred policy onto the government in the face of the conflicting policy favoured by the A.C.S.P., and indeed, the Treasury.

Moreover, the publication of this White Paper marked what seemed would be the end of the debate on how best to develop higher technological education, with the government coming down quite clearly in favour of a dual policy, with both the technical colleges and the existing universities making their own quite distinct contributions. This assessment of the situation, though, proved to be far from the reality of events. As it happened this government was never able to implement its policy for in November 1951 it was ousted from office at the General Election, and succeeded by a new Conservative administration under Winston Churchill.

(b) The New Conservative Government's Policy for Higher Technological Education

In February 1952, whilst announcing the new quinquennial grants for the universities, the Chancellor indicated that he hoped the universities would make a considerable contribution towards the much-needed increase in the output of qualified technologists.⁽¹⁾ However, it was not until the following June that the new government announced its policy for higher technological education,⁽²⁾ a policy which at first sight seemed to mark a total reversal of the previous government's policy. The most important element in this statement was the government's

(1) The Times, 22 Feb. 1952.

(2) House of Commons, Vol 502, col 34, 11 June 1952.

declared intention to try and build up at least one institution of university rank devoted predominantly to the teaching and studying of various forms of technology. Quite how this was to be achieved was still unclear, but the very intention marked a significant shift away from the Labour Government's policy of 1951.

Secondly, and of particular importance to the technical colleges, the government also stated that it did not intend to go ahead with the establishment of a non-teaching award-making body under the title of the Royal College of Technologists.

Clearly then, the emphasis of the new government's policy for technological education was quite different from that of its predecessor. In fact the only point on which the two policies agreed was on the need to provide improved financial assistance for some technical colleges and courses. Given that this latter intention remained intact it is perhaps somewhat false to describe the new policy as a radical reversal of the former one. Nevertheless, given the two changes noted above, the new government clearly placed its greatest hope for the expansion of technological education in the universities and particularly in a type of university institution hitherto unknown in this country.

(c) Some comments on this change of policy

This change of policy seems to have derived very largely from the impact of certain key individuals upon the decision-making process. In the first place there were a number of people in the new administration who were particularly staunch supporters of university expansion. One such was R. A. Butler, who as Chancellor of the Exchequer, was well placed to encourage this. He had also spoken out at an earlier date against the N.A.C.E.I.C's proposals for a College of Technologists.⁽¹⁾

(1) Education, Vol. 26, p.603, 1 Dec. 1950.

Another advocate of university expansion was Lord Cherwell, who was now appointed Pay-Master General and the government's advisor on atomic energy. His support for the establishment of a technological university in Britain has already been referred to in the preceding chapter.

Secondly, and of perhaps even greater significance, was Churchill's appointment of Florence Horsbrugh as Minister of Education - an appointment which in the first instance did not carry with it membership of the Cabinet (thus breaking a precedent dating back to 1919 with the exception of MacDonal'd's first Coalition Cabinet in 1931 and the War Cabinet). Initially Churchill had offered the post to Clement Davies, a Liberal Member of Parliament, who had declined it because the Liberal Party wanted to retain its independence. At that stage the appointment had carried with it membership of the Cabinet.⁽¹⁾

This decision was of importance on two counts. On the one hand, by placing the Minister of Education outside the Cabinet, the weight and effectiveness of that Minister was considerably reduced. Moreover, in the case of higher technological education, it was obviously going to cause additional problems since it was likely to mean that the Minister of Education was excluded from discussions on this issue held at Cabinet level although the role of the technical colleges would inevitably be considered. Indeed, the secondary role that the new administration was to assign to the technical colleges in the first half of the 1950s was already being hinted at by the government's policy statement of June 1952.

On the other hand, the choice of Florence Horsbrugh as the Minister of Education did not bode well for the future of the technical

(1) Education, Vol 98, p.605, 9 Nov. 1951.

colleges. Although a Member of Parliament of many years standing, Miss Horsbrugh lacked some of the finer qualities of the parliamentarian, and in particular she,

"Was never a master of lucid exposition."⁽¹⁾

Given the tide of feeling in the new administration, which favoured the expansion of higher technological education in the universities rather than in the technical colleges, Miss Horsbrugh's appointment as Minister of Education was a far from propitious arrangement either for those in the technical colleges or for those in the Ministry of Education itself who were keen to see the implementation of the N.A.C.E.I.C's Report.

At this juncture it seems convenient to refer to the analysis of this policy-making process made by S. F. Cotgrove in 1958.⁽²⁾ He argued, in a similar vein to the approach developed in the preceding chapter, that by 1950 the Government of the day had before it for consideration two somewhat different policies. On the one hand there was the policy outlined by the A.C.S.P. in its 1948 Report on 'Higher Technological Education', which favoured the development of technological education exclusively in the universities, and on the other hand there was the policy as expressed by the N.A.C.E.I.C., which wanted to see both the universities and the technical colleges making their own distinct and complementary contributions to technological education. In addition he pointed out quite rightly that,

"Where the views of the technical colleges had been adequately represented, both by the composition of the council and the evidence considered, recommendations were broadly acceptable to the technical colleges. Where this was not the case, the policy recommended largely excluded the technical colleges from consideration in the training of higher technologists."⁽³⁾

(1) Parliament's view on responsibility for Education Policy since 1944, Lord Boyle (the 1st Alfred G. Mays Memorial Lecture) 7 May 1976.

(2) Technical Education and Social Change, S. F. Cotgrove (Allen & Unwin, 1958).

(3) ibid., p.175.

So far so good. But, what Cotgrove failed to explain was why the Labour Government in 1951 came down in favour of following the policy laid down by the N.A.C.E.I.C., and why, less than twelve months later, the new Conservative Government radically altered the emphasis of this policy, and put forward as its main plank the idea of establishing a technological university. Cotgrove merely argued that,

"The government seems to have attached most weight to the recommendations of the Advisory Council and to have adopted a policy, therefore, in the formulation of which the views of the technical colleges had exercised little influence."⁽¹⁾

From Cotgrove's analysis it would be tempting to assume that the government of the day is but a passive instrument upon which competing interests try and press their claims. However, from the foregoing discussion it is quite obvious that this is not the case: that any government, made up of a collection of individuals, must have personal biases and prejudices of its own, and these cannot be ignored when an analysis of a particular policy-making process is being carried out.

Indeed, in this instance, the positive, indeed crucial, role of members of the Conservative Government of 1952, in helping to reach the policy decision announced in June of that year, was supported by the views expressed in a debate in the Lords at the time.⁽²⁾ Quite a number of peers quite evidently attributed this new policy to the influence exerted by Lord Cherwell. For example, Viscount Hall said of the announcement,

"I can see behind it a good deal of work by the Pay-Master General",⁽³⁾

and Lord Pakenham proclaimed,

"I do not want to stand between the House and the noble Lord, Lord Cherwell, very long. I feel that the hour has struck for the noble Lord: this is his apotheosis, and richly has he deserved it."⁽⁴⁾

(1) ibid.

(2) House of Lords, Vol 177, col 35-183, Debate on Science & Industry, 11 & 12 June 1952.

(3) ibid., col 66.

(4) ibid., col 170.

Indeed, one might go further and argue that the new policy could be attributed to neither the A.C.S.P. nor the N.A.C.E.I.C. exclusively since the former had recommended the concentration of technological education in the universities alone, whilst the latter had not considered in any detail the possibility of setting up a technological university. In short, the policy of the new Conservative Government for higher technological education was well and truly a compromise between a number of conflicting views, reflecting the persuasive powers of Butler and Cherwell, and conversely, the ineffectiveness of the Minister of Education, rather than the influence of any one particular pressure group. Indeed, throughout the period covered by this chapter as a whole, the influence of particular personalities on the development of policy for higher technological education seems to have been of considerable importance - a factor which Cotgrave seemingly omitted to bear in mind.

Having dwelt on this point at length attention will now be focused on the actual development of government policy for higher technological education. Again developments in the universities and in the technical colleges will be dealt with separately, reflecting once more the lack of a single coherent policy in this field. The universities will be considered first, in line with the priority the government attached to developments in these institutions compared to their plans for the technical colleges.

C. The Development of Higher Technological Education in the Universities 1952-55

(a) The Conservative Administration Outlines its Plans

In February 1952, when the Chancellor of the Exchequer announced the size of the quinquennial grants for the universities for the period 1952-57, he indicated that he envisaged the universities making

particularly noticeable increases in the size of their faculties of science and technology.⁽¹⁾ This expression of opinion anticipated a three-year drive on the part of the government and the U.G.C. to expand the output of scientists - and especially applied scientists - from the universities.

After 1954 the U.G.C. and the universities became increasingly preoccupied with the more general expansion of the universities which was clearly necessary as the demand for higher education grew.⁽²⁾ However, the expansion of technological education which took place in the universities during the intermediate three years obviously influenced the way that the subsequent recurrent income of the universities was spent. By 1954 the government was providing about £3 million per year for recurrent grants for the universities to be used on technology alone (i.e. about one-eighth of the total annual recurrent grant made to the universities); and in 1954 the government decided that this figure should be increased still further by the additional sums of £196,000, £404,000, and £704,000 for the three years 1954-5, 1955-6 and 1956-7 respectively.⁽³⁾

These additional grants possibly proved necessary because the universities actually expanded their faculties of technology at a faster rate than the U.G.C. had anticipated! The U.G.C. was planning to provide an increase in students of technology in the order of 40 per cent, including the expansion of the Imperial College of Science and Technology, above the numbers in the year 1952-53. Of this increase it was thought that not much more than half could take place in the

(1) The Times, 22 Feb. 1952.

(2) University Development, 1952-7, U.G.C. (1958), para 3.

(3) Lords Debates, Vol 190, col 237-8, 7 Dec. 1954.

quinquennium 1952-57. However, this objective was more than achieved. Between 1952-3 and 1956-7 the number of students of technology increased by 33 per cent.⁽¹⁾

This indicates that during the first half of the 1950s the universities, by and large, were more than ready to expand their faculties of technology so long as sufficient money and resources were forthcoming from the government to allow them to do this without any loss of standards. The principal difficulty that the universities did in fact face during this period was a shortage of staff to cope with the increased student numbers, a point made by the U.G.C.,⁽²⁾ and also felt at both Leeds University⁽³⁾ and at Imperial College,⁽⁴⁾ to cite but two examples. However, the evidence suggests that this problem did not prove to be insuperable.

This readiness to expand - and particularly to expand their faculties of technology - was made clear by a number of Vice-Chancellors. For example, early in 1952 C. R. Morris, Vice-Chancellor of Leeds University, was arguing,

"The advance of scientific knowledge pure and applied is indivisible; and the advantages of being together are by no means only one way. If the old case for the unity in the university of the humanities and the sciences was well-argued, there is no choice left to make now. The technologies, as they show sure promise that they can come to maturity, must in respect of the study of fundamental principles come in at the same door."⁽⁵⁾

Moreover he added,

"Considerations of balance are hardly likely to cause the universities to be unwelcoming to technological studies, provided those studies are concerned with fundamental principles and their students are up to the present recognised university standards."⁽⁶⁾

(1) University Development, 1952-7, U.G.C. (1958), para 112.

(2) ibid.

(3) The University of Leeds Archive Material, The University of Leeds Annual Report, 1954-5, p.40.

(4) Imperial College of Science & Technology - Report on a Decade of Expansion, 1953-63 (Imperial College of Science & Technology 1963).

(5) C. R. Morris, 'The Universities and Technology', Universities Quarterly, Vol. 6 (1952-3), p.119.

(6) ibid.

Also at about the same time Sir Raymond Priestly, Vice-Chancellor and Principal of Birmingham University, whilst arguing against the establishment of a British equivalent to M.I.T., suggested that graduate schools of specialist engineering should be developed in the existing universities and the colleges of technology. (1)

The only opposition to the expansion of technology in the universities came from those pursuing the Arts. As the T.E.S. commented when Butler announced the quinquennial grants in 1952, and expressed the hope that much of the expansion would be in the technological field,

"It was through this glimpse into the future that Mr. Butler came nearest to giving offence. What development there could be, he suggested, ought to be on the scientific and technological sides. That, some university people think, is rubbing it in. They would agree that that is how any spare money is likely to go. But some arts men at least thought the Chancellor a little unkindly to make such a point of it. He need not, they felt, have made a public obsequy to the Zeitgeist." (2)

Here it seems as if the opposition expressed was less due to the issue concerned, and more to the way Butler put it across.

In the universities, then, and especially in those which already had a strong commitment to technological education, there was in the 1950s, a general willingness to expand provision. This view was echoed by the U.G.C.:

"Students of technology represent under 15 per cent of all full-time university students, and the response of most universities to the Committee's invitation to develop technology further showed conclusively that they were ready and willing to raise this proportion." (3)

However, the U.G.C. and the universities were not ready and willing to see the expansion of higher technological education along quite the same lines as was implied in the government's policy statement of June 1952.

(1) T.E.S., 7 Mar. 1952, p.202.

(2) T.E.S., 29 Feb. 1952, p.169.

(3) University Development, 1952-7, U.G.C. (1958) para 103.

(b) A Technological University? Government Plans Meet
Opposition from the U.G.C. and the Universities

Although the U.G.C. and the universities were generally quite ready and willing to increase the proportion of technologists within their walls, they were not very keen on the idea of concentrating the study of technology in just one or two technological institutes. This was opposed by many of those in the existing universities, especially where an institution already made a considerable contribution to this sphere, such as did Leeds and Birmingham. Certainly, Morris, Vice-Chancellor of Leeds University did not like this alternative, as implied in the article quoted above.⁽¹⁾ As for the U.G.C., its attitude was made apparent in its report for 1952-7, in which it argued,

"We should regard the isolation of an institution confined to a narrow range of subjects as unfavourable to the highest attainment... We considered, on evidence both from at home and overseas, that it was desirable, and indeed imperative, to keep applied science in the closest possible touch with the pure sciences, and we also attached importance to contact with the humanities, many of whose disciplines are becoming increasingly recognised as a necessary part of the education of the technologist."⁽²⁾

With regards to the Committee of Vice-Chancellors and Principals its views on a technological university were outlined at a meeting of the Committee in June 1950, in response to the recommendation made by Dr. H. V. Lowry, Principal of the South West Essex Technical College the previous month, that some twenty technical colleges should be raised to university status. Dr. Masson put the C.V.C.P's view in answering the question 'What is a Technical University?' His answer was far from complimentary:

"Its students would all be intending technologists. Any 'humane' studies added to its curricula, and any staff added to deal with these, would in the minds of the governors, the rest of the staff, and the students, be merely ancillary to the technological aim of them all.

(1) Morris, op cit., p. 119.

(2) University Development, 1952-7, U.G.C. (1958) para 107.

The differing and almost contradictory aims, which any actual University exists to bring together on equal footings within one society, would not be there. No highly talented humanist would willingly join such a place, whether as a member of staff or as an undergraduate, when he could work instead in a University where his type of mind is respected and cultivated in its own right and encounters many like minds as well as diverse ones."(1)

In short, the C.V.C.P. refused to entertain the possibility of any single-faculty institution bearing the name university, a view it reiterated in 1953:

"The Committee firmly adhered to its considered view on the granting of degree-giving powers to technological institutions which it had put on confidential record at its meeting on 15th July 1949." (2)

All in all then, it seems as if the majority of those connected with the universities in the early 1950s preferred to see the development of higher technological education in existing institutions rather than in specialised technological institutes. There were a few exceptions of course, such as Sir John Cockcroft, the Director of the Atomic Energy Research Establishment at Harwell, who favoured the idea of developing one or more technological universities out of some existing institutions such as Imperial College. (3) However, this view seems to have been a minority one.

Given this general attitude, the announcement by Butler in June 1952, that the government was considering building up at least one technological institute, must have come as something of an unwelcome development to the academic world. Indeed the Economist commented,

"Educational opinion is almost unanimously against it. The universities would prefer to have their existing departments of applied science and technology expanded, rather than see a specialist competitor established with what would necessarily be a very large call on government funds."(4)

(1) C.V.C.P. Minutes, Minute 238, 23 June 1950.

(2) ibid, Minute 32, 20 Nov. 1953.

(3) T.E.S., 9 May 1952, p.398.

(4) Economist, Vol 163, p.796, 21 June 1952.

The Times Educational Supplement also supported this analysis, arguing that the government itself would have to decide how to translate its plans into action,

"For the scientific and academic world is much divided on this proposal."⁽¹⁾

(However, if the academic world did not welcome the idea of a technological university, the same could not be said of the press. The Times Educational Supplement,⁽²⁾ the Economist,⁽³⁾ and The Times⁽⁴⁾ all welcomed the government's decision although the first two also argued that the government should look to improve technological education in the technical colleges as well. Interestingly, both the Economist and The Times also attributed this policy decision to the influence of Lord Cherwell).

From the foregoing discussion it is quite clear that in 1952 there was an obvious difference of opinion between the government and the academic world as how best to develop technological education in the universities. The government's announcement in 1952 looked, at first glance, like a victory for the views of Lord Cherwell. However, any such victory was to prove of but a transitory nature as the government set about implementing its policy. The announcement of June 1952 was couched in the vaguest of terms: the government had not even determined whether it would develop its technological university out of an existing institution or start from scratch. In further developing this policy it looked to the U.G.C. for advice; and it was during the resultant period of consultation that the government's plans began to be shaped

(1) T.E.S. 20 June 1952, p.529.

(2) ibid.

(3) Economist, Vol 163, 21 June 1952.

(4) The Times, 21 June 1952.

more closely in accordance with the views of the U.G.C. and the universities. In short, what finally emerged was something of a compromise between the government's preference for a technological institute on the lines of M.I.T., and the academic world's support for continuing to expand existing institutions. This process of consultation revealed the influence that the academic world could bring to bear on the government. It also suggests, by implication, that the U.G.C. and the universities were not consulted by the government before it made its policy statement in June 1952.

The first hint at a change in direction of government policy came in January 1953 when J. Boyd-Carpenter⁽¹⁾ made a further statement on the matter in the Commons.⁽²⁾ He began by announcing the government's decision to put further resources at the disposal of the University of London for the expansion of the Imperial College of Science and Technology. This was claimed to be in accordance with the government's policy announced in June 1952, but in reality it did not quite measure up to the anticipated ideal of a British counterpart to the Massachusetts Institute of Technology. Admittedly Imperial College was to virtually double its intake of students, increasing the number of full-time students from 1,650 to 3,000 during the quinquennium 1957-62, and thus become of a size sufficient in the opinion of Lord Cherwell to teach applied science economically. However, although the College was to become as large as some universities, the government did not propose to establish it as an independent institution. Instead it was to remain a constituent part of London University. Thus it seems as if the government was already beginning to back-track on its original scheme, a change which the U.G.C. recorded itself as being in agreement with:

(1) Financial Secretary to the Treasury.

(2) House of Commons, Vol 510, col 135-6, 29 Jan. 1953.

"The request for advice which we received in 1952 included the suggestion that the Government's objective might best be attained by building up the Imperial College of Science and Technology ... we concluded that the advantages of large-scale operation claimed for a 'technological university' without the loss of contact with other fields of study which would be inevitable in an isolated institution, could be best obtained by adopting this suggestion, provided that it could be carried into effect without prejudice to the relationship between the College and the University of London. We therefore recommended accordingly."(1)

From the above it is clear that Imperial College was to differ appreciably from such institutions as M.I.T. and the German technische hochschulen which were autonomous and independent. In addition it was queried whether Imperial College would be at a disadvantage financially for it would remain dependent upon the Court of London University in that respect. However, despite such problems, the decision proved a welcome compromise between the government's original policy and the views of the academic world, especially as under these arrangements the students of technology would still have plenty of opportunity to mix with others following different disciplines⁽²⁾ - a matter of considerable importance to the universities.

As part of the same announcement in January 1953 the government made it quite clear that its intention was not simply to build up one institution of university rank but in fact to extend facilities in a number of institutions. In deciding where this expansion should take place the government again turned to the U.G.C. for advice.

It was not until July 1954 that the government announced where else technological education was to be expanded.⁽³⁾ Its choice fell on four of the largest provincial universities namely Glasgow,

(1) University Development 1952-7, U.G.C. (1958) para 109.

(2) Economist, Vol 166, p. 348, 7 Feb. 1953.

(3) House of Commons, Vol 530, vol 284, 13 July 1954.

Manchester, Leeds and Birmingham. The government also announced that plans for further developments at other universities too were under consideration.

The choice of the four above-named universities was not simply a random one. At Manchester and Glasgow the technical colleges had for long been closely linked with their respective universities and they were already in receipt of grants from the U.G.C. At Leeds and Birmingham too, technological education had long been established. Indeed, Leeds University had grown up out of the Yorkshire College of Science, the basis of which had been four chairs in physics with mathematics, chemistry, geology and mining and textile industries respectively,⁽¹⁾ so that technological education was obviously in no way alien to that institution.

Six months later, during a debate in the House of Lords, the government made yet a further announcement relating to technological education in the universities.⁽²⁾ It revealed its intention of making developments on a fairly large scale at both Cambridge and Sheffield, as well as specialised developments at other centres including Wales. Some were to be financed by industry, and some by Treasury grants. Included in this plan were the universities of Edinburgh, Newcastle, Southampton and the University College of Swansea.

Thus by the close of 1954 the government's policy for higher technological education had moved a considerable way from its original intention to create at least one technological institute. Moreover, judging from the U.G.C.'s comments in its report for 1952-7, and from points made by the Lord President of the Council in the Lords debate of December 1954, it is quite clear that this change was brought

(1) P. H. J. H. Gosden, The Early Years of the Yorkshire College (Reprinted from the Publications of the Thoresby Society Miscellany, Vol. 16, Part 3), p.210.

(2) House of Lords, Vol. 190, col 237-8, 7 Dec.1954.

about through the influence exerted by members of the academic community, both by the formal machinery of the U.G.C., and rather more informally, via the personal expression of opinion by academics in the corridors of power. Indeed, the Lord President of the Council clearly attributed quite considerable weight to the views of academics: he said in the Lords debate,

"When I first approached the subject I was immensely attracted - I think the noble Lord, Lord Cherwell, knows this perfectly well - by the idea which he has put forward so forcibly this afternoon, of a technological university ...

I go further and say that I personally still feel that the idea has considerable charms, but I am bound to say this, too, to the House. Since I first arrived in my office, I have, of course, made contact with a great many of our foremost scientists, and they, or a great many of them, emphatically do not share the views of the noble Lord, Lord Cherwell, on this particular topic. Some of them do not like it for the students, and they do not like it for the professors either ... Therefore, although I still feel the charms of the idea myself, I must confess that I have been gradually driven to the view that, whatever the theoretical merits of the proposal, the technological university is not at present a practical possibility."(1)

In addition he argued - echoing the views earlier expressed by the U.G.C. and the C.V.C.P.,

"Higher technological education must be closely linked with other university studies. We must make sure that those who are studying technology should work closely with those who are occupied with the more fundamental problems of science and with its application in other fields."(2)

Lord Cherwell likewise referred to the conflict of opinion on this issue between the government and the U.G.C., a conflict which in his view, had led to little being done in the field of higher technological education between 1952 and 1954:

"The Government have frankly stated on one or two occasions that it was their intention to build up what we might call technological universities - technological institutions of university rank. But the University Grants Committee seem to think that this is the wrong procedure, and that the right course is to expand the engineering and other technological facilities in existing universities."(3)

(1) ibid, col 236.

(2) ibid, col 238.

(3) ibid, col 220-1.

From the foregoing analysis it seems as if the shift in government policy for the universities during the period 1952-4 was based upon political considerations. How far economic factors played any part in this remains unclear. Certainly at first glance it might be thought to be a more practical and less expensive venture to simply extend and develop existing institutions. However, on closer inspection this might well have proved not to have been the case, especially where the Imperial College was concerned. To expand this institution involved the spending of a large sum of money on rehousing institutions which were already in possession of the buildings into which the College was to move - and all this on an expensive London site too!

In 1951 the Labour Government had estimated that establishing a new technological institution would involve a capital outlay of over £6 million; and rejected such a development as not being in the national interest.⁽¹⁾ The expansion of Imperial College, as decided upon by the Conservative Government, would, it was thought, cost somewhat less. However, the figures announced by the government in July 1955 rather gave the lie to this belief. H. Brooke, Financial Secretary to the Treasury, announced with reference to Imperial College:

"I am not sure whether it is realised that this is a development of towering magnitude likely to cost in all some £15 million."⁽²⁾

He also provided an interesting breakdown of some of the costs involved:

"The total expenditure on Imperial College in 1953-4 was just over £1 million, of which almost three-quarters came from the University Grants Committee via the University of London. Building work has been authorised, and much of it is already in progress, to a total value of £4 million in connection with this great project - over £1 million on Imperial College itself, over £1 million on replacement building by London University for the purpose of helping to clear the site, nearly £1½ million of museum building also to enable museums now on the site to move, and some £600,000 for equipment and so forth."⁽³⁾

(1) Higher Technological Education (Cmd 8357) para 6.

(2) House of Commons, Vol 544, col 693, 21 July 1955.

(3) ibid.

Perhaps on practical grounds the expansion of Imperial College and other university faculties of technology was thought to be preferable. After all, it was argued that students would not begin to graduate from a new institution - from its initial inception and planning stage - inside 10 years. But even that view was subsequently contradicted by the speed at which the new universities became operational in the early 1960s.

All in all it seems as if economic factors had very little bearing on the changes of government policy towards the universities during the first half of the 1950s. Instead political considerations seem to have predominated whereby, after a promising beginning, the government's policy for higher technological education soon gave way before the pressure of the academic world which favoured a more traditional approach. This in itself was not so surprising: it is much easier to follow a well-trodden path than to carve a new one. Yet in this particular case it was interesting to note what little impact all the arguments in favour of developing a technological university in Britain had had - after all, arguments along these lines had found a place in virtually every debate on technological education in both Houses of Parliament since the end of World War II; and the case had been widely supported in the press too. Moreover, amongst the advocates of a technological university was to be found one of the government's own official spokesmen.

(c) Leeds University: Its Attitude Towards Higher Technological Education and Plans for its Development 1953-4

Leeds University should perhaps not be regarded as a typical university in its attitude towards technological education for attitudes amongst the universities varied widely, and for a variety of reasons. For example, some universities had difficulties expanding their sites,

and some had conservatively-minded vice-chancellors. Nevertheless, during the early 1950s the universities collectively showed a considerable readiness to expand in the direction of technological education, and Leeds, under the direction of Morris, showed itself to be amongst the vanguard in the field.

Some reference has already been made to the views of Morris concerning the expansion of higher technological education. However, his attitude is highlighted even further in the correspondence which took place between himself and Sir Edward Hale, Secretary to the U.G.C., in 1953-4, when the U.G.C. was considering how best an additional grant for technological education might be distributed amongst the universities. Of particular interest was Morris' reference to the concept of 'balance' between the faculties of the university:

"In relation to the balance of faculties we tend to think in terms of a three-fold division - Arts (including Economics and Commerce and Law), Science and Technology, and Medicine. As you will know, our figures for the Arts group has gone up: in 1951 they were 1,149 and for the present session they are 1,240. For the Science and Technology group, in spite of increases in Technology Departments, the total numbers have very slightly gone down, from 1,358 in 1951 to about 1,330 in the present session; and on our general principle there is room for an increase. The balance inside the group between Science and Technology is changing somewhat; but we have no strong grounds of policy or principle which would hinder our increasing within the group the number of students for the applied sciences provided we did not diminish seriously the proportionate number of good honours students in the pure sciences."⁽¹⁾

He also added,

"I have no doubt that in some subjects such as Engineering, Fuel Sciences, Metallurgy, and Chemical Engineering, we are excluding some who are suitably qualified and whom we should like to have if we had the facilities."⁽²⁾

(1) Leeds University Archives, Morris to Hale, 2 Dec. 1953.

(2) ibid.

The above figures point out just how strong was the commitment of Leeds University to the education of technologists, not only in comparison with Arts students, but also compared with that of pure scientists.

Given this attitude it was not surprising that the U.G.C. recommended, and the Treasury approved, an additional recurrent grant of £22,000 for Leeds for the year 1954-5 for developments in technology and the physical sciences. Simultaneously the U.G.C. also expressed the hope that it would be able to approve the start of the extension to the chemistry and physics laboratories at the University in January 1955 at a cost of £300,000.⁽¹⁾

These developments did in due course take place, with the major effects of the additional grant being felt in the departments of mathematics, physics and chemistry, and to a lesser extent, geology.⁽²⁾ That the greatest effects should have been felt in the departments of pure science was in no sense contradictory to the government's aim of developing technological education. The expansion took the form it did because at Leeds the science aspects of engineering courses were taught by the pure scientists. The two were not seen as distinct from one another. Indeed, by 1956 the Vice-Chancellor, in a statement to the Court of the University, was prompted to make the following remarks:

"The most serious and immediate danger that it has been necessary to avoid is the risk of serious interference with the basic work of the departments of physics, chemistry and mathematics. The increased numbers of students in technology all have to do part of their work in these departments, and a situation could easily be allowed to arise, if the greatest care were not exercised in planning, in which their intrinsic work, both of teaching their own specialist students and of advancing in their own researches would be swamped by their activities in 'servicing' the technologists."⁽³⁾

(1) Leeds University Archives, Hale to Morris, 15 June 1954.

(2) Leeds University Archives, Academic Planning Committee Report, 1956.

(3) Leeds University Archives, The University of Leeds Annual Report, 1955-6.

The readiness that Leeds University showed to expand its faculty of technology, and the success it met in that respect thereby speak for themselves.

(d) The Awards Issue

Whilst the universities showed themselves, to a varying extent, to be quite ready to expand their faculties of technology during the first half of the 1950s, they exhibited rather less unanimity on the awards issue. This slight chink in the defences of the universities which had previously been solidly united against any change in their monopoly of the right to confer degrees became apparent in 1951 when the University of Glasgow brought under scrutiny its relationship with the Royal Technical College, Glasgow. Sir Hector Hetherington, Vice-Chancellor of Glasgow University, sent a note to the vice-chancellors of the Universities of London, Durham, Manchester, Birmingham, Leeds and Sheffield regarding this relationship and certain proposed changes that the University wanted to make to it.⁽¹⁾ Describing the system of affiliation between the two institutions Hetherington explained,

"The Ordinance was drawn in terms which appear to us unduly favourable to the College, since it provides that without the University's having the slightest influence over R.T.C. appointments, courses conducted in the College count as qualifying courses for University degrees, and the Heads of certain Departments in the College have the full rights of internal examiners, so that for certain courses in the Faculty of Science and for all courses in the Faculty of Engineering, a student may take the whole of his curriculum in the College, sit University degree examinations, and get a University degree."⁽²⁾

The University now wanted this arrangement to be done away with or at least greatly modified, whilst the Royal Technical College wanted to see the scheme extended to other subjects such as textiles. The

(1) Leeds University Archives, Hetherington to the Vice-Chancellors of London, Durham, Manchester, Birmingham, Leeds & Sheffield, 8 Oct. 1951.

(2) ibid.

reason that Hetherington wrote to the vice-chancellors of the above-mentioned universities was that he wanted to inform them about a new relationship between the institutions which the University had been considering and now wished to put into operation. He revealed that,

"The essence of the new deal is that we should both bring them more closely into the University organisation and at the same time give them a place and a degree which is recognisably their responsibility."(1)

There lay the crux of the matter, as Hetherington went on to point out:

"I am troubling you with this story because as you will see, it involves the establishment of a B.Tech. degree which, although given by a University, employing the ordinary University mechanism, is intended to be a degree for which a Technical College will in fact have a good deal of direct responsibility. There is on the face of it no departure from ordinary University practice and convention. But the form does not disguise the fact that this is in substance an innovation, which may be used in argument with other Universities."(2)

This scheme apparently had the agreement of the Professors concerned at Glasgow University as well as of the Principals of the Universities of Edinburgh and Aberdeen and the Chairman of the U.G.C.

Then in February 1952 Sir Edward Appleton, Principal and Vice-Chancellor of Edinburgh University, sent Morris notes on his own institution's plans concerning technological education. Here too there were plans afoot to establish a B.Tech. degree to be conferred on students taking approved courses at the Heriot Watt College and passing the relevant university examinations.(4)

These proposals were particularly interesting because only as recently as July 1949 the C.V.C.P. had come down most strongly against the introduction of a B.Tech. degree which might be conferred by individual technical colleges.(5) Admittedly in the two cases

(1) ibid.

(2) ibid.

(3) ibid.

(4) ibid., Appleton to Morris, 15 Feb. 1952.

(5) C.V.C.P. Minutes, Minute 214, 15 July 1949.

above the situation was somewhat different for the technical colleges were to be linked with their neighbouring universities, and the degree was to be conferred by the universities themselves. Nevertheless, as Hetherington clearly appreciated, this might simply have proved to have been the thin edge of the wedge.⁽¹⁾

Ultimately these plans did not come to fruition. As Hetherington had anticipated, the Glasgow University proposals were not acceptable to the Royal Technical College which wanted independent degree-giving powers. Eventually the U.G.C. helped devise a compromise scheme:

"Agreement was ... finally reached on a more limited modification of the existing arrangements, which should relieve the inconveniences inherent in them. It provides that before the University Senate forwards to the Court its observations on proposals reaching it from Joint Boards of Studies meetings are to be held of which members of the Senate and the College Professors are to be voting members."⁽²⁾

No mention was made of the introduction of a B.Tech. degree.

Clearly then during the early part of the 1950s there was no substantive change in the attitude of the universities towards their monopoly of degree-awarding powers, but there were signs that their attitude might be beginning to weaken slightly.

D. Developments in the Technical Colleges 1951-5

(a) Disappointment in the Technical Colleges at Failure to Resolve the Awards Issue

In contrast to the rapid development of technological education in the universities during the early 1950s, this period for the technical colleges was one of disappointment. In particular plans for the setting up of a College of Technologists seemed to reach something of an impasse following upon the raising up of hopes in the technical

(1) Leeds University Archives, Hetherington to the Vice-Chancellors of London, Durham, Manchester, Birmingham, Leeds and Sheffield, 8 Oct. 1951.

(2) University Development 1952-4, U.G.C. (1958), para 120.

colleges in 1951 when the Labour Government published its White Paper and their descent to a new low in 1952 after the Conservative Government's policy announcement in June.

Clearly the technical colleges had welcomed the prospect of a national award-making body. This can be inferred, for example, from the joint policy document prepared by the A.T.I. and A.P.T.I. in 1951, ⁽¹⁾ which showed the two associations to be in close agreement with the recommendations of the N.A.C.E.I.C., particularly on that issue. As the Associations acknowledged,

The problem had been of particular concern to the Associations over a number of years and their difficulty had been found not so much in arriving at an ideal solution as at one which would be acceptable to the many other interests involved."⁽²⁾

By implication they clearly felt that a College of Technologists met this requirement.

The A.T.T.I. also expressed its approval of the N.A.C.E.I.C.'s report, regretting only that the Council had not suggested that the award conferred should be a degree. ⁽³⁾

Obviously then, the new policy for higher technological education announced in June 1952 caused the technical colleges a certain amount of disappointment, as explained by A. E. Evans, Secretary of the A.T.T.I., in a letter to I. O. McLuckie, Secretary of the N.A.C.E.I.C.:

"My Executive have noted with deep disappointment the decision of the Minister to reverse the decision of the last Government in the matter of the implementation of the recommendation of your Council that a Royal College of Technologists be established. My Association has made it clear on several occasions that it regards the establishment of such a College as a necessary accompaniment to the desire of the technical colleges to assist in providing an adequate supply of highly qualified technologists at the highest levels. It has seen no reason to depart from this view despite the action of the Minister."⁽⁴⁾

(1) Statement of Policy on the Future Development of Higher Technological Education, A.T.I. and A.P.T.I., 1951.

(2) ibid., para 28.

(3) T.E.S., 18 May 1951.

(4) A.B.C. Files, B.136, Technological Education (N.A.C.E.I.C.) 1949-55, A. E. Evans to I. O. McLuckie, 8 Sep. 1952.

Nor were the teachers in the technical colleges alone in their disappointment. At its Annual General Meeting in 1952 the A.E.C. also expressed regret at the government's decision; ⁽¹⁾ whilst Weeks urged it to reconsider the whole issue. ⁽²⁾ This view was shared by F. H. Reid of the London County Council too, who maintained that,

"There is no doubt whatever that the absence of a nationally recognised qualification, of status similar to that of a first degree, is having a serious detrimental effect on the advanced courses in the technical colleges. As an example of this the special full-time 'Sandwich' course in Production Engineering, which has been inaugurated in the London area at three technical colleges on the recommendation of the London Regional Advisory Council for Higher Technological Education is receiving little support from students because they are not satisfied to receive a college diploma which is not a degree."⁽³⁾

In addition to these public expressions of disappointment both the N.A.C.E.I.C. ⁽⁴⁾ and the A.E.C. ⁽⁵⁾ decided to try and press the importance of their case upon the government by means of deputations to the Minister of Education. The A.E.C. sought and obtained support for its deputation from a number of local authority and teachers' associations. ⁽⁶⁾ The only body which declined the invitation to join the deputation (other than the N.A.C.E.I.C. which wanted to act separately) was the C.V.C.P. J. F. Foster, Secretary to the C.V.C.P. replied to Alexander's enquiry in the following, rather vague, terms:

"The Committee was of the opinion that it would be inopportune for the Universities to take action in the matter at the present time."⁽⁷⁾

In the end the A.E.C. did not present its deputation for in 1953 the Minister of Education invited the N.A.C.E.I.C. to reconsider the issue following upon the presentation of its own deputation. On this issue G. N. Flemming, Permanent Secretary, Ministry of Education,

(1) Education, Vol 100, 4 July 1952, p.36.

(2) ibid, 12 Sep. 1952, pp.326-30.

(3) ibid, 26 Sep. 1952, pp.401.

(4) A.E.C. Files, C.69, Technological Education II, 1951-55, McLuckie to Alexander, 24 Dec. 1952.

(5) ibid, Alexander to various Associations, 7 Oct. 1952.

(6) Support from the joint deputation came from the N.U.T., the A.T.T.I., the A.P.T.I., the L.C.C., the A.M.C., the C.C.A., the Joint Committee of the four Secondary Associations and the Welsh Joint Education Committee.

(7) A.E.C. Files, C.69, Technological Education II, 1951-55, Foster to Alexander, 4 Nov. 1952.

advised Alexander as follows,

"I hope you can agree that we should await further action by the National Advisory Council before asking the Minister to receive another deputation. I believe that Weeks will try to get on with the job quickly, and if the Council can agree with your people and the major professional institutions on some suitable alternative to the present proposal, we here will certainly do our best to get it accepted."(1)

That expression of views was particularly interesting, indicating that the Ministry of Education itself was still sympathetic towards the recommendations made by the N.A.C.E.I.C. even though the government had just turned down the idea of setting up a College of Technologists. This reaffirms the earlier argument that during this period the Ministry of Education, under Miss Horsbrugh, played a very secondary - indeed quite ineffective role - in helping determine the Conservative Governments policy for higher technological education in the early 1950s.

(b) Circular 255

Although the awards issue remained unsolved, the new Conservative administration did not totally ignore the contribution of the technical colleges. On the contrary, alongside its plans for a technological university, the government also said it intended to provide improved financial assistance for courses of advanced technology in the technical colleges. To this end the Ministry of Education published a circular on 'Advanced Technology' in July 1952.(2)

In many respects this circular was very similar to the one which had been prepared under the late Labour Government.(3) There were, though, two important differences: firstly, Circular 255 naturally made no reference to a College of Technologists in contrast to the earlier document; and secondly it argued that,

(1) ibid, Fleming to Alexander, 23 Feb. 1953.

(2) Advanced Technology, (Circular 255), 14 July 1952.

(3) ANC Files, C69, Technological Education II, 1951-55, Bray to Alexander, 6 Sep. 1951.

"The Government have stated that they recognise the important contribution which some technical colleges ... can make to this form of education."(1)

Whereas the former government, in its White Paper of 1951 had indicated a readiness to provide,

"Improved financial assistance for selected colleges and courses."
(2)

This second point might be regarded as nothing more than a minor change in emphasis or perhaps even a slip on the part of the person responsible for preparing the document. However, with hindsight it is possible to attribute a more positive motive to the change, and to view it as the first step by the Ministry of Education towards a greater degree of rationality amongst the technical colleges. Clearly if greater financial assistance was to be made to certain colleges in respect of the advanced courses of technology which they offered, slowly such colleges would begin to differentiate themselves from the rest. Moreover, given the prestige accorded to colleges and their staff for carrying out advanced level work, it can but be assumed that if such work carried with it the promise of extra financial support, the colleges would endeavour to develop further in this direction, even if it was at the expense of other courses.

This interpretation of Circular 255 is further supported by the conditions it outlined which the colleges would have to meet if they were to be eligible for the increased rate of grant. For example, the circular recommended that courses in advanced technology should only be developed in institutions where (a) there was a high standard of accommodation and equipment, (b) there were highly qualified staff who had

(1) Advanced Technology, (Circular 255), para 1.

(2) Higher Technological Education, (Cmd. 8357), 1951, para 10.

considerable freedom in planning courses, (c) there was a good proportion of work already being done at an advanced level, and (d) there were facilities for teaching to a high standard in the fundamental sciences as well as in technology, and facilities for research. In addition it was considered essential that the technical colleges should have independent governing bodies which would be in executive control and were representative of industrial interests. In short, Circular 255 might be looked upon as the government's first tentative steps towards a regional policy⁽¹⁾ for higher technological education in the technical colleges.

Thus in terms of the material conditions enjoyed by the technical colleges, both the late Labour Government and the new Conservative one saw the need for certain improvements. The difference in their approaches lay in the way that the Conservative Government seemed to be interested in improving the material conditions alone.

Indeed, it was on the basis of this narrowness of approach to the problems of the technical colleges that Sir Ronald Weeks criticised government policy. He accepted that in time the implementation of Circular 255 would give rise to improved material conditions for the technical colleges, but this alone, he felt, was not sufficient. Besides a "material sickness", the colleges were also suffering from a "psychological sickness" which Weeks thought could best be overcome by the introduction of advanced courses - preferably sandwich courses - based on a strong scientific foundation, and leading to the conferment of a nationally-recognised award.⁽²⁾ Weeks also argued that the administration of the increased rate of grant was liable to prove

(1) A policy whereby advanced level work was concentrated in a single institution in each region, and lower level work carried on by local colleges.

(2) Education, Vol 100, 12 Sep. 1952, pp.326-330.

difficult, a point also made by the Association of Municipal Corporations:

"The Association propose to watch most carefully how the detailed arrangements envisaged in Ministry of Education Circular 255 work out in practice. The special advanced technology grant appears to be hedged around by so many conditions that the Association are somewhat fearful lest certain deserving colleges and courses therein will be ruled out despite their undoubted merits."(1)

Furthermore Major-General C. Lloyd, Director of the City and Guilds of London Institute, was critical of the government's policy for leaving the initiative for future developments with the local education authorities who would have to find 25 per cent of the added expense - at a time when the burden of education on the rates seemed intolerable.(2)

The government obviously conceded these criticisms relating to the administration of the increased rate of grant for it issued Administrative Memorandum No. 436,(3) to provide some further advice on the matter. However, even this was deemed inadequate by some, and the Times Educational Supplement suggested that this was because the Minister of Education herself was rather vague as to the policy she was pursuing.(4) This criticism of Miss Horsbrugh in respect of this policy was perhaps rather unfair. Nevertheless it possibly contained a grain or two of truth, reflecting the way that the Minister often seemed to be out of step with the policy that the government was actually implementing in the field of higher technological education. As will become evident in the next section, this was certainly the case as regards the awards issue.

(c) The Awards Issue Reconsidered

On June 12th 1952, in reply to a series of questions in the Commons probing for the reasons why the government had rejected the idea of

(1) AEC Files, C.69, Technological Education II, 1951-5, Memorandum 29 Oct. 1952.

(2) Education, Vol 100, 24 Oct. 1952, pp.580-3.

(3) Administrative Memorandum No. 436, 11 Nov. 1952.

(4) T.E.S. 21 Nov. 1952, p.937.

establishing a College of Technologists, Miss Horsbrugh answered,

"Perhaps that question could best be put to my right hon. Friend the Chancellor of the Exchequer. He and the Government evidently considered that the policy of the late Government was not the best."
(1)

The phrasing of this reply was perhaps more than a little unfortunate. It implied that the Minister herself had not been a party to that decision although it affected institutions under her ministerial control. Then, only a week later the Minister expressed her willingness to consider any representations made to her in respect of technical college awards⁽²⁾ - an announcement which seemed to be in complete contradiction to the government's recently announced policy.

Thus there seems to have been some difference of opinion between members of the Cabinet - in particular, R. A. Butler and Lord Cherwell - and Miss Horsbrugh as to how best to proceed with the development of higher technological education in the technical colleges. It seems as if the majority of the government in 1952 did not attribute as much importance to the awards issue as did those in the technical colleges themselves, and indeed, as did the Ministry of Education. Moreover, with the Minister of Education excluded from the Cabinet she was unable to present a case for the reconsideration of the awards issue at this time.

However, pressure for its reconsideration was exerted by the N.A.C.E.I.C. and the A.E.C., and equally importantly, these pleas seem to have been received sympathetically in the Ministry. The A.E.C.'s continued support and pressure for the establishment of a national award-granting body was reflected in a number of ways. Firstly there were the resolutions passed annually on technological education between 1952-54.

(1) House of Commons, Vol 502, 12 June 1952, col 396.

(2) ibid., 19 June 1952, col 154.

At the annual general meeting in 1952 the A.E.C. passed the following resolution:

"That this Association repeats its expression of hope that the proposals contained in Command Paper 8357 will be carried into effect with the least possible delay."(1)

This was followed in 1953 by a more strongly worded resolution stressing the need for a qualification equivalent to a degree:

"That this Association requests the Ministry of Education to impress on Her Majesty's Government that the urgent need for improved technological education to improve productive capacity emphasises the importance of appropriate qualifications for its advanced courses, and urges the N.A.C.E.I.C. to press for the institution of qualifications of degree standard as a recognition of advanced courses of technological training."(2)

By 1954 the A.E.C.'s earlier expression of hope was replaced by regret at the Ministry of Education's lack of action in this field:

"That this Association notes with deep regret that a decision has not yet been taken to establish a national award-making body in technological education and urges the Minister to bring this matter to a successful conclusion at the earliest possible date."(3)

In addition, as already referred to above, (4) the A.E.C. set in motion plans for a deputation on this issue to the Ministry of Education.

Finally, as is indicated in the correspondence which passed between Alexander and B. E. Lawrence, Chief Education Officer for Essex, Alexander was prepared to argue this case at any opportunity presented to him. (5) Thus Alexander revealed that it was the A.E.C.'s intention to press for the establishment of a national award-granting body when it submitted evidence to the Select Committee on Estimates which was looking into the expenditure of the technical colleges.

(1) Education, Vol 100, 4 July 1952, p.36.

(2) Education, Vol 102, 10 July 1953, pp.51-52.

(3) Education, Vol 104, 2 July 1954, pp.23-24.

(4) see p. 102 above.

(5) A.E.C. Files, C.69, Technological Education II, 1951-55, Alexander to Lawrence, 6 Feb. 1953.

As for the Ministry of Education itself, its readiness to reconsider the awards issue has already been noted and presumably it was on account of this as well as the influence exerted by the N.A.C.E.I.C. and the A.E.C. that the Minister of Education announced in the Commons, in March 1953, that she had asked the N.A.C.E.I.C. to give further consideration to it.⁽¹⁾

Thus by 1953 there seem to have been two quite distinct policies for higher technological education. On the one hand the Chancellor of the Exchequer was encouraging the universities to increase their output of technologists, and planning how best to distribute funds to meet this end; and on the other hand the Ministry of Education was providing an increased rate of grant for courses of advanced technology in the technical colleges, as well as setting in train again renewed discussion of the awards issue. Unfortunately, though, these policies were being pursued quite independently of one another, with the danger of course of duplication and the wasting of resources. In no sense could these be characterised as a dual policy.

The actual progress of these revised plans for a national award-making body from their starting point amongst the recommendations of the N.A.C.E.I.C.'s report to their final drafting in terms of a diploma in technology to be awarded by the National Council for Technological Awards, was often tortuously slow. Within the N.A.C.E.I.C. itself there had been virtually unanimous agreement on the original proposals, and to turn this support around to acceptance of new although similar proposals, was no easy task. In addition, the N.A.C.E.I.C. had considerable problems in its dealings with the three Engineering Institutions.

(1)House of Commons, Vol 513, 19 Mar. 1953, col 23.

The three Engineering Institutions adhered closely to proposals which were modelled on the Percy Report. The essential features which they advocated were that a few technical colleges should be selected for development as Royal Colleges of Technology to concentrate on advanced work leading to awards equivalent to university degrees; that the award should be an 'Associateship' of the college in question; that the colleges should not be under the narrow control of the local education authorities, and that an advisory committee be set up to assist the Minister in allocating Exchequer funds to the Colleges.⁽¹⁾ These proposals were clearly at odds with those outlined by the N.A.C.E.I.C. both initially and later. Quite simply, the Engineering Institutions opposed any national award-making body for fear that it would usurp much of their own work and prestige.

The National Advisory Council held a number of meetings with the three Institutions between April 1953 and April 1954, by the end of which time a compromise began to appear possible. However, in April 1954 the three Institutions wrote to the N.A.C.E.I.C. making it clear that they had reverted to their original attitude and were thus unable to reach an agreement with the N.A.C.E.I.C.⁽²⁾ Thus the latter continued to study the problems surrounding this issue without obtaining any form of agreement with the Engineering Institutions.

As for the differences of opinion within the N.A.C.E.I.C. itself, these were manifested in the Minutes of the 8th Meeting of the Council held on 27th July, 1954. A number of members opposed the revised proposals and suggested some alternative lines of action including a reversion to the initial proposal for a Royal College of Technologists

(1) AEC Files, B136, Technological Education (N.A.C.E.I.C.) 1945-55, Minutes of the 7th Meeting of the N.A.C.E.I.C., 6 Apr. 1954.

(2) ibid.

as well as a report to the Minister indicating that there was so much doubt about the revised proposals that the Council was unable to make any recommendations at all. However, when the revised proposals were eventually put to the vote they carried the day despite an attempt to put an amendment through. (1)

The revised proposals were sent to the Ministry of Education in September 1954. The N.A.C.E.I.C. recommended that a National Council for Awards in Technology should be set up, together with Boards of Studies in Engineering and in Technologies other than Engineering, which were to be responsible for creating and administering the Diplomas in Technology. These awards were not to be professional qualifications but educational awards equivalent to university first degrees. The N.C.T.A., which was established in July 1955, closely resembled these recommendations. At last the awards issue had reached a solution. How the diplomas in technology would develop was unclear, but there was widespread satisfaction that, at least in the short term, the issue had reached a satisfactory solution. The N.C.T.A. was welcomed by the Times Educational Supplement (2) and by those in the technical colleges themselves. (3)

(d) The First Steps Towards a Dual Policy for Higher Technological Education, 1954-5

Between the presentation of the revised proposals for a national award-making body and the establishment of the N.C.T.A. in 1955 there was an important shift in government policy for the technical colleges. During the preceding years the colleges had been rather left out in the cold: developments had been taking shape quietly in the Ministry of

(1) ibid, Minutes of the 8th Meeting, 27 July 1954.

(2) T.E.S., 22 July 1955, p.785.

(3) ibid, 12 Aug. 1955, p.850.

Education but they had formed no obvious part in the government's general scheme for developing higher technological education. That, so it seemed, was to be the responsibility of the universities alone.

The first sign of change was rather a negative one when in July 1954, as part of its announcement about the development of higher technological education in just a few universities, the government made it clear that it was keen to develop technological education only in institutions already in receipt of a recurrent grant from the U.G.C. In this instance the Chancellor indicated that this meant he was unable to institute any change in the status of the Bradford technical college.⁽¹⁾ More generally it spelt frustration for the hopes of all large technical colleges aspiring to university status.

This statement was followed in December 1954 by a rather more comprehensive statement of government policy for the technical colleges, a statement which was made in a debate in the Lords in response to a memorandum published by the Parliamentary and Scientific Committee.⁽²⁾

The Parliamentary and Scientific Committee maintained that for the time being there was no need to envisage any further major expansion of the universities.⁽³⁾ Instead it argued that there was much room for expansion and improvement in the technical colleges. It agreed that some progress had been made in this field in the last few years, but pointed out that:

"It has been slow, hesitant, hampered by controversy and not sufficiently in keeping with the urgency of the problem."⁽⁴⁾

The Committee thus suggested that a new approach to the subject should be made, and to this end recommended the up-grading of 20

(1) House of Commons, Vol 530, 13 July 1954, col 284-7.

(2) Higher Technological Education, Memorandum by the Parliamentary and Scientific Committee, 1954.

(3) ibid, para 16.

(4) ibid, para 28.

technical colleges to Royal Chartered Colleges of Technology.⁽¹⁾ In particular the colleges were to concentrate on providing full-time sandwich courses; and were thus to provide courses complementary to but different from university courses. On the awards issue the Committee came down in favour of a 'Bachelor of Technology',⁽²⁾ (These recommendations were similar to those made by the Percy Committee in 1945).

The Committee's recommendations relating to finance were also interesting, not least because a solution which closely resembled them was actually implemented in the early 1960s: that the up-graded colleges should be financially independent, but that initially they might best be financed by a direct government grant.⁽³⁾

These recommendations were rejected by the government,⁽⁴⁾ and indeed it went even further by refusing to accept the premises, both explicit and implicit, on which the Parliamentary and Scientific Committee had built its case: that progress in developing the technical colleges since World War II had been slow;⁽⁵⁾ and that any such developments were constantly hampered due to the way that the colleges came under the control of the local education authorities. On the contrary, the government asserted that the technical colleges had developed considerably in this period - suitably ignoring the ban on new buildings between 1952 and 1954.

From there the government went on to outline its own policy for the technical colleges, which the Marquess of Salisbury described as a rather

(1) ibid, para 46.

(2) ibid, para 64.

(3) ibid, paras 49 and 50.

(4) House of Lords, Vol 190, 7 Dec. 1954, col 187-266.

(5) The government made this statement despite the criticisms of the technical colleges outlined in some detail in the 12th Report of the Select Committee on Estimates, 1953.

more evolutionary policy than that suggested by the Parliamentary and Scientific Committee. The policy to be adopted was one of regional planning, whereby some 30 technical colleges would ultimately be developed into advanced regional colleges, whilst others would be left to carry out the lower level work.⁽¹⁾

In short this was simply the continuance of the policy already being pursued by the Ministry of Education in the technical colleges. However, where it differed from what had been happening in the preceding years was in the way that the government now recognised it as a necessary and complementary part of its policy for expanding facilities for higher technological education:

"We should look mainly to the university system for educating a boy leaving a grammar school who continues his full-time education in science and technology up to degree and post-graduate levels, and our policy for university expansion has been framed with that end in view. But ... the technical colleges are not altogether excluded from this field of higher technology. On the contrary, the Government realise that regional colleges must meet the increasing demands for high-level training, both for those who are actually working in industry and also for others who require special technological courses. For that reason we are only too anxious to improve facilities as quickly as possible."⁽²⁾

This tentative move in the direction of a dual policy for higher technological education suggests that the Ministry of Education was at last having some success in bringing the problems relating to the technical colleges before the government as a whole.

In July 1955 the government clarified its plans for the technical colleges still further. Sir David Eccles, who had succeeded Miss Horsbrugh as Minister of Education in 1954,⁽³⁾ revealed that the government intended to establish an alternative, broader route to the professions

(1) House of Lords, Vol 190, 7 Dec. 1954, col 245.

(2) ibid.

(3) T.E.S., 22 Oct. 1954.

through the technical colleges. Precise details were not laid down but Eccles did differentiate between local colleges and advanced colleges: the latter were to provide courses on a regional basis.⁽¹⁾

This announcement differed from that made in the Lords in the previous December in two respects. In the first place Eccles distinguished himself from other Ministers who had made policy statements concerning the technical colleges by delivering a most vigorous and enthusiastic speech: by his imaginative and enlivened description of the brighter future which he envisaged for the technical colleges.

Secondly, he suggested that this policy was merely the first evolutionary step on the path to up-grading a number of technical colleges to university status:

"In other words, what hon. and right hon. Gentlemen opposite wanted to do, which was as I understand it, to select two, three or four colleges and promote them, as it were, to the status of the Massachusetts Institute of Technology - ... I am sorry, some kind of university status - can in time be achieved by this method. Since we have to deal with a wide distribution of colleges existing already - and local authorities take great pride in these colleges - the best position we can take up is half-way between the view of those who wish us to select four or five straight away now, and the view of those local authorities who would like there to be no free trade in students at all."⁽²⁾

This, then, should perhaps be seen as an interesting attempt to combine what had formerly been regarded as two separate and opposed approaches to the development of the technical colleges: the evolutionary and the revolutionary. The Minister of Education seemed to be arguing that eventually amongst those colleges in which students qualified for the new diplomas in technology there would emerge a

(1) House of Commons, Vol 544, 21 July 1955, col 599-600.

(2) ibid, col 602.

handful which would merit up-grading to national status.

(e) A Change in Direction: How Might This Be Explained?

By 1955 it is clear from the foregoing that there had been a decisive change in the direction of government policy for higher technological education. How can this be explained?

This change seems to have been due to two main factors. Firstly, the fact that this change in direction coincided with a change in ministerial control at the Ministry of Education cannot be overlooked. The problems faced by Miss Horsbrugh whilst she was Minister of Education, especially when that appointment did not carry with it a place in the Cabinet, have already been mentioned, as have her own personal attributes which seemingly would not have stood her in good stead as a Minister. By contrast Eccles was a much more dynamic Minister, and he seems to have been particularly keen and successful in his aim to improve the lot of the technical colleges. Indeed, as an indication of his attitude towards education as a whole the Times Education Supplement quoted him when rallying Young Conservatives before the General Election of 1951:

"A Conservative Minister of Education will search for the boys and girls of ability and will so shape the system of education that everyone of them has the chance and the schooling to go to the top."
(1)

Secondly, Eccles' accession to the Ministry of Education coincided with a steadily growing awareness of Britain's inadequacies in the field of higher technological education and a fear that unless things were improved the country would lose out to its foreign competitors. Moreover, as Cotgrove perceived in 1958,⁽²⁾ this awareness was matched by a slowly changing assessment of the nation's manpower requirements. By the turn of the decade it was already becoming

(1) T.E.S., 22 Oct. 1954.

(2) Cotgrove, op cit., chap. 12.

clear that not only the universities but also the technical colleges could and should be making a permanent and sizable contribution to the nation's output of qualified technologists. That the nation did not simply need technologists trained at the very highest levels but also those trained in the technical colleges - and these in considerably greater numbers than heretofore- was first suggested by the Anglo-American Council on Productivity in its report on 'the Universities and Industry' of 1951.⁽¹⁾ This report provided some very interesting comparisons between the output of scientists and technologists from the universities of America and Britain respectively. Due to a difference in standards the Anglo-American Council on Productivity compared the British doctorate and master's degrees with the American doctorates and the British bachelor's degrees with the American master's degree and came up with the following conclusion:

"Since there appears to be a general impression in Great Britain that America is producing a much greater proportion of men trained to the higher levels in science and technology, it should be emphasised that, when account is taken of the different standards in the two countries, the British position is not at present, as the popular view would suggest, unfavourable."⁽²⁾

However, the report went on to suggest that,

"The outstanding difference between the two countries in the production of scientific and engineering personnel for industry is to be found at the level of the American first degree."⁽³⁾

At this level,

"We in Great Britain have nothing to show except the holders of Higher National Certificates. These men secure their technical training by part-time day and evening courses but, while the technical content of their course may go beyond that of the first-degree course in America, their education is obtained in circumstances which are less stimulating and less favourable to the production of a well-rounded man of wide interests and a broad educational background. In any case, the number of Higher National Certificates awarded in the United Kingdom in 1949 was less than 5,000 - i.e. less than one-tenth of the number of bachelor's degrees in engineering obtained in America, and less than one-third when adjusted on a population basis."⁽⁴⁾

(1)Universities and Industry, Anglo-American Council on Productivity, 1951.

(2)ibid, p.11.

(3)ibid, p.11.

(4)ibid, p.12.

Shortly after the Anglo-American Council on Productivity had expressed its views the A.C.S.P. also indicated that it was changing its attitude towards the technical colleges and their contribution to higher technological education. In its 5th Annual Report it commented,

"We understand from the Ministry of Education that the technical colleges could be geared to increase their output of scientists within a comparatively short time provided employers encourage the flow of additional students. A few colleges could be selected for special development with the immediate object of turning out more men trained to the level with which we are concerned. While we welcome any proposals to increase the output of the technical colleges, we wish to make it clear that this could only offer a partial solution to the problem by which we are faced."⁽¹⁾

This was certainly a complete turn around from the views enunciated by the A.C.S.P. in 1948.

However, whilst it was quite apparent to some bodies that the technical colleges could make an important contribution to the output of technologists - a view that at least the Ministry of Education also shared judging from its attitude towards the awards issue - it was not accepted by the government at large during the early part of the 1950s. Indeed, in 1952 Lord Cherwell spoke in the most derogatory terms about the work carried on in the technical colleges,⁽²⁾ an event which prompted Alexander to suggest that such an ill-phrased speech was possibly the result of Lord Cherwell having mislaid his notes."⁽³⁾

In conclusion, then, the evidence in this chapter suggests that in this period between 1951 and 1955 the weight - or obversely, the ineffectiveness - of certain key individuals had a very real influence on the course of government policy for higher technological education.

(1) 5th Annual Report, A.C.S.P., (Cmd. 8561), 1951-2 (May 1952).

(2) Lords Debates, Vol 177, col 181, 12 June 1952.

(3) Education, Vol 99, p 939, 20 June 1952.

Finally it is perhaps worth pointing out that, although during this period the government of the day was aware of the threat from other industrial competitors, this fear did not reach its climax, as reflected, for example, in Churchill's Woodford Speech,⁽¹⁾ until after the first few tentative steps towards a dual policy for higher technological education had been taken.

E. Some Concluding Remarks

Before turning to the second half of the 1950s, having looked in detail at the development of successive governments' policies in the field of higher technological education during the decade succeeding the end of World War II, it seems an appropriate point to try and outline some general comments on the evolution of this particular policy-making process so far.

Standing back from the detailed developments described in the preceding chapters a number of interesting points came to mind. First and foremost it is impossible to ignore the underlying concensus in favour of increasing the nation's output of technologists. As has already been argued in the introductory chapter, and as is substantiated in both chapters 2 and 3, throughout this decade all those involved in this policy-making process agree that expansion is what is needed.

Yet simultaneously there is considerable confusion as to the best means of achieving this end, which is perhaps the main reason why the post-war decade was one of intense debate and comparably little action.

Moreover, in considering in particular the developments between 1952-55, it is interesting to note that by 1955 virtually all those

(1)T.E.S., p.1276, 9 Dec. 1955.

involved in this policy-making process have got some part of what they wanted: Imperial College, London is being developed as the British equivalent to the Massachusetts Institute of Technology; the faculties of technology in a number of other universities such as Leeds and Manchester are also being strengthened; certain of the larger technical colleges are being encouraged to develop their courses of advanced technology, and an attempt has been made to resolve the awards issue.

In short, no single solution to this debate concerning the future development of higher technological education has been adopted. Instead a compromise solution seems to have been reached, encompassing to a lesser or greater extent all the various solutions put forward, and thereby resulting in a plan for the future development of higher technological education which represents a significant addition to the various policy options initially presented to the policy-makers.

Such a development might well be inevitable given the way individuals' personalities involved in this debate were seen as the advocates of various seemingly exclusive alternatives. By adopting this compromise solution the political honour of those concerned is left intact.

Moreover, it is also worth reflecting upon whether any single solution could in fact ever prove acceptable in such a field of policy-making as higher technological education, where a wide number of divergent interests are involved i.e. the universities, the technical colleges, the local education authorities, the Ministry of Education, the Treasury and so on. As at least Eccles may have perceived, to look for a single solution to the problem of expanding higher technological education was possibly the wrong approach. Where a complex system

of higher and further education already existed as in this case, perhaps the best way forward was to look for the way in which the various sectors could each play its part in the expansion and further development of higher technological education.

Chapter 4

A Dual Policy for Higher Technological Education: Expansion and Consolidation in both the Universities and the Technical Colleges, 1956-62

A. Introduction

As the preceding chapter indicated, during the period 1952-56 government policy for expanding higher technological education had predominantly favoured the universities. However, it was made equally clear that during the second half of that period, i.e. 1954-56, the government was beginning to have second thoughts about the respective roles of the universities and the technical colleges, and was slowly feeling its way towards what can best be described as a dual policy for higher technological education. Perhaps the most obvious manifestation of this change in emphasis in government policy came in February 1956 with the publication of the White Paper on 'Technical Education'.⁽¹⁾ This document announced the government's intention to build up the technical colleges and improve upon the type of courses they provided at all levels. Also closely linked with this, and of particular importance in the field of higher technological education, was the establishment of the National Council for Technological Awards in July 1955. Its role will be looked at in detail later in this chapter. At this juncture it need simply be noted that the N.C.T.A. was to provide a nationally recognised award for advanced courses in technology taught in the technical colleges. The foundation of this Council thus went some way towards resolving the awards issue which had been repeatedly resurrected, argued over and shelved following upon the Percy Report of 1945 and the impetus that the latter had given to the extremely wide and complex debate over higher technological education in the ensuing years.

(1) Technical Education (Cmd 9703), Ministry of Education, 29 Feb. 1956.

After 1956 the universities could no longer be regarded as the sole legitimate providers of higher education. At least in the technological sphere, with the support of the N.C.T.A., the technical colleges too were to play their part.

This shift in policy, some of the reasons for which were spelt out in the preceding chapter, was also accompanied by a considerable expansion in the size of the higher education sector overall. That is to say, expansion continued in the universities alongside that in the technical colleges. It is this general expansion which demands some comment before the unfolding of government policy is looked at in both the universities and the technical colleges. In short, the question to be answered is, what factors contributed to this rapid acceleration in the size of the higher education sector in the second half of the 1950s? There seems to be no simple explanation for this growth. Rather the reasons are multiple -- social, political and economic.

Firstly, on the economic front the picture generally was looking a lot brighter by this time: the years of post-war austerity were giving way to a time of comparative prosperity. By 1956 there was a considerable improvement in the British economy to the extent that a consumer boom was experienced - although interrupted by minor economic set-backs. Gradually more money and resources were becoming available to facilitate investment. At last the government found itself able to provide greater support for expansion of both the universities and the technical colleges.

Secondly there was an increasing demand for higher education from the steadily growing number of boys and girls staying on at school until 17 or 18 years old ("the trend"), reflecting the increased social acceptability of education. During the 1950s a considerable number of

young people who would hitherto have taken up trade apprenticeships went to a university instead: the universities had come to be regarded as institutions where some training for jobs could and did take place. The increase in the award of local education authority grants also played an important role here, making it possible for young people to take advantage of a university place.

This "trend", which may be seen as a post-war social phenomenon, was further enhanced during the period concerned by a growing sense of optimism and opportunity for personal advancement which mirrored the up-turn in the economy. This attitude was fostered by successive Conservative Governments and in particular by Sir David Eccles who was twice Minister of Education.⁽¹⁾ Elsewhere⁽²⁾ Eccles has been described as one of the finest exponents of success and expansionism that the Conservative Party has had, a view which could clearly be substantiated by a speech Eccles made in the Commons in July 1955:

"All boys and girls will be given the opportunity to go as far as their abilities and enterprise will take them."⁽³⁾

Clearly this philosophy of success and expansionism had strong political overtones, reflecting the Conservative Party's emphasis upon self-help and the opportunity state.

Interestingly, throughout this period there was also a willingness on the part of the universities themselves to expand to help meet this growth in demand for higher education, as will be shown later in this chapter.

Finally, during this period there was within government circles at least a growing appreciation of what the 'bulge' (the growth in the

(1) Eccles was Minister of Education, 1954-7 and 1959-62.

(2) H. Kogan, Educational Policy-Making (George, Allen and Unwin Ltd., 1975) p. 27.

(3) House of Commons, Vol. 544, 21 July 1955, col 599.

age-group due to the increase in the birth-rate in the immediate post-war years) would mean for higher education in the early 1960s, and an awareness that early action would have to be taken to cope with it. In particular, as Lord Boyle has pointed out, Eccles showed himself to be extremely perceptive on this issue too.⁽¹⁾

It is against this general background that the government's dual policy for higher technological education as introduced in 1956 must be understood, albeit compounded and complicated by the still on-going debate as to how best develop technological education. That is to say, the developments which resulted from this dual policy should not be seen as ending the debate. More realistically they might be regarded as a staging post at which ground was consolidated before a renewed period of debate again broke out. Indeed, such a view provides some justification for the title of this chapter, which indicates that the period in question was one of expansion and consolidation. It was the developments which occurred during this period which help lay the broad lines of the debate which was to follow in the early 1960s.

In the interest of clarity in outlining the developments within the field of higher technological education during the years 1956-62 I shall deal with the two sectors - the universities and the technical colleges - separately, and in the first instance attention will be focused upon the universities.

B. University Expansion 1956-62

(a) Some Attitudes towards Expansion in the Universities in the mid-1950s

Bearing in mind that any attempt to generalise about the attitude of the universities themselves ought really to be hedged around

(1) Lord Boyle, (1976) op. cit., p.5.

with qualifications and treated in a fairly circumspect manner simply on account of the very heterogeneous nature of this group of institutions it can be said that by the mid-1950s the universities in general had begun to display their readiness to co-operate with the government's plans for the further expansion of higher education within their walls although they retained a certain ambiguity in their attitude towards higher technological education.⁽¹⁾ In particular reservations were expressed at the rate at which this expansion was being allowed to proceed. For example, it was clear that by 1955 Cambridge University was distinctly unhappy about the rate of expansion which it had permitted since the war, and in respect of higher technological education, the General Board of the Faculties at Cambridge argued that,

"Further expansion in the teaching of applied science and technology might best be left to other universities, particularly those in the industrial areas to which those fields have special relations."⁽²⁾

Some individual vice-chancellors also occasionally expressed concern about the rate of university expansion, and the effect that this might have upon university education. Sir John Wolfenden, Vice-Chancellor of Reading University, for example, argued that rapid university expansion was undermining the traditional British conception of a university education, and that Britain was slowly moving towards the American model of mass higher education.⁽³⁾

The U.G.C. also showed itself to be slightly unsure or ambiguous in its attitude towards expansion. On the one hand it should perhaps be noted that in its report for the quinquennium 1957-62 it erred slightly

(1) Ashby, *op. cit.*, p. 66.

(2) *The Times*, 10 Dec. 1955.

(3) *T.E.S.* 6 Mar. 1959, p. 393.

on the side of over-estimating the size of the university population for the 1960s and 1970s.⁽¹⁾ On the other hand, this expansionist spirit was tempered with a sense of realism in so far as the U.G.C. expressed some concern as to whether the universities would be able to recruit academic staff in sufficient numbers and of the requisite calibre to deal with the proposed increase in student numbers.⁽²⁾

If the attitude of the universities and of the U.G.C. respectively sounded certain notes of reservation, there was no such ambiguity in the views of either the Treasury or the Ministry of Education. Especially after the launching of Sputnik in 1957 the former was strongly of the opinion that political pressure in favour of greater university expansion would increase;⁽³⁾ whilst the Ministry of Education supported the idea for, as has already been indicated, it was acutely aware that the number of students qualified for university entry would rise rapidly from the early 1960s onwards due to the effect of the 'bulge'. Indeed, by the end of the 1950s it seemed as if the 'trend' too was increasing at a greater rate than the Ministry of Education had originally estimated, thereby reinforcing the argument of the expansionists. By 1959 the Ministry of Education had informed the U.G.C. that the figures suggested that the proportion of the age-group staying on at school and likely to qualify for university entrance had risen from 5 per cent to 7.5 per cent.⁽⁴⁾

(1) See Appendix 5 which sets out the U.G.C.'s estimate of the potential size of the student population in the universities, 1959-60 to 1976-77, and Appendix 6 which sets out the actual number of full-time students in the universities in Great Britain, 1938-70.

(2) University Development, 1957-62 (Cmd 2267), U.G.C., para 211.

(3) A point made in interviews by both Sir Antony Part on 10 Apr. 1980 and Lord Boyle on 29 Apr. 1980.

(4) University Development 1957-62 (Cmd 2267), U.G.C., 1964, para 207.

(b) Some Figures Illustrating the Expansion in the Universities
1956-62

Some idea of the dimensions of this expansion can be gained from consideration of the government's grants to the universities during these years; and from the size of the student population. At this period these two indicators were quite closely related to one another for the universities showed great reluctance to expand without the promise of adequate financial support from government funds. Indeed, the universities were really given the go-ahead for expansion in January 1957 when the Chancellor advised the U.G.C. that it could discuss expansion with the universities on the assumption that the building programme would be raised to £15 million a year for the three years 1960-62.⁽¹⁾

Looking firstly at the size of the student body, Appendix 6 indicates that there was quite a steep rise in student numbers after 1954-55, following upon the low point in 1953-54 when the Further Education and Training Scheme came to an end. This rise was a result of the 'trend', and it is particularly important to note that it occurred in advance of the recommendations for expansion made by the Robbins Committee on Higher Education.⁽²⁾ Indeed, according to Boyle, Enoch Powell was able to demonstrate that the rate of university expansion was greater in the years immediately preceding the Robbins Report than after it!⁽³⁾

As for the distribution of students between the different faculties, this can be seen in Appendix 7. This indicates that during the

(1) ibid, para 204.

(2) Higher Education (Cmd 2154), Report of the Committee on Higher Education appointed by the Prime Minister under the chairmanship of Lord Robbins (H.M.S.O. 1963).

(3) Lord Boyle, Government, Parliament and the Robbins Report (The Joseph Payne Memorial Lecture, 1979) p.9.

period concerned the greatest proportionate increase was in the faculty of pure science (44.1 per cent) and in applied science (37.9 per cent). Nevertheless even in 1962 the arts and social science students still comprised 43 per cent of the total full-time student population, whilst pure science students comprised 25.4 per cent and applied science students only 15.2 per cent of the total.

Turning now to university grants and dealing firstly with those which were non-recurrent, it was in November 1956 that the Financial Secretary to the Treasury, Henry Brooke, M.P., announced an increase in the amount of money available for university building projects in line with the proposed increase in university places from 85,194 in 1955-56 to approximately 106,000 by the mid-1960s. In 1957 building projects were to be approved up to the value of £10.4 million, and the sum was to be raised to £12 million for 1958 and 1959 respectively.⁽¹⁾ These sums were to be exclusive of the cost of sites, fees and equipment, and did not cover the cost of expanding Imperial College, London.⁽²⁾ By way of comparison it should be noted that in 1956 only £4.8 million was made available for the university building programme.

Then in January 1957 the Chancellor announced that the building programme was to be raised to £15 million per year for the three years 1960-62;⁽³⁾ and again in January 1961 he announced a further increase for the calendar years 1962 and 1963 from £15 million to £25 million per year. He also advised the U.G.C. to invite the universities to make their building plans on the basis of starts of £30 million in both 1964 and 1965.⁽⁴⁾

(1) House of Commons, Vol 560, 21 Nov. 1956, col 1750-1.

(2) University Development 1952-57 (Cmd 534) U.G.C. 1958, para 159.

(3) University Development 1957-62 (Cmd 2267) U.G.C. 1964, para 204.

(4) ibid, para 215.

The government was thus clearly quite prepared to make a substantial increase in its non-recurrent grants to the universities. However, the outlook was not as bright as far as the recurrent grant was concerned. The figures, as originally estimated in 1956 are set out below. (1) These proved quite inadequate, and gave the universities considerable cause for dissatisfaction. (2) By the spring of 1958 The Times was arguing that the universities were facing deficits and retrenchment in the coming year. (3) In the end the recurrent grant had to be increased three times during the quinquennium to take account of various contingencies not foreseen in 1956. These adjustments were made for increases in the salaries of academic staff in 1957 and 1960 respectively, and in 1959 to allow for the effect of inflation and the greater influx of students than was originally estimated. (4)

Clearly then the universities experienced some considerable change in their overall size during this period and enjoyed a fairly generous scheme of government investment. However, how adequate this was within the context of a rapidly expanding system of higher education is difficult to estimate. Certainly some doubt was expressed on this score by the Advisory Council on Scientific Policy which wondered whether a total of 106,000 university places would be enough in the mid-1960s and in particular saw a need for many more places for students of science and technology beyond the two-thirds increase

(1) Recurrent Grants Made to the Universities: Estimates for the Period

<u>1957-62</u>	
1957-58	£30,600,000
1958-59	£32,300,000
1959-60	£34,350,000
1960-61	£36,750,000
1961-62	£39,500,000

(Source: Education, Vol 109, 22 Mar. 1957, p. 500).

(2) The Times, 21 Feb. 1958.

(3) The Times, 21 May 1958.

(4) University Development, 1957-61 (Cmd 1691) U.G.C., para 27.

proposed by the government.⁽¹⁾ As already indicated, though, this figure was periodically adjusted upwards until eventually the U.G.C. was in the position of over-estimating the potential size of the universities quite considerably.

(c) Higher Technological Education in the Universities 1956-62

During this period there were no major innovations in respect of higher technological education in the universities. However, one fairly important feature of these times was the decision that university expansion as a whole should be planned and authorised on the assumption that at least two-thirds of the increase would be in science and technology. This point was made by the Chancellor of the Exchequer in November 1956 when he announced the size of the university building programme for the years 1957-59. To this was added the following statement:

"It is certainly our intention to ensure that the universities and the technical colleges will, together, be able to produce at least the numbers of qualified scientists and engineers which the Committee on Scientific Manpower recently estimated to be needed over the period ten to fifteen years hence."⁽²⁾

In numerical terms this meant that the government was aiming to increase the output of scientists and technologists by rather more than 60 per cent in 10 years - a figure which was further subdivided into an increase in engineers of 70 per cent and in scientists in the order of 50 per cent. This was designed to enlarge the number of qualified scientists and technologists from about 135,000 in 1956 to about 220,000 in 1966. In terms of the annual flow of qualified scientists and engineers from institutions of higher education this would entail a rise from 10,000 in 1956 to 12,000 in each of the

(1) 10th Annual Report (Cmd 278) A.C.S.F., 1956-57, para 29.

(2) House of Commons, Vol 560, 21 Nov. 1956, col 1750-1.

following five years, and 16,000 in the next five years.⁽¹⁾

Judging from the government's reply to a Parliamentary Question in 1961, the targets set by the Advisory Council on Scientific Policy and accepted by the government were achieved well within the time span allotted to the increase. In fact the government claimed that by 1964 the annual output of scientists and technologists would be double what it had been in 1956. (This figure did not apply to the universities alone. The technical colleges' contribution was also included).⁽²⁾

Yet despite the introduction of a policy designed to increase the number of places in science and technology in the universities, as has already been shown, the proportion of arts students in the universities during this period hardly altered at all. No wonder that in 1958 F. Peart, M.P., asked the Chancellor of the Exchequer -

"Will the Minister give a special directive, if necessary, to the U.G.C. that the expansion must be in the field of applied science and technology, and not arts?"⁽³⁾

Not altogether surprisingly, this the Chancellor declined to do. What actually happened was that places in science and technology continued to multiply fairly rapidly, but they seemed to do so at the expense of such disciplines as medicine, agriculture and forestry, rather than the arts.

Certainly, the second half of the 1950s witnessed a quite unprecedented increase in the number of university places for scientists and technologists. However, at the turn of the decade it seemed as if a warning note was being struck. In June 1962 the University Appointments Board of Birmingham University suggested that there were signs

(1) Scientific and Engineering Manpower in Great Britain, A.C.S.P. 1956.
 (2) Education, Vol 117, 17 Mar. 1961, p. 576.
 (3) House of Commons, Vol 582, 20 Feb. 1958, col 1402.

of a falling off in demand for scientists and engineers.⁽¹⁾ Then in the autumn of that year G. S. Atkinson, Principal of the Rugby College of Engineering Technology, brought to the attention of the educational world the fact that there had been 221 vacant university places in technological subjects in October 1961.⁽²⁾ Such a figure in itself was not cause for alarm. Given the very nature of the system it was impossible to ensure that every university place was always filled. There must always be some leeway. Nevertheless these two pieces of information were significant for they coincided with the slowly developing feeling that possibly the supply of scientists and technologists was beginning to meet the demand. This was a question to which the Advisory Council on Scientific Policy was about to turn. It will be dealt with more thoroughly in the following chapter. At this point, however, let it be sufficient to suggest that to actually pose the question in this way presupposes certain traits about the education of a technologist, two of which I shall outline, and suggest are obviously false. In the first place, such an argument suggests that once educated as a technologist a person is suited for that type of a career only. Secondly, and closely related, it suggests that there can be no transfer between the career of a technologist, and that in any other field.

Finally, returning to the development of technological education in the universities between the years 1956-62, what certainly was made clear by 1962 was that the government had come firmly down against the idea of establishing a technological university in the United Kingdom.

(1) T.E.S. 15 June 1962.

(2) T.E.S. 26 Oct. 1962.

The issue was raised in the Commons in both 1957⁽¹⁾ and 1961;⁽²⁾ and in the latter year Sir John Cockcroft also made a speech in support of such a development. He argued,

"I believe that it will be necessary to found a major new technological university of at least 5,000 students aiming at doing as well as M.I.T., which has made tremendous contributions to the technology of the United States."⁽³⁾

However, despite some support for this idea both within the Commons and in the country at large, the government was not to be moved on this issue, and it reiterated its preference for building up the technological faculties of certain existing universities.

(d) The 'New' Universities

If the years 1956-62 did not see any major new developments in the universities in respect of higher technological education there was at least a fairly major change in the university body as a whole for between 1958 and 1961 seven 'new' universities were founded. The first governmental reference to this development came in the Commons in 1958 when the Chancellor of the Exchequer acknowledged that the university building programme for 1960-63 included monies to be used in the early building of a University of Sussex.⁽⁴⁾ The decision to establish a university in Sussex was closely followed up by plans for a further six institutions at Norwich, York, Kent, Lancaster, Warwick and Essex.

Interestingly, much encouragement was apparently given to the founding of these new universities by the Treasury on the grounds that it was possibly cheaper than expanding existing institutions. Lord Boyle, who was Financial Secretary to the Treasury at this time puts the case for this policy in the following terms:

(1) House of Commons, Vol 580, 19 Dec. 1957, col. 593-4.

(2) House of Commons, Vol 634, 9 Feb. 1961, col. 593-4.

(3) H.B.S., 6 Jan. 1961, p. 1.

(4) House of Commons, Vol 582, 20 Feb. 1958, cols. 1400-4.

"The advice I received was that if you had to provide for two thousand extra university students, it would probably be cheaper in terms of buildings to start a new university than to expand an existing one; the reason was that the expansion of an existing university, say from three thousand students to five thousand ran the risk that the university concerned would put in a strong case for new library accommodation, not just for the two thousand extra students, but for all five thousand."⁽¹⁾

However, in retrospect at least, Lord Boyle was clearly not convinced by the Treasury's line of argument. Having outlined the above argument he went on to comment:

"It was indeed an ingenious argument but it failed to allow sufficiently for the simple fact that universities are about professors and academic disciplines as well as about classrooms and library buildings. In the short run most of the urgently-needed places had to be provided in those universities which were already, academically speaking, going concerns."⁽²⁾

As for the Ministry of Education, although there is little direct evidence, it would seem as if its attitude towards the establishment of the new universities was somewhat ambivalent. Undoubtedly, as Lord Boyle has argued on numerous occasions,⁽³⁾ the Minister of Education himself was clearly anticipating a rise in the number of 18 year olds able and willing to take the opportunities offered them in the sphere of higher education, and he consequently welcomed the proposed expansion of the universities. Nevertheless there remains the suspicion that the Ministry of Education was wary of the setting-up of the new universities for fear they might undermine the developments which were simultaneously being encouraged in certain selected technical colleges. Indeed, where the establishment of the University of Sussex was concerned, it is fairly clear that this did cause the temporary suspension of the plans for the Brighton College of Technology.⁽⁴⁾ That such an attitude may have prevailed is not hard to understand: the establish-

(1) Boyle, (1979), op. cit., p. 6.

(2) ibid.

(3) For example, ibid., p. 4.

(4) The Idea of a New University: An Experiment in Sussex, ed. D. Daiches (Andre Deutsch Ltd., 1964), p. 125.

ment of seven new universities might well have undermined the Ministry of Education's position within higher education whilst it was still at an early stage. And indeed, such an attitude on the part of the Ministry might have partially contributed to the decision that, in the first instance at least, these universities should not develop faculties of applied science. In the late 1950's the proliferation of faculties of applied science in both the universities and the technical colleges was seen neither as necessary or economically viable.

However, this was apparently not the only reason why the new universities were not originally set up to embrace applied science as well as the arts and pure science. At this time there was also a fairly widespread belief in what has been variously described as "all the modern knowledge"⁽¹⁾ or "the new map of learning".⁽²⁾ This outlook was but transient, and closely linked with the sense of opportunity and hope for self-improvement and advancement which characterised the end of the 1950s. This attitude coincided with the establishment of the new universities, and was instrumental in shaping the foundation and style of these institutions. That these universities were to adopt a new approach to learning is illustrated clearly by M. Beloff in his work on these 'Plateglass' universities.⁽³⁾ The attitude was also echoed by the U.G.C. which argued that,

"If it were desired to start departments of engineering they should not follow traditional lines but should develop what may be termed engineering science."⁽⁴⁾

As Lord Boyle has suggested, the new universities were the fruit of a particular attitude at a particular point in time:

(1) Lords Debates, Vol 223, 11 May 1960, col 617.

(2) M. Beloff, The Plateglass Universities (Secker and Warburg, 1968), chap. 3.

(3) ibid.

(4) University Development, 1957-62 (Cmd 2267) U.G.C., para 263.

"One wonders whether anyone would have uttered that phrase 'all the modern knowledge' even five years later. In 1960 we had as a nation perhaps for the last time, a sense of stable ground, of increased mastery over circumstances. It seemed the right moment to launch a number of brand new universities, not simply to correct injustice, but also in order to seize the opportunities of an hour that seemed uniquely full of hope. There was the chance to offer new kinds of courses in institutions unencumbered by the legacy of past traditions and appointments."(1)

Here there is neither the time nor the space to consider these new universities at length. However, their development is an interesting one, not least because it forms quite a contrast to the development of the technical colleges. One pertinent illustration of this in the context of this thesis relates to the awarding of degrees: unlike the university institutions at Leicester, Nottingham and Hull which were restricted to preparing students for London external degrees until the granting of their charters in the 1950s and in sharp contrast to the technical colleges which were never permitted to award degrees of their own, these new universities were allowed to award their own degrees from the beginning, with only academic advisory committees to provide initial guidance. Small wonder the sense of injustice harboured by many of those in the technical colleges, as exhibited by J. S. Tait, Principal of the Northampton College of Advanced Technology. He pointed out,

"Although the colleges were designated not more than five years ago, most of them have an experience of rapid educational development going back over fifty years, and in many cases have always included some work of the higher level to which the colleges of advanced technology are now restricted.

The new University of Sussex is making a start later this year in temporary premises with a small number of students and, even if it is folly to suppose it can gather prestige overnight, it will award its own degrees in three years' time."(2)

(1)Boyle, (1979), op. cit., pp.6-7

(2)T.E.S. 10 Feb.1961, p.256.

A further interesting point of contrast between the new universities and the technical colleges concerns the appointment of staff. When the new universities were established they were able to appoint fairly young people to quite senior posts, and they brought with them new ideas about the way the universities should be organised and on the way undergraduate courses were designed and taught. By contrast, when the Ministry of Education decided to upgrade a select few technical colleges to concentrate on courses in advanced technology, the staff in these institutions did not change much, and the colleges were thus not imbued with that sense of enthusiasm that those involved in a new venture often enjoy. However, already that pre-empted discussion of government policy for the technical colleges which is found in the next section of this chapter.

C. Government Policy for the Technical Colleges: from Dispersal to Concentration, 1956

(a) 'Technical Education', the 1956 White Paper ⁽¹⁾

In 1956 the government decided that it was going to invest a considerable amount of money and resources in the development of the technical colleges. This decision was made public in February of that year in the White Paper on 'Technical Education'.

The reasons behind this decision were multiple. On the one hand there were people in the Treasury who felt that the 'education as investment' argument applied to the technical colleges rather more than to other fields of education. ⁽²⁾ There were also a number of people in government circles who had for long been impressed by M.I.T. and who wished to see a counterpart established here. ⁽³⁾

(1) Technical Education (Cmd 9703) Ministry of Education, 29 Feb. 1956.

(2) A point made by Lord Boyle when interviewed on 29 Apr. 1980.

(3) A point made by Sir Antony Part when interviewed on 10 Apr. 1980.

On the other hand, considerable pressure was brought to bear upon the government by such bodies as the Advisory Council on Scientific Policy, the Parliamentary and Scientific Committee and other major professional bodies. Indeed these bodies had been busy pressing the claims of the technical colleges for greater resources ever since the close of World War II. However, they brought renewed pressure to bear at this time.⁽¹⁾

In addition these factors coincided with a definite up-turn in the economy. Up until the mid-1950s the Ministry of Education had had to concentrate the available resources carefully, and had decided to work mainly upon increasing the number of school places. By 1956 such severe rationing was beginning to be relaxed and the government was thus able to plan to ameliorate the much-proclaimed shortage of technologically-trained manpower. As indicated in the preceding chapter, the government's decision to invest heavily in the technical colleges coincided with the heightening of fears about industrial competition from the U.S.S.R. and the U.S.A. in particular. This was associated with these countries' greater output of qualified scientific and technical manpower. Indeed, it is interesting to note that the introduction to the White Paper began with a quotation from a speech made by the Prime Minister the previous month. He had said,

"The prizes will not go to the countries with the largest population. Those with the best systems of education will win. Science and technical skill give a dozen men the power to do as much as thousands did fifty years ago. Our scientists are doing brilliant work. But if we are to make full use of what we are learning, we shall need more scientists, engineers and technicians. I am determined that this shortage shall be made good."⁽²⁾

(1) The Journal of Education, Vol 88, June 1956, p. 249.

(2) Technical Education (Cmd 9703) Ministry of Education, (H.M.S.O. 1956) para 1.

Turning now to the details of the White Paper, it began by suggesting that Britain was in danger of falling behind her foreign competitors in terms of the country's output of qualified scientific and technical manpower,⁽¹⁾ and Appendix A provided some statistics to support this view.

However, the White Paper was careful not to over-emphasise the effect that those foreign examples had had on government thinking: the very next paragraph of the White Paper argued:

"We do not need the spur of foreign examples. Our own circumstances show clearly the policies which we must pursue. The aims are to strengthen the foundations of our economy, to improve the standard of living of our people, and to discharge effectively our manifold responsibilities overseas."⁽²⁾

From there the White Paper went on to describe the diverse functions of the technical colleges ranging from the one-year part-time junior course designed to improve the general education of a fifteen-year-old,⁽³⁾ to courses for technologists on a par with those provided by the universities.⁽⁴⁾

The next step was to outline the expansion plan that the government conceived for the technical colleges. Its objectives were two-fold: to increase by about 50 per cent the output of advanced-level students from the technical colleges; and to double the number of day-release students.⁽⁵⁾ In the context of this thesis it is only the former which is of importance, and indeed it seems fair to suggest that this objective was of primary importance to the government too. It was with this that a large part of the White Paper was concerned.

(1) ibid, para 3.

(2) ibid, para 4.

(3) ibid, para 30.

(4) ibid, para 47.

(5) ibid, para 55.

Firstly it was recommended that the advanced-level courses should adopt, for the most part, the sandwich principle, that is, where students spend alternate periods in the technical colleges and in industry respectively. ⁽¹⁾

Secondly the White Paper suggested that these advanced courses should be carried on in colleges which already concentrated on advanced-level work. ⁽²⁾ This point was made under the sub-heading 'Colleges of Advanced Technology', - the first time that that phrase was used. However, the White Paper did not indicate which and how many Colleges of Advanced Technology there were to be. Instead it simply listed the 24 regional colleges (i.e. those colleges already in receipt of a 75 per cent grant for certain advanced courses), and explained that,

"The Government now wish to see the proportion of advanced work at these colleges vigorously increased, so that as many of them as possible may develop speedily into colleges of advanced technology."⁽³⁾

In short, contrary to popular belief, the designation of the C.A.T.s did not date from the publication of the 1956 White Paper although the latter clearly anticipated the event. Therefore whilst the White Paper may be characterised as a blue-print for expansion it was also very much a 'tract for the times', ⁽⁴⁾ and left much of the details of the expansion to later government announcements.

Moreover, the White Paper reassured the local authorities concerning their role in the development of the technical colleges. It argued,

(1) ibid, para 57.

(2) ibid, para 65.

(3) ibid, para 69.

(4) As described by Sir Antony Part when interviewed on 10 Apr. 1980.

"Local authorities take great pride in such colleges and often have been willing to find more money for them than the pressure on national resources has allowed them to spend. To remove these colleges from local control against the wishes of the authorities could be justified neither by past experience nor by the shape of better results from a more central control."
(1)

Finally, the White Paper introduced a 5 year building programme for the technical colleges in line with the proposed expansion in student numbers. This amounted to a building allocation of £70 million plus a further £15 million for equipment. Thus the building programme for the technical colleges in 1956-57 was planned to reach about £9 million, compared with £7 million in 1955-6, and only £5 million in 1954-5.⁽²⁾

In announcing the publication of the White Paper Eccles stated that this programme was to be exempt from cuts, delays or postponements of any kind,⁽³⁾ a reflection of the importance that the government was attaching to this policy since simultaneously it was trying to limit expenditure in other fields.⁽⁴⁾ However, despite the new heights that this programme was designed to attain, the White Paper acknowledged that it was still less than the local authorities had asked for.⁽⁵⁾

(b) Response to the 1956 White Paper

The general tenor of the response to the White Paper was exceedingly favourable, especially from the press. The Times Educational Supplement for example, commented,

"The Government have been slow to act, but in the end they have acted forcefully,"⁽⁶⁾

(1) Technical Education, (Cmd 9703), para 71.

(2) ibid, para 93.

(3) House of Commons, Vol 549, 29 Feb. 1956, col 1189-91.

(4) T.E.S., 2 Mar. 1956, p.271.

(5) Technical Education, (Cmd 9703), para 93.

(6) T.E.S. 2 Mar. 1956, p.271.

and concluded,

"After the sound and fury of technological debate in recent years, the White Paper's clear-cut plan comes as a relief. There is an exciting urgency about its proposals."(1)

The Economist(2) and The Times(3) also welcomed the White Paper, and the latter later acknowledged that,

"The objectives are moderately ambitious and at the same time attainable."(4)

The White Paper also received a warm welcome in the technical colleges. For example the Association of Technical Institutions regarded it as an endorsement of the policy it itself had long advocated.(5) It also won the approval of the Federation of British Industries,(6) the Association of Education Committees,(7) the N.A.C.E.I.C.,(8) and the Association of Teachers in Technical Institutions although the latter also criticised certain details and not least the fact that the colleges of advanced technology were to be concentrated in certain areas at the expense of others.(9)

The response of the F.B.I. and of Dr. Alexander of the A.E.C. respectively were particularly interesting in so far as both of them argued in effect that there was little that was new in the White Paper. Thus Alexander wrote,

"The publication of the White Paper on Technical Education last week is undoubtedly an event of major importance. Both the Minister of Education and the Prime Minister have made clear that the Government intends to put its full weight behind these developments. It is to be noted, however, that the White Paper contains no new proposals. It is concerned with the development of different types of work which have for many years been successfully carried out in the technical colleges by L.E.A.s."(10)

(1) ibid.

(2) The Economist, Vol 178, 3 Mar. 1956, p.540.

(3) The Times, 1 Mar. 1956.

(4) The Times, 21 June 1956.

(5) T.E.S. 9 Mar. 1956, p.306.

(6) T.E.S. 8 June 1956, p.727.

(7) A.E.C. Files, A119(a), Technological Education (General), 1956-61
Memorandum on Technical Education, A.E.C., May 1956.

(8) A.E.C. Files, B.154, Technological Education (N.A.C.E.I.C.) 1956-58,
Note of a discussion between the Minister and the members of the Standing Committee of the N.A.C.E.I.C. 26 Mar. 1956 (Paper No. NAC/SC/56/130).

(9) Education, Vol 107, 23 Mar. 1956, p.431.

(10) ibid., pp.375-6.

In short, Alexander was echoing the view of Part when the latter described the White Paper as 'a tract for the times'.

Notwithstanding the attitudes of these various associations possibly the coolest reaction to the White Paper came from the technical college principals. Taking a similar stance to Alexander, but adopting a less conciliatory tone, many of the principals regarded the White Paper merely as de facto recognition of what was already being practiced. ⁽¹⁾

Such criticism of the White Paper as there was related primarily to the issues of teacher supply and the colleges of advanced technology, and to a considerable extent the Minister of Education accepted these as just, as reflected in discussions he held with the N.A.C.E.I.C. on these matters. ⁽²⁾ With regards to the first of these issues Eccles had no immediate solution, pointing out that the problem related to salaries, which was the responsibility of the Burnham Committee. ⁽³⁾

As for the colleges of advanced technology, the Minister of Education refused to accept that there would be any advantage in removing these from local authority control. However, he clearly accepted that the White Paper had given rise to a certain amount of misunderstanding about them and their development for in June 1956 a circular ⁽⁴⁾ was published which aimed essentially at clarifying the role of the C.A.T.s.

Finally the White Paper was well received by the universities largely because it was felt that the development of a greater proportion of advanced work in some of the technical colleges might

(1) T.E.S. 9 Mar. 1956, p.306.

(2) A.E.C. Files, B.154, Technological Education (N.A.C.E.I.C.) 1956-58, 26 Mar. 1956.

(3) ibid.

(4) The Organisation of Technical Colleges (Circular 305), Ministry of Education, 21 June 1956.

reduce the pressure for further expansion being placed on themselves. Thus the Times Educational Supplement quoted one professor of electrical engineering as saying,

"It is a cause of satisfaction that the sheer weight of numbers is to be taken elsewhere, enabling the universities to deal with the elite of the engineering profession."(1)

(c) Circular 305, The Organisation of Technical Colleges

The aims behind Circular 305 were essentially two-fold. In the first place it was designed to help clear-up some of the confusion about the Colleges of Advanced Technology which arose in the White Paper; and secondly it was intended to rationalise the technical college system. Indeed, up until 1956 it was something of a misnomer to refer to the technical colleges as constituting a system. Rather, like Topsy, they had just 'grewed',⁽²⁾ partly in response to local demands and local needs, and partly at the whim of the college principals.

The attempted rationalisation of the technical college system took the form of categorising the colleges into four separate groups: the C.A.T.s, the regional, area and the local colleges. The structure imposed upon the technical colleges under this system was a hierarchical one, with a small number of C.A.T.s at the apex, and a large number of local colleges at the base. Moreover, if practice actually correlated with the theory behind it, the position of a college within the system would have indicated the sort of work carried on in it for each level was to make a different and distinct contribution to the teaching of technical education. Thus the C.A.T.s as their name implied, were expected to concentrate exclusively on advanced-level

(1) T.E.S., 9 Mar. 1956, p.306.

(2) As described by Sir Antony Part when interviewed on 10 Apr. 1980.

work; the regional colleges on some advanced-level work, the area colleges mainly on less advanced work, and the local colleges on courses up to the standard of the Ordinary National Certificate. However the reality of the situation post-1956 failed to live up to this tidy piece of administrative theorising, and there was often very little to differentiate the regional colleges from the C.A.T.s.

(1)

With regards to the C.A.T.s, the circular was much more explicit than the White Paper had been, indicating quite clearly that only a few regional colleges would be upgraded to that level. (2)

The criteria of C.A.T. status was, first and foremost that a high proportion of advanced-level work should be offered by each institution; and in addition that certain conditions in respect of administration, finance, staffing and accommodation as laid down in Appendix 1, (3) should be met.

In addition, the selection of a few C.A.T.s would be determined in part by their geographical distribution. (4)

When the Minister of Education replied to an Opposition motion on technical education on the day Circular 305 was published, he indicated that in the first instance eight colleges were to be designated as C.A.T.s, with the possibility of a further two at a later date. (5) The eight were to be the Birmingham College of Technology, the Bradford Technical College, the Cardiff College of Technology and Commerce, the Loughborough College of Technology, the Royal Technical College, Salford, and in London the Battersea, the Chelsea and the Northampton Polytechnics. Thus in the first instance there were not

(1) As made clear in the Report on Higher Education by the Robbins Committee (Cmd 2154), (HMSO 1963), para 416.

(2) The Organisation of Technical Colleges, para 15.

(3) ibid, para 16.

(4) ibid, para 17.

(5) P.E.S. 29 June 1956, p.388.

to be any C.A.T.s in either the south-west or the north-east. The Bristol College of Science and Technology was tipped as the future C.A.T. for the south-west, but in the north-east none of the colleges were even categorised as regional colleges so it was likely to be some time before a college of C.A.T. status emerged there.

Of the eight chosen C.A.T.s a quick survey will indicate that over and above geographical distribution the factor which counted for most in their selection was the extent to which the colleges had a tradition of offering advanced-level courses. In particular the London County Council was successful in making this point with regards to the three London colleges named above.⁽¹⁾ By implication, the exclusion of Regent Street Polytechnic is self-explanatory. It was certainly thought of as a potential candidate for C.A.T. status but it declined this because it was not prepared to drop its lower-level work and concentrate exclusively on advanced-level courses.⁽²⁾

Circular 305 was drawn up by the Ministry of Education in close consultation with the N.A.C.E.I.C. and the local authority associations.⁽³⁾ From some of the comments made by the N.A.C.E.I.C. it is clear that it was feared that the superimposition of this hierarchical structure on the technical colleges,

"Would impose on technical colleges an organization which would be rigid, and which, in particular, would restrict the work of local and area colleges, and prevent them from qualifying for the next higher category."⁽⁴⁾

In fact, though, the reverse occurred: the hierarchical structure superimposed on the colleges seemed to act as an added

(1) A point made by Mr. E. E. Robinson, interviewed on 19 Feb. 1980.

(2) A point made by Sir Antony Part, interviewed on 10 Apr. 1980.

(3) A.E.C. Files, E.154, Technological Education (N.A.C.E.I.C.) 1956-58, 19th Meeting of the Standing Committee of the N.A.C.E.I.C. Discussion of Technical Education, 8 May 1956.

(4) Ibid, Circular 305: discussed at the 11th Meeting of the N.A.C.E.I.C. 25 July 1956.

stimulus to them to try and raise themselves to the next rung on the ladder, as it were. And given the nature of this structure it meant that the colleges thus tended to place a premium on developing advanced-level courses at the expense of lower-level work. It would be easy to criticise this development for going against the former practice of the technical colleges whereby each institution was responsive to local demands. However, simultaneously it must be stressed that the Ministry of Education was well aware of the inherent problems associated with the creation of a hierarchical system, but that it went ahead with the scheme in spite of them. The Ministry of Education adopted this policy because alongside the proposed expansion of advanced-level work in the colleges it also saw the need to improve the quality of the courses too, and this, it was thought, could only be done through a system of concentration as laid down in the circular. The Ministry of Education simply believed that the advantages of the system would outweigh its disadvantages.⁽¹⁾

(d) From Dispersal to Concentration: the Thinking Behind Circular 305

Circular 305 was in some senses a more important document in the history of the technical colleges than the White Paper for it did not simply clarify some of the ideas laid down in the latter but went beyond it to outline a new policy initiative on the part of the Ministry of Education. If the White Paper was a 'tract for the times', by contrast Circular 305 heralded a totally new and radically different line of development for the technical colleges, away from the former ad hoc blossoming of courses in response to local demand towards a policy of concentration.

(1) Sir Antony Part argued this point in an interview on 10 Apr. 1980.

Indeed, this change in policy was all the more significant for up until the summer of 1956 the Ministry of Education had always shied away from the idea of up-grading a few technical colleges. That this was so has been indicated in the preceding chapters of this thesis. Dating back to the Percy Report of 1945, numerous committees recommended to the government that just a few colleges should be selected to provide courses of an advanced level, but time and again the government refused to implement such a measure. There were between 22 and 24 regional colleges and the Ministry of Education was not prepared to select just a few for advanced-level work.

This attitude, though changed, and changed fairly rapidly within the first few months of 1956. By June of that year the Ministry of Education announced the selection of eight C.A.T.s. How can this change in policy be explained? As has already been indicated, the various professional institutions and other bodies concerned with higher technological education had for long been pressing the Ministry to adopt a policy of concentration. However, up until 1956 they had failed to win the Ministry over, the end result being a great deal of ill-feeling between the Institutions and the Ministry.⁽¹⁾ Then in January 1956 Sir Antony Part was transferred from 'Schools' Branch to the 'Technical' Branch⁽²⁾ of the Ministry, as successor to F. Bray; and within months he had come to accept that the arguments being put forward by the Institutions made good sense, and he persuaded his

(1) Part admitted this when interviewed on 10 Apr. 1980.

(2) Interestingly Part initially regarded his transfer to 'T' branch as a demotion - until he learnt of government plans for investment in this field. This highlights two points: (a) Part had clearly not anticipated the turn that government policy was to take, and (b) his attitude towards transferring to 'T' branch reflected the general attitude towards technical education prevalent at that time.

colleagues of this too. In short then, this change in policy can largely be attributed to the thinking of one man.

The reasons why Part was influenced by the arguments of the professional institutions were reflected in the two-fold aims of Circular 305. On the one hand Part argued that the quality of courses, and especially of those of an advanced nature, in the technical colleges would be improved if they were concentrated in just a few institutions. By 1956 talent in the sphere of advanced technology was far too widely scattered throughout the technical colleges, and it thus lacked the impact that the government wanted it to have.⁽¹⁾

On the other hand Part was very conscious of the lack of structure in the technical colleges. In so far as this was the result of organic growth he applauded it, but equally he saw it as extremely wasteful of resources, and it meant that advanced level work was often carried out in small, isolated pockets within the colleges.⁽²⁾ He therefore persuaded the Ministry of Education to adopt a policy of concentration within the technical colleges which meant that just a few colleges would thereafter concentrate on full-time advanced-level courses.

It was clearly with these points in mind that Part presided over the drawing up of Circular 305 and the establishment of the C.A.T.s. However, in a sense this still begs one very important question: what long term plan did the Ministry of Education have for the C.A.T.s? How were they expected to develop? According to Part the C.A.T.s were ultimately expected to stand alongside the universities in respect of quality, even though they could not grant their

(1) As argued by Part when interviewed on 10 Apr. 1980.

(2) ibid.

own degrees⁽¹⁾ i.e. lacked the status of universities. In short, the Ministry of Education regarded the C.A.T.s as becoming 'different but equal' to the universities. Indeed, in 1956 it was not practical to confront the universities headlong on the degree issue.⁽²⁾ Thus it would perhaps be most apposite to adopt Part's own description of the C.A.T. policy: a policy of colonialism.⁽³⁾ Whether or not it would succeed was difficult to gauge in 1956. However, it should be noted that it was regarded with a great deal of scepticism at that time, especially by many in the universities who doubted whether the C.A.T.s had the potential to 'pull themselves up by their own boot-laces.'⁽⁴⁾

(e) Some Concluding Remarks on the way Government Policy for Higher Technological Education had developed by 1956

Attempting to take an overall view of the way government policy for higher technological education had developed by 1956 the one feature which really stands out is the way that by then all the contenders in this debate seem to have got something of what they wanted. Thus plans had been set in motion to strengthen Imperial College, London, so that it might emerge as a counterpart to M.I.T.; whilst simultaneously the technological departments of a high proportion of all the other universities had also been permitted to expand considerably. Equally, following upon the publication of the White Paper and Circular 305 the technical colleges had at last got the go-ahead for expansion; and it was to be carried out largely in accordance with the recommendations of the professional institutions and other pressure groups which favoured the concentration of resources, especially at the advanced level. Finally, although not least within

(1) ibid.
 (2) ibid.
 (3) ibid.
 (4) ibid.

the context of this debate, both the Ministry of Education and the local authorities emerged with full political honour for the roles they had played in the formulation of this policy for the technical colleges whilst the government as a whole reaped praise for the positive part it had performed in expanding opportunities in higher technological education generally.

Secondly it should not be forgotten that possibly for the first time in the history of higher technological education an effort had been made to achieve a genuinely dual policy, embracing both the universities and the technical colleges. However, as will soon become apparent, the seeds of self-destruction - or at least transformation - were present within the C.A.T.s from the beginning, and this was to cause a substantial and fairly rapid change in this dual policy.

D. Development of the Technical Colleges, 1956-61

(a) The Development of the Technical Colleges in the wake of the 1956 White Paper and Circular 305

Dealing firstly with the C.A.Ts it was Circular 305 which laid down a number of conditions which these colleges were expected to meet. The primary condition was that the colleges should provide a broad range and substantial volume of work exclusively at advanced-level - either full-time, sandwich or part-time. Secondly, their governing bodies were to comprise representatives of industry, the local authorities, the universities and professional technological bodies; and advisory bodies were to be established, again representative of industry and professional institutions. The governing bodies were expected to have financial autonomy. The staff in the colleges were to be of a high calibre; there should be staff/student ratios

similar to those of the universities; staff were expected to have the time and the facilities to carry out their own research, and the students were to have time for private study and group discussion. Finally, the accommodation was to include adequate library facilities, staff-rooms, space for private study and for student union activities as well as residential halls or hostels. (1)

In 1956 the eight chosen colleges were far from meeting these conditions. It was true that they provided more advanced level work than the other technical colleges, but the difference was really one of degree. In 1956 in no college except Loughborough did advanced-level work count for more than 40 per cent of the total. In other respects such as the nature of the governing body, the quality of the staff and the standard of the accommodation, the C.A.Ts were really in a very similar position to the rest of the technical colleges. Clearly to meet the conditions laid down in Circular 305 considerable changes would have to be made, and this was in fact what happened. To gain some idea of the extent of these changes one has only to glance at the list of circulars relating to conditions in the technical colleges published during the period 1957-59. They will be looked at below.

Perhaps the best developed colleges in the early days were the three London colleges and Loughborough: already by 1957-58 they were concentrating entirely on advanced-level work. (2) This though was hardly surprising. The London Colleges had in the past been able to

(1) The Organization of Technical Colleges, (Circular 305) Appendix.

(2) House of Commons, Vol 574, 1 Aug. 1957, Col 255-6.

prepare their students for the London University internal degree, and thus had a long history of advanced-level work, as well as some experience in the research field.⁽¹⁾ Indeed the evidence suggests that the L.C.C. showed a very sympathetic attitude towards research in its technical colleges.⁽²⁾ As for Loughborough, the unusual extent to which it provided courses of an advanced nature was recognised by the Ministry of Education in 1952 when the college received a direct grant from the Ministry.

At the other colleges the shedding of lower-level work took longer, largely because other technical colleges had to be expanded or built up from scratch to cope with their increased intake of lower-level students. By the summer of 1957 large-scale building developments were in progress at both Salford and Birmingham, and plans were in preparation at Bradford and Cardiff.⁽³⁾ In fact at Birmingham two new separate colleges had to be built between 1957 and 1958.⁽⁴⁾ It was not until September 1958 that the C.A.Ts at Birmingham, Bradford, Cardiff and Salford were expected to be offering advanced-level courses only.⁽⁵⁾

The C.A.Ts concentrated upon London University degrees or Diplomas in Technology. Indeed, the Dip.Tech. became the C.A.T.s distinctive award. That was the positive result of the White Paper and Circular 305. However, it also had a negative side: the C.A.T.s concentrated on the development of advanced courses in science and technology alone, at the expense of other disciplines such as the

(1) T. Burgess and J. Pratt, Policy and Practice: The Colleges of Advanced Technology (Allen Lane, The Penguin Press 1970) p.36.

(2) Technology, Vol. 1, No. 3, Oct. 1957, 'The C.A.T.s and Industry - 2' p.278.

(3) House of Commons, Vol. 574, 1 Aug. 1957, Col 255-6.

(4) P. Venables, Higher Education Developments: The Technological Universities 1956-76 (Faber & Faber 1973) p.19.

(5) Technology, Vol. 1, No. 7, Sep. 1957 'The C.A.T.s and Industry - 1' p.246.

social sciences and business studies. Indeed it has been suggested that the 1956 policy for the technical colleges depressed the development of courses in business studies.⁽¹⁾ That the C.A.Ts should concentrate on such a narrow span of disciplines need not have proved particularly important but with the advantage of hindsight one can see that the C.A.Ts thus found themselves outside the large growth areas of the 1960s, and in particular, behind in the field of social science.

In addition, although the White Paper and Circular 305 did not prohibit the colleges from continuing to provide part-time courses, this was seemingly felt to be incongruent with the development of advanced-level work only, and in practice the C.A.Ts came to concentrate not simply on advanced work but on full-time advanced work (albeit often based on the sandwich principle).

What did the 1956 policy mean to the technical colleges other than the C.A.Ts? First and foremost the colleges benefited from the large sums of money which were made available for the technical college building programme, both for improving old colleges and building new ones.

Secondly, although the colleges did not have much success in increasing the number of day release students, the technical colleges underwent a terrific rate of expansion after 1956. Between then and 1964-5 they had expanded to accommodate another million students, taking them to a total of three million.⁽²⁾ This increase seems to have been due to three main factors. In the first place the late 1950s experienced a very rapid growth in the demand for both higher

(1) Point made by Mr. E. E. Robinson in interview on 19 Feb. 1980.

(2) Burgess and Pratt (1970) op. cit. pp.54-5.

and further education, and in line with traditional practice the technical colleges did their best to meet it. Also these colleges took over most of the lower-level work which had previously been provided for by the C.A.Ts. Finally, whilst the C.A.Ts made the Dip.Tech. their distinctive award, the other technical colleges, and especially the regional colleges, concentrated on developing other advanced courses, both full-time and part-time, and in particular the Higher National Diploma. The Ministry of Education's statistics give some idea of just how popular the H.N.D. became.⁽¹⁾

A more detailed analysis of the changes in the technical colleges following upon the publication of the White Paper and Circular 305 can be found in a number of books written by T. Burgess and J. Pratt,⁽²⁾ as well as in the work of P. Venables.⁽³⁾ Here only a brief survey has been possible, indicating the general lines upon which the colleges developed. Returning to an important theme throughout the development of the technical colleges, a theme of particular importance within the sphere of higher technological education, attention will now be focused again on the awards issue.

(b) The National Council for Technological Awards, 1955-64

The issue of an award to be granted either by the technical colleges themselves or by a central body was one on which little headway had been made in the immediate post-war years. This was not for lack of trying, however, but because it was a distinctly controversial issue on which agreement was difficult to obtain. Indeed it was the one matter that the Percy Committee had been divided

(1) Statistics taken from the Annual Reports of the Ministry of Education:

<u>Year</u>	<u>No. of students on HNDs</u>	<u>Year</u>	<u>No. of students on HNDs</u>
1955-6	1,373	1958-9	3,417
1956-7	2,142	1959-60	3,733
1957-8	3,240		

(2) Especially Burgess and Pratt (1970) op. cit.

(3) Especially Venables (1978) op. cit.

over in 1945, and thereafter a variety of bodies had looked into it and had come up with a number of alternatives.

In 1953 the N.A.C.E.I.C. was asked to consider the issue for a second time,⁽¹⁾ and in 1954 it put its recommendations to the Ministry of Education as outlined in the preceding chapter.⁽²⁾ Finally, in July 1955 the Minister of Education announced the establishment of the National Council for Technological Awards, closely in line with the N.A.C.E.I.C.'s recommendations.⁽³⁾

The N.C.T.A. was set up as,

"An independent and self-governing body to create and administer technological awards of high standing having a national currency and available to students in technical colleges who successfully complete courses approved by the Council."⁽⁴⁾

Thus the N.C.T.A. was to be an autonomous body outside the direct control of the Ministry of Education although it owed its foundation in large part to the enthusiasm of the latter for such a body, and whilst some of its members were to be chosen by the latter.⁽⁵⁾

The membership of the N.C.T.A. seems to have proved most important if not to say fortuitous. It was chaired in the first instance by Lord Hives, Chairman of Rolls Royce Ltd. and numbered several more eminent industrialists amongst its members,⁽⁶⁾ thus reflecting the interest and support of industry. It was also well served by its members drawn from the academic world. In this respect Dr. Cook, the Vice-Chancellor of Exeter University, in particular, received warm praise for the part he played in persuading the Committee of Vice-Chancellors and Principals to accept the Diploma in Technology.⁽⁷⁾

(1) A.E.C. Files, B.136, Technological Education (N.A.C.E.I.C.)
1949-55, Memorandum from the Minister of Education on Advanced Technological Courses in Technical Colleges, 30 Mar. 1953.

(2) See Chapter 3, p. 111.

(3) House of Commons, Vol 544, 21 July 1955, Col 579-695.

(4) Declaration of Trust, N.C.T.A. 22 Nov. 1956, (1956).

(5) House of Commons, Vol. 546, 1 Dec. 1955, col 242.

(6) See Appendix B.

(7) A point made by Sir Lionel Russell, interviewed on 9 May 1980.
(He too was a member of the N.C.T.A.).

The role of the N.C.T.A. was a rather complex one. Its primary function was to assess the courses which the colleges put forward as being of a standard to merit receipt of the Council's award. To carry out this task it laid down fairly stringent procedures which included both a written submission by a College to a relevant Subject Panel of the Council, and a visit to the College concerned. (1)

The award which the Council came to confer was called the 'Diploma in Technology' - or the Dip.Tech. as it came to be known. It was considered to be equivalent in standard to an honours degree of a British University, and was awarded at 1st class, 2nd class and pass levels. Nevertheless the Dip.Tech. courses were to be distinct from those offered by the universities in so far as they conformed predominantly to the sandwich pattern and were thus much more closely linked with industry.

However, the N.C.T.A. proved to be something more than an external validating body, taking a very positive role in directing the actual development of the Dip.Tech. courses. In particular it encouraged the development of courses on the sandwich principle; it was responsible for introducing liberal studies into the curricula of engineering courses, and for instigating the widespread practice of project work amongst students in their final year. (2)

The N.C.T.A. brought out regular reports on the development of the Dip.Tech. courses, as well as memoranda on particular issues and problems. One problem in which it took especial interest was that of trying to integrate periods of industrial training with periods spent in college. In its first report the N.C.T.A. made the following comments on this issue:

(1) Report for the Period Dec. 1955 to July 1957, N.C.T.A. (1957).
 (2) T. Burgess and J. Pratt, Technical Education in the United Kingdom (O.E.C.D. 1971) p. 35.

"The Council regard a course leading to the Diploma in Technology as a complete entity, the industrial training being just as much a part of the course as the academic study. Each firm will, of course, have its own training arrangements, and the Council imagine that few Principals will be in the happy position where students' industrial training provides a precise complement to their academic studies. On the other hand, college staff are expected to know what a student is doing during his industrial training just as the Works staff must know the content of the college course, and the Council hope that each side will move gradually towards dove-tailing the two together."(1)

and suggested that the project on which a student worked during his period in college should arise out of his work experience.

Then in May 1960 the Council published a memorandum devoted entirely to the Industrial Training of students on Dip. Tech. courses.

(2) This memorandum looked in detail at the responsibility of both industry and the colleges in this field. Also by way of an Appendix the N.C.T.A. referred to ways in which colleges and industry were already collaborating on this matter, ways which it regarded as beneficial. These included the setting up of committees with large numbers of industrial representatives to collaborate with the colleges; and visits to students by college staff whilst the former were doing a spell of industrial training. The N.C.T.A. believed it essential that industry and the colleges should act in close collaboration with one another if the Dip.Tech. courses were to succeed.

In addition the N.C.T.A. also acted as something of an interest group operating on behalf of the colleges, persuading local authorities to provide better accommodation and equipment in return for the accrediting of Dip.Tech. courses. This is not to imply that the N.C.T.A. operated improperly in any way, but it clearly enjoyed a position of strength when it came to persuading local authorities to

(1) Report for the Period Dec. 1955 to July 1957, N.C.T.A. (1957).

(2) Memorandum on the Industrial Training of Students following Courses recognised as leading to the Dip.Tech., N.C.T.A. (May 1960).

raise standards in the technical colleges. This point was borne out in interviews conducted in the furtherance of my research time and time again. One interviewee described the N.C.T.A. as

"One of the most powerful influences for good that had happened to technical education."(1)

whilst another pointed out that,

"A circular didn't have the same effect as a visitation from the N.C.T.A."(2)

In short the N.C.T.A. shouldered the responsibility for the general lines upon which colleges providing Dip.Tech. courses were expected to develop. By way of example, even in its first report the N.C.T.A. commented upon the overcrowding of syllabuses; the inadequate provision for private study, the need for liberal studies, and the desirability of good staff and better buildings.(3) Without doubt within the sphere of higher technological education the role of the N.C.T.A. can be described as having been quite unique.

Despite the odds against the establishment of this new award and the sandwich courses leading to it, it did not take long for the Dip. Tech. to develop upon a fairly sound basis. In large part the praise for this must go to the N.C.T.A. itself which insisted right from the start that the courses must reach a very high standard. Indeed, acceptance of courses by the N.C.T.A. was by no means automatic. By 31 July 1957 after 83 applications had been considered by the Council, a total of only 49 were accepted and 34 rejected.(4) In addition two further factors help explain the success of the Dip. Tech. Firstly there was the generally favourable acceptance of Dip.Tech. students

(1) Sir James Tait described the NCTA in this way in interview on 2 June 1980.

(2) As argued by Sir Lionel Russell, 9 May 1980.

(3) Report for the Period Dec. 1955 to July 1957, N.C.T.A. (1957).

(4) ibid.

by industry.⁽¹⁾ There were exceptions to this⁽²⁾ but by and large the view expressed by the F.B.I. below seems to have been widely shared:

"We welcome the steady increase in students who have enrolled for the Dip.Tech. course ... As the course becomes increasingly well established it appears likely that manufacturing industry will demand more college based students from the C.A.T.s than there are available, and will recruit more men as works-based students."⁽³⁾

Secondly, the Dip.Tech. was fairly readily accepted by the academic world too. As the N.C.T.A. itself recorded the Burnham Technical Committee had recognised the Dip.Tech. student as eligible for the graduate addition to his salary from the beginning, and it was also regarded as a qualification for entry to the Scientific Civil Service, as was a university degree.⁽⁴⁾ Then in 1959, in some senses the highest accolade of all, the Committee of Vice-Chancellors and Principals recommended that the universities should regard the Dip.Tech. holder and university graduates as equivalent when they applied for higher degree courses.⁽⁵⁾ Clearly the Dip.Tech. might be said to have arrived with full academic and public acceptance.

Upon the success of the N.C.T.A. in setting up the Dip.Tech., which is reflected in the figures given below,⁽⁶⁾ fell two shadows.

- (1) Burgess and Pratt (1971) op.cit. p.42.
 (2) In particular see A.E.C. Files, A119(c) Technological Education (N.A.C.E.I.C.) 1960-63 for Report of the Muffield Investigation into Higher Technological Education, prepared for a committee of the Governors of the College of Advanced Technology, Birmingham, sent to the N.A.C.E.I.C., 14 May 1962.
 (3) Higher Education, Part 1, Vol B (Cmd 2154, VII), Memorandum submitted by the F.B.I., 13 Oct. 1961.
 (4) Report for the Period April 1960 to March 1961, N.C.T.A. (1961) para 4.2.
 (5) C.V.C.P. Minutes, Minute 229, 25 Apr. 1958.
 (6) Figures taken from the Annual Reports of the Ministry of Education.

Year	Total No. of Dip.Tech. Students
1955-6	-
1956-7	510
1957-8	1,391
1958-9	2,422
1959-60	3,412
1960-61	4,969
1961-62	4,756

Firstly, the N.C.T.A. was not successful in persuading industry that it should support the Dip.Tech. students financially. Rather, in its second report the N.C.T.A. recorded the following joint announcement made by the Ministry of Education and the F.B.I. in April 1958:

"The F.B.I., in a policy statement issued today (Tuesday, 29th April 1958), to all members, states its belief that industry, by enabling selected employees to pursue advanced sandwich courses, in addition to supporting day release schemes, acts in its own as well as in the nation's interest. The Federation recommends to its members that firms which already pay their students' fees and salaries should continue to do so, and expresses the hope that firms sending students on advanced sandwich courses in the future will follow this example, since it stimulates the student's sense of loyalty to the firm and strengthens the firm's ties with the college.

The Ministry and the Federation recognise, however, that there are and will continue to be firms who do not feel able to meet the whole cost of such training. There will, therefore, be a continuing number of such students who will look to L.E.As for aid. In a memorandum also issued today (Tues, 29th April, 1958), Mr. Geoffrey Lloyd, the Minister of Education, recommends L.E.As to give sympathetic consideration to such applications."(1)

Secondly, the N.C.T.A. experienced a distinct lack of success when it decided to create and administer a higher award. A 'College of Technologists' was established to administer the award which was to be entitled, Membership of the College of Technologists. This award, like the Dip.Tech. was also designed for recognition of a course successfully completed, carried out jointly in industry and college.⁽²⁾ However the M.C.T. failed to catch on, reflecting in part how little research was actually conducted in the colleges, and also the public role of the Ph.D. Few students proved willing to study for an M.C.T. in preference to the former, as shown in the figures below.⁽³⁾

- (1) Report for the Period Aug. 1957 to Mar. 1959, N.C.T.A. (1959).
 (2) An Award Higher than the Diploma in Technology, N.C.T.A. (1958).
 (3) Registration of Candidates for H.C.T. at 31st Mar each year

Year	Total No. of Registered Candidates	Total No. of Candidates awarded H.C.T.
1960	5	-
1961	27	-
1962	39	1
1963	76	4

(Source: Report for the period April 1962-March 1963, N.C.T.A. (1963)).

Excluding the above two factors though, the history of the N.C.T.A. and of the Dip.Tech. can but be described as successful, and the N.C.T.A. clearly did much to improve conditions and standards in colleges teaching Dip.Tech. courses.

(c) The Publication of Six Circulars Relating to Conditions in the Technical Colleges, 1957-59

The six circulars issued between 1957 and 1959 were intended to provide guide-lines for the development of all the technical colleges but it would seem that the Ministry of Education had the C.A.T.s primarily in mind.

The first one, Circular 320, ⁽¹⁾ was concerned with the provision of residential accommodation. This was seen as becoming increasingly important on two main counts: firstly it was considered important that the more advanced-level students should have some experience of a period of residence, as was the case for most university students; and secondly it was ever more necessary to try and provide accommodation for students who could only attend college by living away from home. This latter factor was particularly pertinent to the C.A.T.s which were slowly attracting students from all over the country. The desirability of increased residential facilities had already been advocated in circular 305, ⁽²⁾ and the N.C.T.A. also stressed this point. ⁽³⁾ However, the actual erection of more residential accommodation was very slow to take place, not least because in the period immediately after 1956 most of the money was spent on buildings designed for academic purposes. Perhaps in this respect the

(1) Hostels at Technical Colleges, Circular 320, Ministry of Education, 1 Mar. 1957.

(2) The Organisation of Technical Colleges, Appendix.

(3) c.g. Report for the Period Dec. 1955-July 1957 and Report for the Period Aug. 1957-Marc. 1959. N.C.T.A.

London colleges fared better than others with the L.C.C. providing the first hall of residence for students at the Northampton C.A.T. in 1957.⁽¹⁾

Circular 322,⁽²⁾ which followed closely on the heels of circular 320, was designed to encourage the development of library facilities. Evidence relating to library facilities in the C.A.T.s has proved difficult to come by except in relation to the Northampton C.A.T.: the latter apparently had an arrangement with the local Finsbury library under which the library bought course books in sufficient numbers to meet the needs of the college students - much to the annoyance of the college's own librarian and to the detriment of the college library!⁽³⁾

There was also the problem of introducing a liberal element into the technical college courses. This was not a simple issue in institutions which had traditionally seen their role as essentially one of technical training. However the N.C.T.A. argued that the Dip.Tech. courses should include some formal liberal studies courses and also that efforts should be made to broaden the treatment of technological or scientific subjects so that students might appreciate the social and economic significance of their studies.⁽⁴⁾ Thus the Council was quick to welcome Circular 323,⁽⁵⁾ which stressed the importance of liberal studies in technical college courses and set out a number of ways of introducing them. In its second report the N.C.T.A. expressed reasonable satisfaction at the way liberal studies was developing in the Dip.Tech. courses. In particular the report noted

(1) A point made by Sir James Tait when interviewed on 2 June 1980.

(2) Libraries in Technical Colleges, (Circular 322), Ministry of Education, 12 Apr. 1957.

(3) As explained by Sir James Tait in interview on 2 June 1980.

(4) Report for the Period Dec. 1955-July 1957, N.C.T.A. (1957).

(5) Liberal Education in Technical Colleges, (Circular 323), Ministry of Education, 13 May 1957.

the appointment of additional staff so that the subject might occupy its rightful place in the curriculum.⁽¹⁾ Indeed, there is some evidence to suggest that even in 1957 the importance of liberal studies (or general studies as Venables preferred to call it)⁽²⁾ in courses of advanced technology had been generally accepted, as indicated during a discussion on the matter at the Second National Conference run for Industry and the Technical Colleges by the F.B.I.⁽³⁾

The technical colleges also experienced a shortage of teachers, and in 1956 the Ministry of Education set up a committee to look into this problem under the chairmanship of Dr. Willis Jackson. In May 1957 the report was published.⁽⁴⁾ It did not recommend anything very novel but reiterated the need for certain reforms which those in the technical colleges and those concerned with developing the Dip.Tech. courses, had long advocated. For example, the report contained a number of recommendations which it was hoped would make teaching in a technical college a more attractive proposition than hitherto, such as a reduction in the teaching load carried by teachers; the provision of adequate facilities to enable teachers to carry out their own research, the provision of better accommodation - staff rooms and common rooms; - and the means for closer links with industry through day-release schemes and the appointment of industrial representatives on the governing bodies of the colleges.

Despite a promise of immediate action on the issue by Lord Hailsham⁽⁵⁾ no action resulted until the beginning of 1958 when the

(1) Report for the Period Aug. 1957-Mar. 1959, N.C.T.A. (1959).

(2) Venables (1978) op. cit. p. 85.

(3) Report of the 2nd National Conference Between Industry and the Technical Colleges, F.B.I. (1957), Discussion following paper by F. Venables.

(4) The Supply and Training of Teachers for Technical Colleges, Ministry of Education, 1957.

(5) Education, Vol 110, 15 Nov. 1957.

Ministry of Education issued Circular 336.⁽¹⁾ The aim behind this circular was to bring to the attention of local education authorities those recommendations of the Willis Jackson Report which were their concern. These included the need to increase the size of the technical teaching force by 7,000 more full-time and 8,000 more part-time teachers by 1960-61; a consideration of possible new sources of recruitment, and the raising of standards in the colleges and making conditions within them more attractive to teachers.

The local education authorities did go some way to making conditions in the colleges more attractive. For example, by January 1959 all the C.A.Ts provided work rooms for staff in addition to heads of departments and they all had staff common rooms.⁽²⁾ However, beyond this the Willis Jackson Report was not implemented.

As indicated above there were enough disadvantages to working in a technical college as compared with a university without the additional one of salaries: the salaries paid to staff in the technical colleges were markedly lower than those paid to university teachers. This arose because the technical college teachers' salaries were negotiated by the Burnham Technical Committee following broadly the levels settled by the Main Committee, and the scales which were drawn up covered the whole range of technical college teachers offering courses from the lowest to the highest academic levels. This problem proved exceedingly obdurate and eventually provided one of the major factors behind the decision to take the C.A.Ts out of the control of the L.E.As. Thereafter the staff in these colleges were in a position to negotiate their salaries independently with the Ministry of Education.

(1) Recruitment of Teachers for Technical Colleges, (Circular 336) Ministry of Education, 12 Feb. 1958.

(2) House of Commons, Vol 598, 22 Jan. 1959, col. 389-90.

In April 1959 Circular 1/59⁽¹⁾ was issued. This dealt with the technical college building programme and the size of the student body. As far as the five year building programme outlined in 1956 went, Circular 1/59 indicated that it had largely been achieved: the five annual programmes, 1956-61, totalled £70 million and comprised 359 projects for the erection of new colleges and the extension of existing ones. As to the future, the Ministry of Education proposed that between 1961 and 1964 a further £45 million should be provided for building programmes, and a further £9 million for equipment. This decision was apparently based upon the renewed estimate of the desired output of scientists and technologists from the technical colleges by 1970 made by the Advisory Council on Scientific Policy: in 1959 the latter estimated that the output of scientists and technologists from the technical colleges by 1970 ought to be about 17,000 rather than 15,000 as proposed in the 1956 White Paper. (This figure as estimated by the A.C.S.P. was revised time and time again as the techniques of manpower planning became further refined. Further reference to these changing figures and the reports of the A.C.S.P. themselves, will be made in the following chapter).

In connection with the building programmes it is also interesting to note that by the early 1960s the government was providing very similar support for the building programmes of both the universities and the technical colleges. The university building programme for 1960-63 was £15 million per year, as was that for the technical colleges for the period 1961-64.

(1) Technical Education - The Next Step, (Circular 1/59), Ministry of Education, 13 Apr. 1959.

The last of the circulars on this topic to be issued during this period was Circular 7/59⁽¹⁾ which was concerned with the governing bodies of the colleges. The composition and function of the technical colleges' governing bodies had for long been something of a contentious issue: in a great number of cases they were simply sub-sub-committees of education committees which meant that they lacked independence, and often they had to wait a considerable time for decisions to be passed by the Further Education Sub-Committee, the Education Committee and the Council. Moreover even after the C.A.T.s had been designated, as Venables explained with feeling,

"The College was simply treated as one of the many under the L.E.A., and its proposals were subject always to the first consideration in mind: 'If we do it for you, we will have to do it for the others'."(2)

It was therefore hardly surprising that the status of the governing bodies caused those in the C.A.T.s a considerable amount of frustration.

1959 was not the first time that the status of governing bodies had been questioned. As early as 1946 the Ministry of Education had issued Circular 98⁽³⁾ which dealt with the same matter and recommended that,

"Subject to the ultimate control in matters of finance and general policy of the providing authority, the College should enjoy such freedom as will enable the Governing Body to develop its work in such directions as prove desirable."(4)

Little change accrued to governing bodies in response to this circular, and in 1957 the matter again came under consideration. In reviewing the development of the technical colleges just over a year after the publication of the 1956 White Paper Lord Hailsham, the Minister of Education, criticised the L.E.As for retaining direct

(1) Governing Bodies for Major Establishments of Further Education, (C.7/59) Ministry of Education, 10 Aug. 1959.

(2) Venables (1978) op. cit. p. 22.

(3) The Status of Technical, Commercial and Art Colleges, (Circular 98) Ministry of Education, 10 Apr. 1946.

(4) ibid., para 5.

control of the colleges. He argued that whilst such a relationship was maintained the colleges could not command the respect of local industry or other educational institutions, and that the L.E.As would remain suspect too for holding on to technical education as a private domain, and for allowing political considerations to enter into the sphere of educational administration. (1)

Then in 1959 the Ministry of Education issued Circular 7/59. This laid down recommendations concerning both the composition and the powers of governing bodies. Taking the composition of the governing body first it was suggested that the local authority representatives need not be in the majority and in fact in some cases they already only accounted for about one-quarter of the total. (2) Much more important, in the view of the Ministry of Education, was the representation of persons with current experience of industrial problems, including the direct representation of employers and unions. These should comprise no less than one-third of the total. (3) There should also be representatives from the universities and the professional institutions. (4) All in all the governing body should have no more than about twenty members - any more and it would become unwieldy. (5) In addition the chairman need not be chosen from among the local authorities' own representatives. (6)

As for the functions of these governing bodies, first and foremost they were to have financial autonomy, that is, freedom to spend within the limits of approved annual estimates; (7) secondly they were to have responsibility for the appointment of staff, (8) and finally,

(1) T.E.S., 17 May 1957, p.695.

(2) Governing Bodies for Major Establishments of Further Education, (Circular 7/59), Ministry of Education, 10 Aug. 1959, para 5.

(3) ibid, para 6.

(4) ibid, para 8.

(5) ibid, para 12.

(6) ibid, para 13.

(7) ibid, para 15.

(8) ibid, para 16.

to oversee the running of the college and the organisation of the curriculum.⁽¹⁾

This circular clearly received the support of both industry and the technical colleges judging by the points made on governing bodies in a joint handbook in May 1960.⁽²⁾ However it got less of a welcome from the L.E.As themselves. As a general policy it was not objected to but there was some dissension about the suggestion that the L.E.A. members need not be in a majority,⁽³⁾ and it was also pointed out that,

"In order that governors may claim their expenses attending meetings, it can only be done if the governing body constitutes a sub-committee of the Education Committee."⁽⁴⁾

This same point was raised also by S. Hirst,⁽⁵⁾ and indeed it may have constituted the most compelling reason for doing little to alter the status of technical college governing bodies in the post-war period!

These circulars have been dealt with in this detailed fashion to give some indication of the way the Ministry of Education obviously wanted the colleges to develop. As has been suggested already, how far the circulars were implemented remains somewhat unclear, and indeed the evidence suggests that what work was done in these fields owed more to the influence of the N.C.T.A. than to the publication of the circulars. After all, conformity to the demands of the N.C.T.A. brought with it acceptance of Dip.Tech. status for particular technical college courses whilst the Ministry of Education had no such carrot to entice the L.E.As with.

(1) ibid, para 17.

(2) The Technical Colleges and their Government, Joint F.B.I.-Technical Colleges Committee (May 1960).

(3) APC File, C.23, F. E. General, (1958-9), F. Barraclough to Alexander, 26 Sep. 1958.

(4) ibid .

(5) ibid, S. Hirst to Alexander, 4 Oct. 1958.

Nevertheless, the overall impression gained from these circulars and the recommendations contained within suggests that at least within the Ministry of Education there was quite a clear vision as to how these colleges were to be developed - as will become yet more apparent in succeeding sections of this chapter.

E. Direct-Grant Status for the C.A.Ts 1960-62

(a) Ambiguity in the Role of the C.A.Ts

In 1960 the Ministry of Education decided to review the development of the C.A.Ts and in so doing it became particularly concerned at the difficulty some of the colleges were having in attracting staff of the requisite high quality and, by the same token of attracting such staff away from the universities.⁽¹⁾ The conclusion that the Ministry of Education came to was that it was impractical to encourage top quality staff away from the universities and into the C.A.Ts whilst the latter remained under local authority control. This was not simply on account of the salary differentials between the C.A.Ts and the universities although this was an important determining factor but also because of the lack of autonomy enjoyed by the former. It was unlikely that potential teachers would regard the C.A.Ts as 'different but equal' to the universities when the C.A.Ts could not even grant their own awards! In short, the position of the C.A.Ts as institutions concentrating solely on higher education but under the control of local education authorities, proved to be a very ambiguous one; and the argument that they were 'different but equal' did not reap the advantages that were hoped for. It was with such thoughts in mind that the Ministry of Education decided

(1)As argued by Part when interviewed on 10 Apr. 1980.

that, despite the merits of individual L.E.As, the colleges should be removed from local authority control and placed directly under the Ministry of Education itself.⁽¹⁾

For other reasons the local authorities were also becoming somewhat disenchanted with their responsibility for the C.A.Ts. As the former Chief Education Officer for Birmingham pointed out, the local authorities were beginning to find the C.A.Ts expensive to run, despite the pool for courses of advanced further education.⁽²⁾ And indeed there was evidence to support this view: by 1961 the running costs of the eight C.A.Ts (excluding Loughborough) was about £2.5 million, of which the Exchequer met about 55 per cent through the general grant, leaving the other 45 per cent to be met through the rates.⁽³⁾ To be relieved of such a heavy bill would undoubtedly have appealed to the local authorities even though it would entail the loss of control over institutions which they had originally taken considerable pride in. Thus by 1960 it was accepted by both the local authorities and the Ministry of Education that the control of the C.A.Ts by the local authorities was out of step with the national role of the colleges.

(b) The Introduction of Direct Grant Status for the C.A.Ts

Early in 1961 the Minister of Education informally consulted the local authorities which had C.A.Ts under their control on their attitude towards its transfer to the Ministry. For the reasons outlined above there was little opposition. Indeed only the L.C.C. raised any objections⁽⁴⁾ - and in its case direct grant status was

(1) ibid.

(2) Point made in interview by Sir Lionel Russell on 9 May 1980.

(3) T.E.S., 30 June 1961, p.1361.

(4) Education, Vol 118, 1 Dec. 1961, pp.958-60.

of less significance anyway for the London C.A.Ts were aided rather than maintained.⁽¹⁾ The L.C.C. was unable to drum up support for its attitude from amongst the other authorities.

In the light of such a response Eccles then announced to the House of Commons that he had written formally to the local authorities, the local authority associations and the teachers to suggest that the C.A.Ts be given direct grant status.⁽²⁾ Interestingly the main argument which Eccles forwarded in support of this transfer of control related to the salary problem: that staff in the C.A.Ts received considerably smaller salaries than their counterparts in the universities has been referred to already. As direct grant institutions the salary of staff in the C.A.Ts was to be negotiated between the colleges and the Ministry of Education itself, and thus they could be brought into line with those in the universities. However, it was not pointed out that this could have been done whether or not the colleges became direct grant institutions, presumably in the interests of diplomacy and the maintenance of good central/local government relations.

Apart from that of the L.C.C. was there any opposition to these proposals? By and large it seems as if they were welcomed fairly readily within the local authority sector. Certainly the A.E.C. raised no objections to the idea. Indeed, the evidence suggests that Part had already sounded out the attitude of Alexander prior to the Minister's announcement on 22 June.⁽³⁾ Part had sent Alexander a draft of the Minister's speech for the A.E.C. Conference for his

(1) As pointed out by Sir James Tait when interviewed on 2 June 1980.

(2) House of Commons, Vol 642, 22 June 1961, col 162-3.

(3) AEC File A492, F. E. C.A.Ts, Part to Alexander, 15 June 1961.

personal comments on it, and Alexander made no criticism of it suggesting only minor amendments.⁽¹⁾ Moreover, on the same day that Eccles made his speech, Alexander was addressing the Annual Meeting of the A.E.C., during the course of which he advocated that the C.A.Ts be recognised as national institutions.⁽²⁾ By implication he would not oppose their being removed from local authority control.

Such opposition as there was within the local authority sector came from the County Councils Association, and that was two-fold. Firstly the C.C.A. questioned the wisdom of taking such a decision given that a committee⁽³⁾ had recently been set up to deliberate on the development of the whole of the higher education sector. Secondly the Association disliked the way that the Minister had made the announcement prior to consultation with itself, and - so it thought - other local authority associations.⁽⁴⁾ One suspects that the second point of criticism carried more weight than the first, affecting as it did the place of local authority associations in educational policy-making. However, even that did not provoke a response from within other associations. It might be added too by way of parenthesis that none of the C.A.Ts had actually been under the control of a county council!

Outside the local authorities, and perhaps rather more significantly, it seems as if the Ministry of Education's plans for direct grant were strongly opposed by the Treasury. This, it seems,

(1) ibid, Alexander to Part, 16 June 1961.

(2) ibid, Alexander to Part, 16 June 1961.

(3) Robbins Committee on Higher Education (Cmd 2154).

(4) AEC Files, A492, W. L. Dacey to Alexander, 11 July 1961.

was on two counts: firstly it was opposed simply because it would create yet another category under which extra money would be claimed; and secondly, as outlined above, the Treasury favoured the foundation of new universities and therefore hoped that the C.A.Ts would not be made direct grant institutions.⁽¹⁾ Presumably the Treasury was not of the opinion that the financial structure of the higher education system could stretch to meet both the development of the C.A.Ts and the new universities.

(c) The Significance of Direct Grant Status for the C.A.Ts

The significance of direct grant status for the C.A.Ts needs to be looked at at two quite distinct levels: firstly, in terms of the effect it had on the day to day running of the colleges; and secondly, in terms of what it meant within the wider context of the development of a general policy for the whole of higher education.

Taking first things first, it has to be admitted that many of the C.A.T. Principals at least regarded the days of direct grant status as a halcyon era,⁽²⁾ when they had direct access to the Minister's ear, and when money and resources were readily available. Whether the C.A.Ts would have fared less well under local authority control is impossible to tell. It should not be forgotten that this was a period of tremendous growth within higher education anyway. Moreover, as Burgess and Pratt have pointed out, the period of direct-grant status was so short - about 4 years for most C.A.Ts - that they had little opportunity to discover the disadvantages of such an arrangement.⁽³⁾

As for the importance of direct grant status within the wider framework of the development of higher education as a whole, that

(1)As argued by Lord Boyle in interview on 29 Apr. 1980.

(2)As described by Part in interview on 10 Apr. 1980.

(3)Burgess and Pratt (1970) op. cit., pp. 142-3.

can only be dealt with within the context of the time, when the Robbins Committee had already begun to deliberate on this question, and when a spirit of reform was beginning to pervade the whole system of higher education. On the one hand those who taught in the C.A.Ts, the majority of C.A.T. Principals, and the N.C.T.A., all of whom saw the C.A.Ts simply as the apex of the technical college system, merely regarded this transfer of control as facilitating the further development of the C.A.Ts along the lines outlined in earlier sections of this chapter. On the other hand though there is evidence to suggest that the Ministry of Education had a vision of the C.A.Ts as future universities, as reflected in Part's description of direct grant status as a 'two-way-bet.'⁽¹⁾ By this he meant that if the general structure of higher education remained unchanged, direct grant status would be looked upon as helping the C.A.Ts anyway simply by removing them from local authority control; and if the structure was changed, and the C.A.Ts became universities, then direct grant status would be looked upon as a helpful transitional stage. To see the future of the C.A.Ts thus, even if in such qualified terms, was clearly to be one step ahead of the majority of people concerned in their development.

In addition, what the Ministry of Education made no comment on, but what it was presumably fully cognisant of, was that direct-grant status gave the Ministry itself a much closer control over at least a small part of the higher education sector, a sector within which it had hitherto had very little responsibility.

(1) A term used to describe direct grant status by Part in interview on 10 Apr. 1980.

(d) Some Concluding Remarks

By way of concluding remarks it would seem important to stress that the Ministry of Education had clearly foreseen the implications of direct-grant status for the C.A.Ts even if one would not wish to argue at this stage that its implementation actually pre-judged the views of the Robbins Committee in its report in 1963.

That these implications were not equally obvious to the colleges themselves and those working in and with them, was stressed in a number of interviews I conducted;⁽¹⁾ and this will also be made manifest in the evidence that such bodies gave to the Robbins Committee, which is to be dealt with in the next chapter.

In short, the Ministry of Education's decision to make the C.A.Ts direct-grant institutions provides a very fine example of centralised decision-making within the field of further education: the initiative came from within the Ministry and was implemented speedily and with a minimum of debate or discussion.

In addition, this transfer of control suggests that the Ministry of Education at least, was by this time moving towards a position whereby it saw the possibility of ending the present divide within higher technological education between the universities and the technical colleges - by the granting of university status to the C.A.Ts whilst simultaneously increasing their own role within the field of higher education. In 1962 a dual policy for higher technological education still existed, but the Ministry of Education had advanced towards a situation which envisaged the ultimate convergence of the C.A.Ts within the wider framework of higher education as a whole.

(1) For example as argued by E. E. Robinson, interviewed on 19 Feb. 1980 and Sir James Tait, interviewed on 2 June 1980.

Chapter 5

The Recommendations of the Robbins Committee on Higher Technological Education 1961-63

A. Introduction

Throughout the 1950's there was growing public and parliamentary pressure for the further expansion of the universities. Public Pressure was reflected in the steadily increasing proportion of the age-group which was qualifying for university entrance. For example, with particular reference to engineering it was reported that at the beginning of the 1950's Southampton University received only 35 suitable applicants for 50 places in engineering. However, by 1956 applications outnumbered places to such an extent that it was decided to increase the number of places to 75 in the following year, with the possibility of further increasing this figure to about 120 places by 1962.⁽¹⁾ Meanwhile parliamentary pressure took the form of debates in both Houses of Parliament and a great many questions in the House of Commons concerning all aspects of higher education, reference to many of which has been made in the preceding chapters.

By 1960 this pressure, which was essentially calling for a widening of the opportunities within higher education, reached its zenith. In Lord Boyle's words it was the moment,

"To seize the opportunities of an hour that seemed uniquely full of hope."⁽²⁾

Such a perception was presumably shared by Eccles, the Minister of Education, who, in March 1960, on opening the debate on the Crowther Report⁽³⁾ in the House of Commons, boldly stated the need for more university places to be made available.⁽⁴⁾

(1) The Times, 9 Jan, 1956, p.60.

(2) Boyle, (1979), op. cit. p.7.

(3) 15-18, Report of the Central Advisory Council for Education, 24 July 1959.

(4) House of Commons, Vol 620, 21 Mar. 1960, col. 53.

This theme was also taken up in the House of Lords. In May of the same year, in a debate on Higher Education, Lord Simon of Whythenshawe made a speech which called upon the government,

"To appoint a Committee to inquire and report on the extent and nature of provisions of full-time education for those over the age of 18, whether in universities or in other educational institutions."⁽¹⁾

However, whether the government really needed such a spur to action is questionable for prior to the debate in the Lords, in April 1960, a group of ministers had already met under the chairmanship of Lord Butler and agreed that some sort of inquiry should be set up to look into the provision of higher education in Great Britain.⁽²⁾ The only question left undecided was exactly what sort of inquiry to mount. Boyle made it quite clear that the government perceived the need to act with speed, so that it was therefore somewhat wary of setting up a Royal Commission or any formal committee which was liable to prove a cumbersome piece of machinery, and very slow to make any recommendations.⁽³⁾ It was thus not until the summer of 1960 that the government agreed to Lord Butler's suggestion that a small committee of outsiders under an independent chairman, and with representatives of various government departments attached as assessors, be appointed to do the job.⁽⁴⁾

The Robbins Committee, as the Committee on Higher Education came to be called, was therefore established to review the current provision of higher education in Great Britain, and to recommend any changes it felt desirable. Yet there was a second and equally important reason behind the setting up of this inquiry, namely the need

(1) Lords Debates, Vol 223, 11 May 1960, col. 615.

(2) Boyle, (1979), op. cit. p. 5.

(3) ibid, p.5.

(4) ibid, p.5.

to try and develop a coherent policy for the whole of higher education, both inside and outside the universities. This point was made in interview by Part;⁽¹⁾ and it was also expressed in slightly different terms by Eccles at the meeting of ministers referred to above:

"He felt we had to have a national policy laying down the proportion of the 18-year-old age group that could expect to receive full-time higher education."⁽²⁾

Indeed it should perhaps be stressed that the desire for some sort of coherent or single policy for higher education had repeatedly been called for for years by the Ministry of Education, especially in relation to higher technological education. For example, even in the early 1940's Wallis had written of the need for this.⁽³⁾

B. The Establishment of the Committee on Higher Education

On the 20th December 1960 the government announced that the chairman of its committee of inquiry into higher education was to be Lord Robbins,⁽⁴⁾ Professor of Economics at the London School of Economics and Political Science, and a relatively unknown personality at the Ministry of Education prior to his chairing the committee.⁽⁵⁾

A little earlier during the same month the government had held a series of discussions with parties interested in the deliberations of the Robbins Committee including the Committee of Vice-Chancellors and Principals⁽⁶⁾ and a number of local authority associations⁽⁷⁾ to explain the intentions behind its establishment. In the course of these talks the government was keen to stress that the committee was to be composed of members appointed as individuals rather than as representatives of particular interests;⁽⁸⁾ and that the inquiry,

(1) Interview with Part, 10 Apr. 1980.

(2) Boyle, (1979), *op. cit.* p.5.

(3) PRO ED46/292 H.B. Wallis to C. I. Mr. Elliott, 17 Mar. 1942.

(4) T.E.S. 17 Feb. 1961, p.320.

(5) Interview with Part, 10 Apr. 1980, when Part made this point.

(6) C.V.C.P. Minutes, Minute 32, 9 Dec. 1960.

(7) A.E.C. Miles, A278, Higher Education, Robbins 1960-62, 8 Dec. 1960.

(8) ibid.

"Was intended to concern itself with the longer-term strategy of the development of full-time higher education",⁽¹⁾

rather than immediate or short-term developments. All in all it was thought that this review would take about two years to complete.⁽²⁾

Despite the care the government took to stress the non-representative nature of the Committee's membership it was hardly surprising that when the names were announced in early 1961 considerable criticism was expressed at its distinctly university bias.⁽³⁾ After all, there was no-one on the committee from the teacher-training colleges, and there was only one member drawn from the local authorities - Harold Shearman⁽⁴⁾ - and even he was not a typical local authority person but has been described rather as a London Labour man!⁽⁵⁾

Concern for the make-up of the committee was expressed most forcefully, and with a considerable degree of insight, by A. B. Clegg, the Education Officer of the West Riding County Council. He argued that,

"The constitution of the Committee would tend to make one believe that it is already accepted that not only the C.A.Ts and the Training Colleges but some of the lesser Colleges of Technology are going to be handed over lock stock and barrel to a body or authority which is going to administer higher education as such and nobody is going to raise any objections,"⁽⁶⁾

and went on to explain,

"I am concerned about this because I don't think that the Training Colleges, if financed by the Universities, are going to be better off than they are with local authorities, and I am worried about the liaison between the Schools and the Training Colleges if the latter move completely out of the Education service."⁽⁷⁾

(1) C.V.C.P. Minute 132, 9 Dec. 1960.

(2) ibid.

(3) see Appendix 9 - Membership of the Committee on Higher Education.

(4) Harold Shearman was then Vice-President of W.E.A.

(5) A description given by Lord Boyle in interview on 29 Apr. 1980.

(6) A.E.C. File A278, A. B. Clegg to W. Alexander, 30 Mar. 1961.

(7) ibid.

Interestingly, Clegg's concern was not shared by Alexander, Secretary of the A.L.C., although he saw the Committee's role as one of re-examining the provision of higher education across the board and of its administration. (1)

At the same time few members had any first-hand recent experience of the technical colleges although Sir David Anderson (2) had formerly been the Principal of the Birmingham College of Technology.

Clearly there was a danger that the non-university sector's contribution to higher education might be ignored or at least underestimated; and indeed when attention is turned to the report itself and the evidence submitted to the Committee an attempt will be made to show that there was a tendency for this to happen. To suggest that the Committee lacked empathy for the local authority sector of higher education would not be an exaggeration, particularly as regards the relationship of technical colleges to their local authorities.

Moreover, although the Committee was not appointed on a representative basis it seems that its composition was rather heavily university-orientated given that its remit extended to the whole of full-time higher education and not just to university education, as shown in the terms of reference set out below:

"To review the pattern of full-time higher education in Great Britain and in the light of national needs and resources to advise her Majesty's Government on what principles its long-term development should be based. In particular, to advise, in the light of these principles, whether there should be any change in that pattern, whether any new types of institution are desirable and whether any modifications should be made in the present arrangements for planning and co-ordinating the development of the various types of institution."
(3)

(1) AEC Files. A278, Alexander to Clegg, 7 Apr. 1961.

(2) Anderson was also a former director of the Royal College of Science and Technology, Glasgow.

(3) Higher Education, (Cmd 2154), para 1.

Thus it was clear that the Robbins Committee was to look at all branches of full-time higher education in Great Britain embracing not only the universities but also the teacher-training colleges and those institutions of Further Education which provided full-time advanced level courses. These included the Scottish Central Institutions, the Colleges of Advanced Technology, and to an extent the Regional Colleges, but largely excluded the area and local colleges.

Furthermore, despite its terms of reference, the Committee also felt that it could not completely ignore the contribution which the technical colleges made to higher education on a part-time basis:

"We have found it necessary both to refer to the present state of part-time higher education and to take into account its possible role in the future, because of the contribution it makes to the stock of qualified manpower and because estimates of the provision required for full-time courses must include some assumptions about the future of part-time study."(1)

Given this view of part-time higher education it seems, with hindsight, at least regrettable that no member of the Committee had up-to-date first-hand experience of either the C.A.Ts or of any other technical college. The one saving grace, perhaps, was the decision to attach a number of representatives from the relevant government departments to the Committee as assessors. These were A. A. Part (Ministry of Education), Sir Keith Murray (U.G.C.), H. H. Donnelly (Scottish Education Department) and J. P. Carswell (H.M. Treasury). The role played by these assessors is difficult to judge but certainly their influence, and especially that of Part, was not ignored by the Committee. According to Lord Boyle:

"This was a very important moment from the point of view of the Ministry of Education, since it was the first time a senior ministry official had been put in a formal position from which he could hope to influence future university policy."(2)

(1) Higher Education, (Cmd 2154), para. 7.

(2) Boyle, (1979), op. cit. p.5.

This claim was something of an exaggeration: for many years the Permanent Secretary of the Ministry of Education had sat as an assessor with the U.G.C., as had a senior official from the Scottish Education Department. However, that does not detract from the influence which Part and the Ministry of Education in particular brought to bear on the Robbins Committee.

Indeed, that it should have been Part who took on the job of assessor was particularly fortuitous for the C.A.Ts for he clearly had a firm grasp of the situation in the technical colleges, and had spent much time in fostering their development.

That Part played an important role in the deliberations of the Robbins Committee cannot be denied. It was obviously more than coincidental that he was largely in agreement with the Committee's recommendations with the exception of that advocating two ministries of education.⁽¹⁾ However, his role should not be over-estimated: as Lord Robbins was himself at pains to point out, Part's influence was not of an obvious and direct sort. He merely brought circumstances to the Committee's attention.⁽²⁾ A subtle distinction perhaps, but one that should be acknowledged.

C. The Robbins Report

(i) The Aims and Principles Underlying the Report

The Robbins Report, which was published in October 1963, proved to be very much in tune with the expansionist ethos of the period. Thus whilst the Report should not be looked upon as responsible for the expansion of higher education in the 1960's, it can at least be seen as providing some sort of legitimation for it.

(1) As pointed out by Lord Robbins in interview on 29 May 1980.

(2) ibid.

This expansionist perspective showed itself most clearly in the pivotal axiom underlying the many recommendations which the Committee made, and for which the Report is probably best remembered, namely that,

"Courses of higher education, should be made available for all those who are qualified by ability and attainment to pursue them, and who wish to do so."(1)

This principle is interesting on several counts. In the first place it very clearly reflected the political thinking of the Conservative Government, with its emphasis upon equality of opportunity, but leaving the onus for 'improvement' very much to the individual. The system of higher education which the Robbins Report advocated corresponded very closely to the opportunity-state of the Conservative Party's philosophy: the conditions were to be created for people to take advantage of them. Little wonder then, that immediately following the publication of the Report, the government issued a statement on the Report outlining its broad acceptance of this principle.(2)

Secondly, the Committee adopted this principle in the face of a growing interest in the techniques of manpower-planning and its possible use within the field of higher education. In Chapter VI of its Report the Committee did raise the question of how it might estimate the future number of students in higher education, but opted for trying to estimate student demand for higher education whilst rejecting the possibility of,

"Considering what supply of different kinds of highly educated persons will be required to meet the needs of the nation."(3)

(1) Higher Education (Cmd 2154) (H.M.S.O 1963), para. 31.

(2) Higher Education, Government Statement on the Report of the Committee under the Chairmanship of Lord Robbins (Cmd 2165) 1961-63, 24 Oct. 1963.

(3) Higher Education (Cmd 2154), 1963, para. 133.

At first glance it might seem surprising that the Committee devoted so little attention to the concept of manpower planning and its associated problems, disposing of the issue in its Report simply by arguing that,

"It is difficult for professions to estimate the long-term demand for particular types of recruit."⁽¹⁾

However, on consideration of the evidence given by the Advisory Council on Scientific Policy it is quite clear that apart from the fact that industry had often proved itself a poor judge of its future recruitment needs, the Robbins Committee also felt that recent reports of the A.C.S.P. might be used as evidence against the further expansion of higher education. Referring to a report the A.C.S.P. published in 1959 on Scientific and Engineering Manpower,⁽²⁾ which argued that the supply of such manpower was likely to meet the demand by 1965, and that it might exceed the demand by 1970, Lord Robbins explained to members of the A.C.S.P. that,

"I think it is quite likely that the figures in your report will be quoted against us and that people will say that if expansion is accelerated there will be over-production, at any rate on the science side."⁽³⁾

Quite simply, whilst the Robbins Committee was deliberating over the future development of higher education the figures that those involved in manpower planning were coming up with, did not help or support the Committee's arguments for expansion.

However, whether the Committee's estimates of future student numbers was any more precise than the figures of the manpower planners would only become clear with time. It estimated that there

(1) ibid, para 134.

(2) Scientific and Engineering Manpower in Great Britain, 1959, (Cmd 902), A.C.S.P., 1959.

(3) Higher Education: Evidence, Part 1, Vol B (Cmd 2154-VII), p.431.

should be 344,000 students in full-time higher education by 1970-71, and 553,000 by 1980-81.⁽¹⁾ With hindsight this was clearly an over-estimate. By 1971 there were only 234,985 full-time students in British universities,⁽²⁾ and this had only increased to 295,923 by 1978-79.⁽³⁾

A second principle of crucial significance for the future development of higher education outlined by the Robbins Report was that students should receive equal academic awards for equal academic performances;⁽⁴⁾ and that institutions performing similar functions should enjoy a similar status or prestige.⁽⁵⁾

These recommendations, coming as they did from a committee primarily made up of university people, marked quite a revolution in academic thinking and could but be welcomed by the technical colleges. Dating back to the end of World War II, since when the technical colleges' contribution to higher education had steadily increased, the technical colleges had laboured under an inferiority of status and prestige in relation to the universities, and in spite of numerous recommendations from many committees in favour of their being allowed to award their own degrees, no such development had ever been put into operation. Even in 1955 the universities had refused to loosen their monopoly over the awarding of degrees, and the National Council for Technological Awards which was established then was only empowered to award Diplomas in Technology. Perhaps this recommendation of the Robbins Committee foreshadowed an end to those irrational differences and inequalities.

(1) Higher Education, (Cmd 2154), Table 30.

(2) Statistics for Education, Vol 6, (H.M.S.O. 1971) Table 1.

(3) Education Statistics for the United Kingdom (H.M.S.O. 1979), Table 29.

(4) Higher Education, (Cmd 2154), para. 34.

(5) ibid, para 35.

In addition to those principles the Report argued that there was a need for a 'system' of higher education by which it meant a "consciously co-ordinated organisation."⁽¹⁾ Hitherto higher education had been allowed to develop piecemeal, with no co-ordination between the universities and the non-university institutions. This the Committee no longer deemed satisfactory given the cost of higher education and the greater participation and public interest generally which it commanded. Rather it saw the need for some centralisation of higher education, so that coherent policies might be drawn up and some degree of co-ordination established between the different institutions. In adopting this view the Committee was obviously in close agreement with the Ministry of Education, which had for long appreciated the need to try and deal with higher education, and especially higher technological education as a single entity, regardless of the different types of institutions involved.⁽²⁾

Of more interest in the context of this thesis though, is what exactly the Committee envisaged when it referred to this 'system'. When the Committee's recommendations are looked at in detail it will be seen that in effect it was advocating an increase in the number of universities, and a general enlargement of existing universities, by up-grading some non-university institutions to that status, by creating some new universities, and by bringing the teacher-training colleges under the university umbrella via the Schools of Education. In short the Committee's policy for higher education meant, in practical terms, a growth in the university sector. As Part pointed out, the Robbins Committee believed that the universities could and

(1) Higher Education, (Cand 2154), para 18.

(2) See pp.179-180 above.

would adapt themselves to do a large part of the job of providing higher education.⁽¹⁾ However, as will also be indicated later, in putting forward these recommendations, the Committee totally underestimated the potential contribution of the technical colleges to higher education, both full-time and part-time.

In its opening chapters the Report also outlined the essential aims of higher education. These it saw as fourfold: to teach people appropriate skills;⁽²⁾ to provide an all-round, general education;⁽³⁾ to encourage research,⁽⁴⁾ and to help pass on a common culture.⁽⁵⁾

These aims were to be applicable across the whole range of institutions involved in higher education from the teacher-training colleges to the universities although the Report acknowledged that certain aims might be stressed more in some institutions than in others. In themselves they were not particularly novel, and given the composition of the Committee it was hardly surprising that they reflected a 'university' perspective. Of rather more importance was the high level of generality at which they were expressed so that they could apply to any or all institutions of higher education. This, it would seem, was clearly in line with the Committee's intention to do away with irrational barriers or distinctions between institutions and to help establish a single, co-ordinated system of higher education.

Obversely the Committee made no attempt to define a university education any more precisely. Unlike many⁽⁶⁾ of those who submitted

(1) As argued by Part in interview on 10 Apr. 1980.

(2) Higher Education (Cmd 2154), para 25.

(3) ibid., para 26.

(4) ibid., para 27.

(5) ibid., para 28.

(6) For example, Sir Charles Morris, Vice-Chancellor of Leeds University.

evidence to it, the Committee made no effort to outline the 'essence' of a university education. To a certain extent this was inevitable if the Committee was to keep within its terms of reference. However, equally well this concern with institutions and institutional arrangements, and only the most general characterisation of higher education, might have been adopted as a way round some of the long-standing arguments which had bedevilled higher education, and especially higher technological education, in non-university institutions for many years. By not trying to define a university education as something unique or exclusive, but broadening it out into a concept of higher education, the Robbins Committee was saved from trying to explain if and how higher education in non-university institutions differed from that provided in the universities. Again, this was in line with the Committee's desire to see a single, co-ordinated system of higher education.

In accordance with these aims the Report recommended an end to the rather poorly co-ordinated arrangements for higher education which had existed hitherto, divided between the universities, the teacher-training colleges and the technical colleges. In future 60 per cent of higher education was to be provided for by the universities, ⁽¹⁾ including the C.A.Ts which were to be granted university status. The teacher-training colleges were also to be more closely associated with the universities through Schools of Education. ⁽²⁾

These recommendations, if implemented, would mark the virtual demise of the dual system for higher technological education. Technological education was then divided rather haphazardly between the

(1) Higher Education, (Cmd 2154), paras. 209 and 465.

(2) ibid, para. 735.

universities and the technical colleges. Under the Committee's proposals that taught in the C.A.T.s and the universities would all be transferred to the university system. However, that would still leave the Regional Colleges which also provided a large range of courses at the same sort of level. These colleges were initially to remain under local authority control although the eventual upgrading of some of these colleges to university status was envisaged by the Committee in the longer term. (1)

(ii) The Robbins Committee's Recommendation for Higher Technological Education

(a) Introduction

By the 1960's there existed in Britain a very widespread conviction that a more rapid rate of expansion of education, especially of scientific and technological education, would enable the economy to expand faster. This view was shared by the Robbins Committee: it pointed out that,

"The growing realisation of this country's economic dependence upon the education of its population had led to much questioning of the adequacy of present arrangements. Unless higher education is speedily reformed, it is argued, there is little hope of this densely populated island maintaining an adequate position in the fiercely competitive world of the future." (2)

In respect of higher technological education the Committee made two important points in the early chapters of its Report. Firstly it pointed out that the universities were no longer the sole providers of higher education. (3) This was not the truism it might appear to be in retrospect. Many failed to appreciate the prodigious rate at which the technical colleges had increased their contribution to this sphere of higher education since 1945, and more especially since the White Paper of 1956. At the turn of the century there were but few

(1) ibid., para 419.
 (2) ibid., para 16.
 (3) ibid., para 45.

full-time advanced courses carried out in the technical colleges. At the beginning of the war there were only 6,000 such students; by 1954-55 there were 12,000, and by 1962-63 they totalled 43,000.⁽¹⁾ By 1962-63 they constituted one-fifth of all full-time advanced students.⁽²⁾

Secondly, in the chapter on international comparisons the Report specifically highlighted the differences between the development of technological education on the Continent and in Britain in terms which were quite critical of the latter:

"Technology was accepted in British universities during the nineteenth century. On the Continent it was not; but the forces demanding technological education were powerful enough to build up Technical High Schools outside the universities. The scope and scale of some of these institutions are such that many think that the piecemeal and sometimes reluctant acceptance of technology by the British universities was to this country's ultimate loss. In this country technology has been widely scattered, partly in universities and partly outside, a weakness of organisation that has long been recognised and that began to be remedied in 1953 when the government announced plans for a massive expansion of the Imperial College of Science and Technology and other centres."⁽³⁾

These two points should be borne in mind when the Committee's more detailed recommendations in respect of technological education are considered. The first point, coupled with the Committee's view about a single, co-ordinated system of higher education presumably influenced it somewhat when considering the future of the C.A.Ts. As for the second, the Committee's admiration for the Technical High Schools undoubtedly affected the way that it recommended higher technological education should develop in the future.

(1) ibid, Table 3.

(2) ibid, para 45.

(3) ibid, para 102.

Interestingly, although the Robbins Committee recommended a further expansion of technological education, some of the data actually suggested that Britain was doing at least as well as some of its European competitors. Table 13⁽¹⁾ in Appendix 5 showed the total number of first degrees awarded in science and technology in 1959, the number of first degrees awarded in science and technology separately in that year, and the percentage which technological degrees formed of the total. From this table it was clear that in terms of the total number of first degrees in technology awarded in 1959 Britain was not terribly far behind Germany and ahead of all the other countries listed there except for the United States and France. The striking difference lay in the number of first degrees awarded in pure science: there Britain led the field with the exception of the United States. Thus in percentage terms Britain's output of technologists looked much more bleak than when the total numbers were considered.

However, although the output of technologists may have been greater than many people thought there was also a secondary problem, namely that pure science often attracted better students than did technology.⁽²⁾ This problem was not a new one. It had been recognised by the Percy Committee in 1945;⁽³⁾ and more recently it had been referred to by the Advisory Council on Scientific Policy in the light of its own findings⁽⁴⁾ and other survey evidence.⁽⁵⁾ As the above-mentioned Committees recognised, there was no simple solution to this problem, but on one level at least it could be tackled, by

(1) ibid, Appendix 5, Table 13.

(2) ibid, para 378.

(3) Higher Technological Education, Report of a Special Committee under Lord Percy, Ministry of Education, 1945, para 41.

(4) Scientific and Technological Manpower in 1962, (Cmd 2146), A.C.S.P.

(5) Technology - the 6th Form Boy, Oxford University Department of Education.

trying to make technological education as attractive in terms of status and prestige, as pure science.

With these points in mind attention will now be focused on the more detailed proposals put forward by the Robbins Committee.

(b) The Colleges of Advanced Technology

In line with the aims and principles underlying the Robbins Report the Committee was unanimous in recommending that the C.A.Ts should become technological universities. (1)

In reaching this decision the Committee was obviously influenced by a variety of different factors. In particular it was very sensitive to the C.A.Ts' inability to award their own degrees, and the lack of status and prestige which were the inevitable concomitants of this in the eyes of the general public, and especially of aspirant students: in its Report the Committee argued that the C.A.Ts,

"Are kept in a position of tutelage so that they are less attractive to students and their recruitment of staff is impeded." (2)

In addition the Committee was very impressed by the standards the C.A.Ts were already achieving: it felt that at least some of them were as good as, if not better than, some universities. (3)

Neither was the Committee alone in taking this view: the N.C.T.A. also recognised that the work done in the C.A.Ts was of honours degree standard. (4)

Moreover, the Committee felt that it would be something of an injustice to keep the C.A.Ts out of the university club at the same time as the 'new' universities were being admitted to it. (5) Also, added to this was the fact that the development of the C.A.Ts had been specially fostered. (6)

(1) A point made by Lord Robbins in interview on 28 May 1980.

(2) Higher Education, (Cmd 2154), para 391.

(3) A point made by Part in interview on 10 Apr. 1980.

(4) Higher Education, (Cmd 2154), para 390.

(5) A point made by Lord Robbins in interview on 29 May 1980.

(6) ibid.

Neither was the Committee troubled by the way that the C.A.Ts tended to concentrate primarily on science and technology: the Committee had been favourably impressed by similarly 'narrow-based' institutions both in the United States and in Europe, and saw no objection to encouraging similar developments in Britain. Indeed, the Committee recommended that,

"The central feature of the colleges should continue to be teaching and research in the sphere of technology."⁽¹⁾

This decision to recommend the up-grading of the C.A.Ts to university status was described by Part as,

"A policy of calculated risks."⁽²⁾

He maintained that unless and until the C.A.Ts were granted this status they would be unable to achieve the standards expected of a university institution. Presumably the Robbins Committee agreed with this rather circular argument!

Calculated risk or otherwise, the Committee's decision to recommend the up-grading of the C.A.Ts met with widespread approval, as will be clear when attention is turned to the evidence submitted to the Committee. However, in one fairly important respect the Committee fell short of what might have been expected of it in so far as it failed to deal in detail with the way in which it envisaged these institutions developing in the future, a criticism which Lord Robbins readily accepted with hindsight.⁽³⁾ As has already been indicated the Committee suggested that the C.A.Ts should retain their technological bias. However, in the next paragraph it went on to recommend that the colleges develop in new directions too, such as in pure science and the social sciences, especially management and

(1) Higher Education, Cmnd 2154, para 396.

(2) A phrase used by Part in interview on 10 Apr. 1980.

(3) Robbins, in interview on 29 May 1980.

business studies.⁽¹⁾ Admittedly a broadening of the scope of the C.A.Ts need not necessarily have prevented them from maintaining their distinctive industrial orientation. However, given the pressure that was likely to emanate from the other universities, if the Committee had really been intent on the C.A.Ts retaining their practical bias it might have put forward some rather more firm suggestions concerning their future. This woolly thinking was reflected in the Committee's recommendation to up-grade the C.A.Ts:

"We recommend that in future these colleges should in general become technological universities, and that this should be recognised in their title if they so wish."⁽²⁾

Added to this were provisos about the possibility of some C.A.Ts becoming the technological faculties of existing universities and the merger of others with other educational institutions. Obviously not all the C.A.Ts could be expected to develop along the same lines but they might have benefited from closer scrutiny of their individual cases. Having been under tutelage since their inception, to grant them autonomy so rapidly might well have left individual institutions in something of a policy vacuum.

(c) The Special Institutions for Scientific and Technological Education and Research

From the statistics which it collected the Robbins Committee argued that there was a need to attract more and better students to higher technological education.⁽³⁾ It also maintained that there was a need to increase the volume of technological research carried out in this country.⁽⁴⁾ On these grounds the Committee argued that a small number of new institutions, devoted to meeting these needs, should be founded: Special Institutions for Scientific and Technological Education and Research.⁽⁵⁾

(1) Higher Education, (Cmd 2154), para 397.

(2) ibid, para 392.

(3) ibid, para 378.

(4) ibid, para 381.

(5) ibid, para 383.

This recommendation seems to have had its genesis within the Robbins Committee itself: according to Lord Robbins both Sir Patrick Linstead and Mr. R. B. Southall were particularly keen on the idea of establishing a number of technological universities, and Lord Robbins also admitted to supporting the idea himself. However, he maintained that having listened to the evidence and arguments put forward by various members, the recommendation was put forward unanimously.⁽¹⁾

Clearly in making this recommendation the Committee was strongly influenced by the type of institutions providing technological education on the Continent and in the United States.⁽²⁾ Nor should it be forgotten that there was a long tradition of people in this country, for example, Lord Cherwell, who had for long argued the merits of establishing some sort of technological university.

These S.I.S.T.E.Rs - referred to as T.I.G.E.Rs by the Committee⁽³⁾ - were to be of university status but concerned mainly with technology and science. In the words of the Report, their

"Centre of gravity should be in science and technology."⁽⁴⁾ Quite what was to be understood by this remained rather vague, especially as the Report went on to suggest that,

"Other related subjects, e.g. social studies, operational research and statistics should be developed on a significant scale, and languages will be needed at least as ancillary subjects."⁽⁵⁾

Exactly how these S.I.S.T.E.Rs would differ from the C.A.Ts once the latter were granted university status remained suitably obscure!

(1) As argued by Robbins, in interview on 29 May 1980.

(2) Higher Education (Cmd 2154), para 383.

(3) A point made by Robbins in interview on 29 May 1980.

(4) Higher Education (Cmd 2154), para 384.

(5) ibid.

The S.I.S.T.E.R.s were not expected to be rigidly alike one another but they were to share a number of characteristics: they were to have between 3,500 and 4,500 students each, that is, large enough to cover a wide range of disciplines;⁽¹⁾ they were to place considerable emphasis upon postgraduate study;⁽²⁾ and were expected to create the right sort of conditions to attract staff of the requisite high quality.⁽³⁾ The intention behind the recommendation to establish such institutions was that they should help boost the status of technological education and research relative to the arts and pure science. Indeed, the S.I.S.T.E.R.s would possibly only differ from the C.A.T.s in respect of their roots: whilst the C.A.T.s had been developed out of technical colleges the S.I.S.T.E.R.s were largely to be fostered from existing university institutions. Of the five S.I.S.T.E.R.s that the Committee recommended be established one was to be founded anew, a second was to be developed out of an existing C.A.T.,⁽⁴⁾ and the other three were to be developed out of university institutions which were already heavily oriented towards technology. These were the Imperial College of Science and Technology, London, the Manchester College of Science and Technology, and the Royal College of Science and Technology, Glasgow.⁽⁵⁾ The latter and the two new institutions were to be independent universities. The other two were expected to form federal links with the university they were already a part of.⁽⁶⁾

(1) ibid.

(2) ibid.

(3) ibid.

(4) ibid., para 386.

(5) ibid., para 385.

(6) ibid., para 388.

(d) The Robbins Report's Recommendations for the Technical Colleges other than the C.A.Ts

The Robbins Committee's recommendations for the technical colleges other than the C.A.Ts were somewhat less clear-cut than the recommendation to up-grade the C.A.Ts to university status. Indeed, in relation to advanced-level work in these colleges the Committee's recommendations were at least rather ambiguous, and might even be interpreted as being contradictory. On the one hand the Committee argued that ultimately the demand for advanced-level full-time courses in the technical colleges would decline as the proportion of university places increased,⁽¹⁾ but on the other hand it recommended the establishment of the C.N.A.A. which was to be empowered to award degrees to students on the successful completion of courses of the appropriate standard in institutions outside the university sector.⁽²⁾ This implied that the Committee foresaw the continuation of courses of higher education in non-university institutions, and it might even be argued that the creation of the C.N.A.A. would indeed foster this. These recommendations relating to the technical colleges will now be considered more closely.

Taking firstly the development of the Further Education sector overall, the Robbins Committee clearly felt that its greatest contribution would be made in the sphere of advanced part-time education.⁽³⁾ It estimated the demand for advanced part-time courses increasing from 110,000 places in 1962-63 to some 200,000 places during the 1970's. By contrast the number of full-time advanced-level places was expected to rise from 31,000 in 1962-3 to around 65,000 by 1980-81.⁽⁴⁾ As the report explicitly argued,

(1) ibid, para 486.
 (2) ibid, para 433.
 (3) ibid, para 437.
 (4) ibid, para 486.

"If there is some increase by 1980 in the proportion of places at university level, and particularly if they include the C.A.Ts, the demand for advanced courses in colleges of Further Education will be lessened."⁽¹⁾

In addition the Report recommended that at least some of the regional colleges might follow the C.A.Ts and ultimately be upgraded to university status. In making this recommendation the Report endeavoured to compare and contrast these two types of institution. For example, it pointed out that the C.A.Ts did more post-graduate work than the regional colleges⁽²⁾ whilst the latter were less heavily oriented towards science and technology than the C.A.Ts incorporating departments of business studies, architecture and the like.⁽³⁾ However, all in all,

"The line dividing the most developed of the Regional Colleges from Colleges of Advanced Technology is not sharp, and may become even less so under the current plans for their expansion in the next few years."⁽⁴⁾

Not all the regional colleges were expected to develop into universities. Some were to remain regional colleges, and others might become constituent parts of existing universities or be federated to other colleges.⁽⁵⁾ Interestingly it was suggested that their development to meet these varied ends should follow closely that of the C.A.Ts: the Report recommended the use of direct grant in arranging the transfer of these colleges from local authority control to university status.⁽⁶⁾

As for the Council for National Academic Awards this was designed primarily to replace the N.C.T.A. although it was to differ from the latter in certain key respects. In the first place it was to be em-

(1) ibid .

(2) ibid, para 416.

(3) ibid, para 415.

(4) ibid, para 416.

(5) ibid, para 419.

(6) ibid, para 420.

powered to award degrees at pass and honours degree levels, instead of the Diploma in Technology; secondly its jurisdiction was to extend beyond the disciplines of science and technology, and finally it was to have amongst its members more representatives of the regional and area colleges than the N.C.T.A. had had from the C.A.Ts. (1)

Indeed, given the features outlined above the C.N.A.A. was expected to do more than simply replace the N.C.T.A. According to Lord Robbins it was also anticipated that the C.N.A.A. would to some extent begin to take over the role previously performed by the London University external degree although in its Report the Committee was careful to note that the latter would still have a part to play. (2) The Vice-Chancellor of London University had advised the Robbins Committee that its internal teachers were no longer so willing to bear the burden of the external degree. (3) In outlining its recommendations in respect of the C.N.A.A. the Committee doubtless kept this point in mind. An alternative device was obviously needed, and the model of the N.C.T.A. proved an attractive one.

This recommendation to set up the C.N.A.A. marked something of a revolution in the academic world for in suggesting that this body should be empowered to award degrees an end was signalled to the universities' monopoly over this function.

It was also important in so far as the existence of the C.N.A.A. would act as implicit recognition not of a single system of higher

(1) ibid, para 433.

(2) ibid, para 434.

(3) A point made by Lord Robbins in interview on 29 May 1980.

education but at least of two sectors which catered for courses of this standard. Indeed perhaps it is unfair to suggest that the Robbins Committee ever wanted a single or unitary system of higher education. It would seem that the Committee always accepted the existence of the further education sector but saw it as a rather secondary or residual sector to the universities as far as the provision of full-time higher education was concerned. The Committee believed that the universities could and should expand to meet the growing demand for full-time higher education, possibly at the expense of the technical colleges. Whether the Committee was correct in its estimation of the role of the technical colleges will be considered later in this chapter.

(iii) Some Concluding Comments on the Robbins Report

The Committee's terms of reference embraced all institutions of higher education in Great Britain. However, having considered its Report with particular reference to its proposals in respect of higher technological education it has become apparent that the Committee had the interests of one particular set of institutions very much to the forefront of its collective mind, namely the universities. Indeed, it would not be an exaggeration to describe higher education as the Committee saw it as synonymous with university education. Such an orientation is evident in respect of the Committee's recommendations concerning the C.A.T.s. It should also be noted that it extended to other aspects of higher education too. In particular the Committee wanted teacher-training colleges to become more closely associated with the universities through Schools of Education.⁽¹⁾ Equally this university orientation was highlighted

(1) Higher Education, (Cmd 2154), para 735.

by the Committee's recommendation to set up a separate Ministry of Education for the universities and the various research councils.⁽¹⁾ In short, whilst the Report may have provided the legitimisation for the expansion of higher education it also quite clearly wanted to see this take place within the traditional university framework. Those institutions which were not universities were expected to aspire to that status.

The effect that these recommendations had on higher technological education will be considered more closely at a later stage in this chapter, following upon an analysis of some of the evidence submitted to the Committee, both oral and written.

D. An Analysis of the Evidence Submitted to the Robbins Committee

Attention will now be turned to the evidence submitted to the Robbins Committee to see how far the recommendations made in the Report accorded with this and where it differed. Due to the volume of evidence submitted it has been necessary to treat it selectively: specific key issues will be dealt with, largely centred on the views of individuals or associations particularly concerned with the development of higher technological education. Much of the attention in the evidence relating to technological education was focused upon the C.A.Ts, and this will be reflected in the ensuing paragraphs.

As has already been indicated, the Committee was unanimous in recommending the up-grading of the C.A.Ts to university status,⁽²⁾ and this recommendation also found widespread support amongst those who gave evidence relating to the Colleges. Sir Hector Hetherington proved an exception, but he admitted that his knowledge of the C.A.Ts was only second-hand.⁽³⁾

(1) ibid., para 734.

(2) As pointed out by Lord Robbins in interview on 29 May 1980.

(3) Higher Education, Evidence, Part 2, Cmnd 2154-XII, Memorandum submitted by Sir Hector Hetherington, 24 May 1962, p.74.

The C.V.C.P. was amongst those who supported such a recommendation. However, it is interesting to note that the latter clearly retained its differences over this matter. This is quite apparent from the variety of opinions put forward by the vice-chancellors when they met to prepare their submission for the Robbins Committee. On the one hand there were those who implicitly accepted that the granting of university status to the C.A.Ts was inevitable. For example, Sir James Mountford, Vice-Chancellor of Liverpool University, maintained,

"I see no really long term solution which will satisfy informed public opinion short of degree-granting powers for Colleges of Advanced Technology."(1)

whilst J. S. Fulton, Vice-Chancellor of the University of Sussex, argued,

"If we were agreed that Colleges of Advanced Technology should give degrees for work of the same quality as that done in universities, it would surely be better to say so than to have it appear that a concession was being wrung from us."(2)

On the other hand it is clear that certain vice-chancellors at least still had their doubts about granting the C.A.Ts university status. Thus Dr. J. W. Cook, Vice-Chancellor of Exeter University, argued,

"Clearly the suggestion that Colleges of Advanced Technology should be given degree-granting powers is one to which serious and careful consideration should be given. There are a number of factors which should be borne in mind. If they are given such powers, then the title of the degree should be distinctive and not to be confused with the degrees given by the multifaculty universities. The courses provided in Colleges of Advanced Technology are different in character from those in universities, as are the entrance qualifications."(3)

Another vice-chancellor expressed a similar view in less moderate terms:

(1) C.V.C.P. Minutes, Minute 339, 16 June 1961.
 (2) ibid. .
 (3) ibid. .

"One of the tragedies in the history of higher education in this country in recent years is that Lord Cherwell was defeated in his attempt to get technological universities created. One of the gravest dangers now is that the currency of universities is to be watered down. Let universities do their traditional job under the old four faculties, but let new institutions be created to train the personnel now needed in other spheres. Let them grant degrees and have high prestige, but leave universities alone."(1)

Thus, whilst the C.V.C.P. recommended that the C.A.Ts be granted university status it also added the rider that they should be permitted to award "specified degrees" only.(2) The Committee's caution was also brought out in a comment by Sir D. Logan, Principal of the University of London, made at the meeting between the C.V.C.P. and the Robbins Committee was drawing to a close:

"This is a compromise document. The Chairman of our committee has expressed one view. Some members of our committee would favour granting limited degree-giving powers in technology and, perhaps, economics. Others feel that some of the C.A.Ts might be a nucleus from which a university might emerge."(3)

Quite clearly the C.V.C.P. had more reservations about granting the C.A.Ts university status than did the Robbins Committee.

In the light of the above it is hardly surprising that the C.V.C.P. also differed from the Robbins Committee as to the speed with which the C.A.Ts were to be granted university status. The Robbins Report recommended that the C.A.Ts be granted their charters immediately; and although initially each was to be watched over by an Academic Advisory Committee, suggested that,

"For some of the colleges arrangements of this sort will not prove to be needed for more than a very short period."(4)

In contrast to this the C.V.C.P. argued that,

(1) ibid.

(2) Higher Education. Evidence, Part 1, (Cmnd 2154-IX) p.1127.

(3) ibid., p.1156.

(4) Higher Education, (Cmnd 2154), para 395.

"The situation will have to be dealt with step by step. The raising of the Colleges of Advanced Technology to university status will occupy the next fifteen to twenty years."(1)

The reservations expressed by the C.V.C.P. in respect of granting the C.A.Ts university status obviously arose in part from a desire to defend the traditional role of the universities. The C.V.C.P. held to a particular conception of a university and of what a university education was expected to provide a student with, which the C.A.Ts were unable to match up to at least as they had been initially conceived. According to the C.V.C.P. the special position of the universities,

"Derives alike from the high level and from the catholicity of the studies in which they engage."(2)

And therefore by the same token,

"No institution which is narrowly pedagogical or seminarist or ultra-specialised in outlook can, in the view of the Committee, make the contribution to society which the universities have traditionally made and which given proper safeguards, they will continue to make."(3)

Whilst the C.V.C.P.'s attitude towards the up-grading of the C.A.Ts to university status might have been expected it must be pointed out that not inconsiderable notes of reservation were sounded too by the N.C.T.A. and the Principals of the C.A.Ts. However, whereas the C.V.C.P. was concerned that the C.A.Ts would fail to meet the various characteristics which it considered as essential to a university, the N.C.T.A. and C.A.T. Principals were anxious that certain of the C.A.Ts distinctive features should be maintained even if they were to become universities. In particular they wanted the C.A.Ts to retain their specialist orientation in the

(1) Higher Education, (Cmd 2154-IX), Vol. D, p. 1184.

(2) ibid., Memorandum submitted by the C.V.C.P., p.1126.

(3) ibid.

technological sphere, and their practical bias and close industrial links. As the N.C.T.A. argued,

"The Governing Body of the Council believe that there is a place in the future pattern of higher technological education for institutions conducting high level courses comprising integrated academic study and industrial training of the type now leading to the award of the Diploma in Technology and programmes of work such as those now leading to the award of Membership of The College of Technologists. Work of this character demands the closest links between the college and industry and these may well be facilitated by the fact that such institutions would work in a more limited field than is customary in universities."(1)

As for the Principals of the C.A.Ts they were somewhat divided on this issue. Venables, Principal of the Birmingham C.A.T., favoured the idea that the C.A.Ts should become Royal Colleges of Technology, and it was his view that was put forward by the C.A.T. Principals in the evidence they submitted to the Robbins Committee. The C.A.T. Principals argued that the C.A.Ts:

"Should be expanded mainly but not exclusively as institutions of higher professional education for industry and commerce."(2)

They were to retain their technological bias but be enlarged to comprise five faculties in all - engineering, applied science, pure sciences, social sciences and other studies. The last-named faculty being something of a catch-all category depending, in particular colleges, on the individual interests of the institution.⁽³⁾ These colleges, the Committee of C.A.T. Principals maintained, should become,

"Royal Colleges of Technology, styled as such, and entitled to all the 'university-quality' conditions essential to their work and development."(4)

By way of a conclusion to its memorandum the Committee of C.A.T. Principals argued as follows:

- (1) Higher Education, Evidence, Part 1 (Cmd 2154-VII), Vol. B, Memorandum submitted by the N.C.T.A., 18 Oct. 1961, p.694.
 (2) Higher Education, Evidence, Part 1 (Cmd 2154-VIII), Vol. C, Memorandum submitted by the Committee of C.A.T. Principals, p.701.
 (3) ibid, p.782.
 (4) ibid, p.783.

"There is almost a natural inclination on the part of new institutions to strive to become part of the established order, distinguished of course but not readily distinguishable from it. Many would, therefore, urge that we should develop into technological universities, styled as such. However, we believe in a diversity of institutions, and we are concerned to establish a route in higher education parallel to that of the traditional universities."(1)

This suggests that the C.A.T. Principals wanted their institutions to remain separate from the traditional universities, and in interview with Sir James Tait, formerly the Principal of the Northampton C.A.T., he made it quite clear that the C.A.T. Principals took this attitude not because of any lack of confidence on their part but due to an underlying fear that if they became technological universities they would become the poor relations within the university club.(2)

Nevertheless, according to Dr. Edwards, Principal of the Bradford C.A.T., with the exception of Venables, the other Principals, both secretly and openly were also lobbying for university status.(3) However, at least publicly, they took a more cautious line of argument.

The N.C.T.A. and the Committee of C.A.T. Principals were not alone in ascribing to the "different but equal" principle. The Advisory Council on Scientific Policy also adopted a similar line in its memorandum, arguing that the universities should continue their work in the field of basic research whilst the C.A.Ts were the more suitable type of institutions for the pursuit of applied research. Moreover, when giving oral evidence to the Robbins Committee the A.C.S.P. was exceedingly critical of the universities'

(1) *ibid.*, pp.785-6.

(2) As argued by Sir James Tait in interview on 2 June 1980.

(3) A point made by Dr. E. G. Edwards in interview on 6 May 1980.

record in the field of technology:

"We have been struck for a good number of years by the relatively low state of research in these fields, even in the universities. There are certain branches of engineering which have been notoriously bad for a long time. We think this is a very serious matter and some of us have doubts as to whether we will get adequate research in these fields if it is left to the universities. The C.A.Ts give the opportunity to put some real life into broad areas of technological research."⁽¹⁾

It was presumably on account of this view of the universities that the A.C.S.P. recommended that the C.A.Ts, rather than the universities, should be developed along lines similar to the development of Imperial College, London.⁽²⁾

Such an attitude towards the C.A.Ts was exceedingly refreshing, particularly as only a few years earlier the A.C.S.P. had been quite disparaging of the work carried out by the technical colleges in the field of advanced technology, and had been quite adamant that technological education should be developed mainly in the universities.⁽³⁾

Turning to the evidence submitted to the Robbins Committee more generally it is clear that there was a rather subtle distinction between recommending that the C.A.Ts become technological universities or colleges with all the attributes of university self-government and recommending simply that they be granted university status. The positive reasons for urging one of these two alternatives were the same: firstly it was argued that the Colleges should be self-governing institutions like the universities since they too were involved in providing full-time courses of higher education albeit mainly in the fields of science and technology. Secondly it was argued that the C.A.Ts needed to be able to confer their own awards if they were to be accorded equivalent status to the universities. Indeed, even

(1) Higher Education, Evidence, Part 1, (Cmnd 2154-VII) Vol B, Oral evidence on behalf of the A.C.S.P., p.423.

(2) ibid, p.426.

(3) Higher Technological Education, A.C.S.P., 25 June 1948.

the Ministry of Education, which had been instrumental in establishing the N.C.T.A., admitted in the course of its evidence that the Colleges were fighting a losing battle in trying to establish the Dip. Tech. as equivalent to a university degree.⁽¹⁾ It was this appreciation of the 'magic' associated with a degree which led the Ministry of Education to argue that,

"The only defensible principle is that comparable awards should be available for comparable achievement whether the course is provided at a university or at another suitable institution of higher education or whether or not it is primarily vocational."⁽²⁾

The point of difference between those who suggested that the C.A.Ts become technological universities and those who simply argued that the Colleges be given university status lay in the fact that the latter group wanted the C.A.Ts to remain distinct from the traditional universities: equal but still different. Apart from those mentioned above such an attitude was expressed by the Royal Institute of Chemistry,⁽³⁾ and also by particular individuals including Sir Eric Ashby.⁽⁴⁾

Moreover, some of those that held this view suggested that the Colleges might confer degrees with distinctive titles. Thus Sir Eric Ashby, for example, recommended that both the C.A.Ts and the teacher-training colleges should award degrees with distinctive labels, possibly under the control of a national or regional degree-giving corporation with a Royal Charter.⁽⁵⁾

Those who argued that the C.A.Ts should be 'different but equal' in relation to the universities were arguing for equality of status whilst wishing to see the C.A.Ts retain their technological and industrial biases.

(1) Higher Education, Evidence, (Cmnd 2154-XI) Vol F, Memorandum submitted by the Ministry of Education, 3 Apr. 1962, p.1893

(2) ibid, p.1899.

(3) Higher Education, Evidence, (Cmnd 2154-VI) Vol A, p.46.

(4) Higher Education, Evidence, (Cmnd 2154-X) Vol E, p.1671.

(5) ibid, p.1670.

Having outlined the distinct characteristics of the C.A.Ts it might help to describe the characteristics of the institutions with which they were contrasted, namely the universities. Those who gave evidence to the Robbins Committee differentiated the universities from the C.A.Ts broadly on account of their 'academic character' and their multi-disciplinary composition. These characteristics were expressed in various ways. Sir Charles Morris, in his memorandum, outlined his perception of the academic character of British universities thus:

"The English university regards itself as essentially concerned to try to make a strong academic impact upon the student while he is in residence, however vocationally preoccupied he may initially be. The university seeks to lead him to pursue 'academic' studies for their own sakes, with a width of intellectual interest and to a depth of intellectual analysis which might well not be demanded for the mere purposes of a technical or even professional qualification. Even in these days English universities hold to this academic purpose as central for undergraduate education, and they still have a considerable measure of success with it. If they did not do so they would not regard themselves as universities; and the public would not allow them the prestige which they are willing to concede to universities, though not, at any rate at present, to other institutions."(1)

Moreover, Sir Charles Morris differentiated the term 'academic' from that of 'educational': the universities are interested in helping students acquire an academic turn of mind; they are not concerned with advanced education as such.(2)

In addition he argued that the close combination of teaching and research was unique to universities,(3) and that it was of the utmost importance that university students were taught by a person who was an expert within his or her particular field.(4)

(1) Higher Education. Evidence, (Cmd 2154-XI), Vol F, Memorandum submitted by Sir Charles Morris, 25 June 1962, p.2059.

(2) ibid, p.2060.

(3) ibid, p.2068.

(4) ibid, p.2069.

Interestingly, having offered this definition of a university education Sir Charles Morris went on to recommend that the C.A.Ts be granted university status: clearly he saw them as conforming to his conception of a university. He wanted to draw a line between the universities (including the C.A.Ts) and the 'rest'. The latter would comprise those receiving some kind of in-service professional or sub-professional education and training.⁽¹⁾ Perhaps this conception of the C.A.Ts was due to his being Vice-Chancellor of a University (Leeds) which for years had made a very considerable contribution to technological education.

A somewhat different view was taken by Sir Alan Bullock. He too saw the primary concern of the universities as an 'academic' one but, unlike Sir Charles Morris, he saw this as excluding students whose main purpose was vocational or professional. His solution was to recommend the setting up of separate institutions for the pursuit of such education.⁽²⁾

As has already been indicated, the C.V.C.P. had its doubts about granting the C.A.Ts university status on account of the latter's narrow, technological bias.⁽³⁾ Such an attitude was also shared by the Trades Union Congress, at least implicitly. One of its representatives commented thus:

"Loughborough is an excellent example of the kind of development which is taking place at the present time. As I understand it, it started as a purely engineering college but it is now - and indeed must be under the pressure of circumstances - developing science. That will inevitably lead into the development of mathematics, and there is the beginning of a true university foundation."⁽⁴⁾

(1) ibid, p.2063.

(2) Higher Education, Evidence, Part 2, (Cmd 2154-XII), p.32.

(3) See p.206 above.

(4) Higher Education, Evidence, Part 1, (Cmd 2154-X) Vol E, Oral Evidence given by the T.U.C. p.1456.

Quite clearly those who submitted evidence to the Robbins Committee laid considerable emphasis upon trying to define a university education and comparing and contrasting the education provided in the C.A.Ts with this. However, as has already been indicated, in drawing up its Report the Committee itself paid little attention to such issues. The Report recognised the technological bias of the C.A.Ts and argued that it should be maintained although simultaneously recommending that the C.A.Ts develop in new directions too. In short, the Robbins Committee did not try to define a university education but simply adhered to its own guidelines concerning the broad aims of higher education as a whole. Treated thus there was no difficulty in recommending that the C.A.Ts be granted university status.

As part of the debate about granting the C.A.Ts university status came the further issue as to whether the C.A.Ts should simply join the 'university club' as it were, or whether the dual system of higher education with the universities on one side and the technical colleges on the other should be maintained, and the C.A.Ts retained within the latter sector. The Robbins Committee recommended that the C.A.Ts be transferred to the university sector, and indeed suggested that certain of the regional colleges might follow the same path in the future.⁽¹⁾ Such recommendations were clearly in accord with the basic principles underlying the Report as outlined above.⁽²⁾ Nevertheless there was considerable opposition to such proposals, especially from amongst the local authority associations which gave evidence to the Committee. Thus the A.T.T.I. argued that the C.A.Ts should be granted university status but added,

(1) Higher Education, (Cmd 2154), para 477.

(2) See p.187 above.

"This does not imply a gradual merging of the Colleges with the Universities. Merely to transfer them to the university system would destroy the distinctive approach which has been found so valuable and would isolate them from the rest of the technical college system of which they are now the apex. There is no reason why two institutions with university status - a C.A.T. and a traditional university - should not exist side by side in the same town."(1)

Discussion about the up-grading of the C.A.Ts often took place without regard to the rest of the Further Education sector. This the A.T.T.I. did not do. Instead it argued that,

"There is much to be gained from avoiding a horizontal division across the technical college system at university entrance level. The existence of degree courses in some Technical Colleges would give scope for local authority initiative in building up colleges in their area; it would provide a means by which the stimulating influence of the Advanced Colleges could make itself felt throughout the technical college system; it would ensure the existence of a pool of teachers with experience of teaching at degree level from which the Advanced Colleges could draw their staff; and it would create institutions which in an expanding situation could be up-graded to university status as the need arose."(2)

This argument as expressed by the A.T.T.I. was part of a much wider concern: the local education authorities were frightened that the Robbins Committee might recommend the removal of higher education from existing local authority control. This was opposed by a number of local authority associations. For example, both the County Councils Association⁽³⁾ and the London County Council,⁽⁴⁾ whilst not outlining in detail proposals for the future pattern of higher education, were adamant that local authority responsibility for higher education should not be further diminished.

As for the A.E.C. even a cursory reading of its evidence to the Robbins Committee will indicate that its approach was clearly dis-

(1) Higher Education, Evidence, Part 1, (Cmd 2154-VII) Vol B, Memorandum submitted by the A.T.T.I., p.599.

(2) ibid, p.600.

(3) Higher Education, Evidence, Part 1, (Cmd 2154-VIII) Vol C, Memorandum submitted by the C.C.A., 8 Nov. 1961, p.729.

(4) Higher Education, Evidence, Part 1, (Cmd 2154-X) Vol E, Memorandum submitted by the L.C.C., 7 Feb. 1962, p.1544.

cordant and out of line with the arguments put forward by the latter. The A.E.C. in its memorandum outlined a complex pattern for the future system of higher education with the universities on the one hand as national institutions catering for students at honours degree level; and on the other, regional institutions providing for students at pass-degree-level. The reasoning behind these proposals was as follows:

"After a most careful examination we recognise the real difficulties which obtain on the present assumption that higher education can be directly administered by 146 local education authorities. We believe it is of great importance that there should be effective links between the schools and higher education and that L.E.As should be an important part of the administrative pattern of higher education. We have therefore come to the conclusion that there would be advantage in the establishment of regional councils for higher education, exercising statutory powers, and administering these colleges and establishments of Further Education in the broad band of higher education which we describe as providing courses broadly of pass degree standard."⁽¹⁾

This scheme, though, was fraught with difficulties. For example, Lord Robbins queried how it would be found out in the first place whether a student was capable of an honours degree or a pass degree in order to place him or her in the most suitable institution.⁽²⁾ Moreover, whilst the dichotomy between honours and pass degrees might overcome the existing status problem with regards to technological education (for the Dip.Techs. would be equated with honours degrees), the proposed system was in danger of developing a new and equally unfortunate distinction between pass and honours level degrees.⁽³⁾

The Chairman also criticised the proposals as lacking in flexibility. This brought a firm response from Alexander, reflecting the A.E.C.'s fear of losing its existing responsibilities within the higher educational sphere should the dual system of higher education

(1) Higher Education, Evidence, Part 1 (Cmnd 2154-VIII), Vol C, Memorandum submitted by the A.E.C., p.759.

(2) Higher Education, Evidence, Part 1 (Cmnd 2154-VIII), Vol C, Oral Evidence, p.763.

(3) ibid, p.765.

be transformed into a more streamlined single one:

"We think there is flexibility in this plan, and we think this is most important. We disbelieve in rigid structures, and we believe in deliberate overlaps. What we do not believe in, what we are not putting as a preferred solution is a comprehensive higher institution offered to over 20% of the age group and ranging over the whole field of human knowledge. That is the alternative which we reject."(1)

At the very least it can be inferred from the foregoing that Alexander was not striking the right sort of chords with the Robbins Committee. It was as if the A.E.C. already perceived the drift of the Committee's thinking with its obvious liking for the university system, and its lack of empathy for the local authority viewpoint.

Following upon the above evidence the A.E.C. submitted a Further Memorandum to the Committee recording opposition from within the A.E.C. itself to a regional pattern of higher education. The explanation of this attitude sums up the attitude of the local authority associations towards higher education:

"While the Notice of Motion was in general terms, its non-acceptance was mainly due to specific opposition to a proposal which implied the surrender even in part of direct responsibility for the administration of higher education within the area of an individual L.E.A."(2)

The local authorities were exceedingly jealous of their responsibilities for higher education and were unwilling to relinquish them. However, the attitude the A.E.C. adopted towards the Robbins Committee can have done little to enhance the reputation of the local authorities in this sphere. As it was, notwithstanding the views expressed by the various local authority representatives, the Robbins Committee recommended that the C.A.Ts be granted university status and all the powers of self-government appropriate to this.

(1) ibid, p.772.

(2) ibid, Further Memorandum, p.778.

Some observers might have regarded the transfer of the C.A.Ts as inevitable, especially as even whilst the Committee was deliberating the Ministry of Education transferred the C.A.Ts out of local education authority control and gave them direct-grant status. Lord Robbins, though, maintained that this was not so.⁽¹⁾ In that case the Committee was presumably swayed by its view of the local authorities, and presumably too by its own preference for expanding the existing university system.

Turning to the evidence submitted by the Ministry of Education it is interesting to note that there was close agreement between it and the views set out in the Robbins Report. For example, it was the Ministry of Education which put forward the following principle which was later to prove one of the underlying axioms of the Robbins Report:

"The only defensible principle is that comparable awards should be available for comparable achievement whether the course is provided at a university or at another suitable institution of higher education."⁽²⁾

Moreover, the Ministry of Education appeared to share the Robbins Committee's view about higher education being synonymous with university education. At least, that was the ideal to which the Ministry of Education thought the system of higher education should aspire to and which it described as a system of comprehensive universities:

"They would cover a broad span of intellectual ability and would provide a wide variety of courses from the most academic to the fairly higher practical, preferably all on the same campus."⁽³⁾

This view squared with the aim that the Ministry of Education had for the C.A.Ts, namely their eventual up-grading to university

(1) Lord Robbins, in interview on 29 May 1960.

(2) Higher Education, Evidence, Part 1 (Cmd 2154-XI), Vol F, Memorandum submitted by the Ministry of Education, 3 Apr. 1962, p.1899.

(3) ibid, p.1905.

status. However, it was equally interesting to note that, with respect to the C.A.Ts the Ministry of Education had also come to accept that the Dip.Tech. was never going to be able to compete on equal terms with university degrees:

"We came to the conclusion that 'degree' is a magic word, as our evidence shows. We did so with some reluctance, because strenuous efforts have been made to establish the Dip.Tech. in this country; but we feel that this is a losing battle."(1)

Ultimately the Ministry of Education felt that,

"The aim should be to provide as far as practicable for all first degree level work and above - at any rate if full-time - to be done in a sufficiently varied range of institutions which are of high standing and enjoy (or are potentially capable of enjoying) academic autonomy including, of course, the power to give their own degrees and other awards."(2)

The decision to up-grade the C.A.Ts has been dealt with in detail. Turning briefly to the S.I.S.T.E.Rs, as the Report indicated this was an 'innovation' designed to help improve the status of technological education in relation to the arts and sciences. The idea was generated from within the Committee itself. However, on sifting through the evidence it is clear that at least two individuals - one closely involved in the technological sphere - suggested developments along similar lines.

Firstly, in his memorandum of July 1961 Sir John Cockcroft⁽³⁾ recommended that there be no further expansion of the C.A.Ts, at least until they had proved that they were meeting the requisite standards. Simultaneously he suggested the building up of a number of university colleges of science and technology into independent university institutions. He listed London, Manchester and Glasgow as the three most likely candidates for such development.⁽⁴⁾ All in

(1) ibid, Oral Evidence given by Mr. A. A. Part on behalf of the Ministry of Education, 2 July 1962, p.1926.

(2) ibid, Memorandum submitted by the Ministry of Education, 3 Apr. 1962, pp.1900-1.

(3) Master of Churchill College, Cambridge, part-time member of the Atomic Energy Authority and a member of the A.C.S.P.

(4) Higher Education, Evidence, Part 1, (Cmnd 2154-VI) Vol A, Memorandum, p.279.

all these proposals squared with those of the Robbins Committee for the S.I.S.T.E.R.s: they were to increase in size to accommodate 4,000-5,000 students each; they were to concentrate mainly on science and technology, and to develop powerful postgraduate schools. (1)

A similar scheme was also forwarded by Sir Alan Bullock, although he saw this as being in addition to developing the C.A.Ts. He suggested that Imperial College, London, the Manchester College of Science and Technology and Birmingham University's faculty of technology should be established as independent universities or institutes. (2)

As for the Colleges of Further Education, it is quite obvious from the foregoing that the Robbins Committee took little account of the views of the local authorities concerning these when drawing up its Report. As has been shown, the local authorities were loathe to see their control of higher education diminished. The Robbins Committee, on the other hand, wanted to see the university system expand, and a greater proportion of higher education provided through that system. To refer to the evidence of the various bodies now would be repetitious. However the views of the local authority associations, and the way they conflicted with the proposals of the Robbins Committee should be obvious enough in the light of the earlier discussion of the C.A.Ts and their relationship to the universities and local authority sector.

E. Some Conclusions

Whilst the actual implementation of the Robbins Report will form the first part of the next chapter the final section of this one will

(1) ibid.

(2) Higher Education. Evidence, Part 2, Memorandum, p.31.

consider the implications of this Report for higher technological education.

As has been repeatedly argued and illustrated throughout this chapter, the Robbins Report essentially provided the legitimation for the further expansion of higher education within the universities. This enlargement of the university sector was to be brought about in part by establishing new institutions and also by transferring some non-university institutions to this sector. The C.A.Ts fell into this category: the granting of university status to the C.A.Ts marked an important move towards the fulfilment of the Robbins Reports' university-oriented policy of expansion. It must be seen against this backdrop even though some may wish to argue that university-status was something that the Colleges themselves were seeking since their establishment in 1956. To what extent the C.A.Ts benefited from being members of the university club will be considered briefly in the next chapter.

More generally too it must be noted that the Robbins Committee based its estimates relating to university expansion on the potential likely demand for higher education from future students. It did not heed the needs of the customers (.e.g. industry) for different sorts of graduates. In other words, the Report failed to consider the matching of supply and demand - including that in the field of higher technological education.

Furthermore, given its university orientation the Report sadly underestimated the existing contribution of the technical colleges to higher education, and especially technological education.

In short the Robbins Committee left higher technological education in a policy vacuum, with only its recommendations in

respect of the C.N.A.A. holding the door to the future development of technological education half way open. It is to the filling of this policy vacuum that the next chapter turns.

Chapter 6

After Robbins: The Filling of the Policy Vacuum in the Field of Higher Technological Education, 1963-68

A. Introduction: Initial Reactions to the Robbins Report

On 23rd October, 1963 the Robbins Report⁽¹⁾ was published.

Within twenty-four hours of this the government issued a Statement on the Report⁽²⁾ from Downing Street, accepting the broad principles underlying it although not committing itself to all the precise recommendations contained within it.

As regards higher technological education the government immediately endorsed the proposal to grant the Colleges of Advanced Technology and the Scottish Central Institutions university status, and welcomed the idea of establishing the Council for National Academic Awards. However, the government was not prepared to make any recommendations in respect of the proposed Special Institutions for Scientific and Technological Education and Research. Instead this matter was referred to the U.G.C. and the Advisory Council on Scientific Policy for further consideration.

The initial reaction to the Robbins Report, in the words of the Times Educational Supplement, was one of,

"Genial enthusiasm and only gentle reservations".⁽³⁾

In so far as the Report provided the desired-for legitimization of future continued university expansion this was possibly a fair description. Of course there was opposition to this. The Times in particular took the line that more would inevitably mean worse,⁽⁴⁾ and an early editorial in the Times Educational Supplement raised

(1) Higher Education, (Cmd 2154) 23 Oct. 1963.

(2) Government Statement on the Report of the Committee under the Chairmanship of Lord Robbins (Cmd 2165), (H.M.S.O., 1963).

(3) T.E.S., 1 Nov. 1963, p.625.

(4) 'The Times' ran a series of articles on the Report, generally arguing that an increase in student numbers necessarily entailed a lowering of standards.

similar doubts albeit in quite a restrained tone.⁽¹⁾ Nevertheless, the universities themselves were ready to continue their programmes of expansion: at the Home Universities' Conference in December 1963 one don even suggested that they could work longer hours to deal with increased student numbers if they feared that standards might otherwise fall.⁽²⁾

The C.A.Ts too were reasonably well satisfied with the treatment meted out to them at the hands of the Robbins Committee. As E. G. Edwards, Principal of the Bradford Institute of Technology argued,

"The Colleges of Advanced Technology will endorse this report with enthusiasm not merely because of its generous treatment of their work and its healthy optimism about their future, but because their experience accords with its basic postulates. They know of the great reserves of ability among the educationally under-privileged from their long experience of part-time students and the high performance of those students in the new Diploma of Technology courses."⁽³⁾

However, this mildly euphoric reaction to the Robbins Report was soon overlaid by strains of criticism, especially from the regional colleges and bodies associated with them. The view of G. S. Atkinson, Principal of the Rugby College of Engineering Technology, reflected the general disillusionment and disappointment of the regional colleges with the Robbins Committee's proposals:

"The curricula, staffing and facilities of some regional colleges have been adjudged by the National Council for Technological Awards to be appropriate for work for honours degrees. Robbins itself says '- the line dividing the most developed of the regional colleges from Colleges of Advanced Technology is not sharp ...' Yet it appears that all of the regional colleges will start off in the non-university sector and all the training colleges - very few of which teach to pass degree standard - will be placed in the university sector."⁽⁴⁾

(1) T.E.S. 25 Oct. 1963, p.587.

(2) T.E.S. 20 Dec. 1963, p.912, View of Professor B. R. Williams, Stanley Jevons, Professor of Political Economy, Manchester University.

(3) Education, Vol 122, 1 Nov. 1963, p.794.

(4) ibid., p.797.

Indeed, G. S. Atkinson went on from there to attack the Robbins Committee's proposals for not going far enough in extending the university umbrella:

"The Report is the result of the first comprehensive survey of full-time higher education. It is a great disappointment that the opportunity to unite the institutions has been lost. Instead, the establishment of quite distinct university and non-university sectors is recommended."⁽¹⁾

A similar attitude was adopted by E. E. Robinson, ex-president of the A.T.T.I. He regarded the proposals for the regional colleges as,

"Nothing short of contemptuous,"⁽²⁾
leaving them as "second tier institutions"⁽³⁾ even though many of them had as many degree-level students as a number of universities.

Moreover, Robinson was extremely critical of the way the Robbins Committee associated high status with the absence of part-time students.⁽⁴⁾

Significantly, though, at this point in time neither the A.T.T.I. nor the principals of the regional colleges seem to have had any alternative policy to the university-oriented one of the Robbins Committee. As Robinson has argued, at this time the attitude within the technical colleges towards the universities was one of deference whilst simultaneously the staff in the technical colleges lacked confidence in their own institutions.⁽⁵⁾ Whilst the principals of the regional colleges were disappointed at the Robbins Committee's proposals it must remain questionable whether they really believed in the credibility of their own institutions as universities.

(1) ibid., p.798.

(2) T.E.S., 22 Nov. 1963, p.757.

(3) ibid.

(4) ibid.

(5) As argued by Robinson in an interview on 19 Feb. 1980.

Indeed, even six months later when the A.T.T.I. published a pamphlet entitled, 'Is Robbins Enough?'⁽¹⁾ its criticisms of the Report had not developed much beyond those made in the immediate aftermath of the Report's publication. The A.T.T.I. criticised the Robbins Committee's proposals on four counts: (a) for giving insufficient attention to the question of the demand and supply of various types of highly educated personnel in relation to the needs of the community; (b) for not dealing satisfactorily with the vocational aspects of higher education (- the A.T.T.I. wanted to see a more formal relationship between each profession and institutions of higher education); (c) for failing to consider the role of students in running their own affairs, and (d) for virtually ignoring part-time education.⁽²⁾

It then went on from there to argue as follows, still seemingly in support of the idea of at least some regional colleges attaining university status in the future:

"The Association welcomes the fact that the Report holds out the possibility that some of the Regional Colleges should be given autonomous status in the university field in due course. Some Regional Colleges are already undertaking sufficient work of university level to justify their achieving this status in the near future. The granting of autonomous status to Regional Colleges should however be a continuing process, so that, as work develops in response to local or national demands, the Colleges can be given autonomy. The way for this to be done must be kept open."⁽³⁾

The A.T.T.I. even went on to suggest ways in which the regional colleges might begin moving towards this ideal. For example, it was suggested that the colleges should set up formal academic boards and separate governing bodies; and encourage the development of post-

(1) Is Robbins Enough?, A.T.T.I., May 1964.

(2) ibid., pp. 3-4.

(3) ibid., p. 8.

graduate work. (1)

Besides criticism from the technical teachers' association the Robbins Report also aroused opposition from the local education authorities. At a conference on the Report set up by the London Regional Advisory Council for technological education, W. G. Stone, Director of Education for Brighton, attacked the Report for implying that local education authorities could not be trusted with the control and development of any really important educational institution, and argued that all in all the Report had exhibited a very inadequate appreciation of what education authorities had been doing in this sphere. (2) The following month Education printed a long article by John Lease on the effect the Robbins Report would have on the balance between central and local government control. In his view,

"It would transfer the seat of power over a large sector of our social life to central government and other bodies spending vast sums of public money with no semblance of public control." (3)

It was on account of this general fear of losing its existing control of higher education that the A.E.C. opposed certain of the Robbins Committee's proposals. In particular the A.E.C. concentrated on two specific issues which, although outside the sphere of higher technological education, had some bearing on it. In the first place the A.E.C. took a prominent part in opposing the Committee's recommendation for two Ministers of Education instead of one. (4) It was with particular reference to further education that J. G. Kellett, Director of Education for Cheshire, put the case for one minister rather than two:

(1) ibid.

(2) Education, Vol 123, 10 Jan. 1964, p.48.

(3) Education, Vol 123, 7 Feb. 1964, pp.245-6.

(4) A.E.C. File A.1132, Alexander to Sir Alec Douglas-Home, Prime Minister, 25 Oct. 1963.

"Although there will be general agreement that an advance in further education provision is urgently required, it must be accepted that, since further education is costly, the highest possible return must be obtained from every penny spent. This can best be assured by an arrangement under which one Minister is responsible for the whole field of education, assisted by local control and local scrutiny of all proposed expenditure, this scrutiny to be by bodies (i.e. County Councils and County Boroughs) which are directly responsible, through elected representatives, to the ratepayers."(1)

Secondly the A.E.C. strongly opposed the Robbins Committee's recommendations for taking the teacher-training colleges out of local authority control and placing them under the universities' umbrella. Instead it declared its support for Mr. Shearman's minority report:

"The Committee for their part are impressed by the view stated in the minority report that the resources of L.E.As are such as to enable the development of teacher-training to take place without disrupting the administrative partnership between the colleges and the L.E.As."(2)

Whilst these two issues dominated the A.E.C.'s thinking at this period it should also be noted that the colleges of further education were not neglected. In particular, in consultation with the Ministry of Education concerning the establishment of the C.N.A.A. Alexander was quick to point out that he felt the L.E.As were in danger of being under-represented:

"The proposed constitution is badly balanced. It seems to /the Education Committee of the Association/ quite inadequate to have only one member appointed specifically as knowledgeable in local education administration. This weakness is all the more serious when one reflects that considerably less than half the members of the Council would be drawn from institutions maintained by L.E.As. The Committee agree that representation of industry and commerce is essential. But there is provision for co-opted members and it is more likely that such members would be drawn from industry and commerce than from local government.

In the opinion of the Committee, therefore, the specific representation of L.E.A. interests should be at least as great as, and probably greater than, the specific representation of industry and commerce."(3)

(1) ibid, Kellett to Alexander, 5 Dec. 1963.

(2) ibid, 12 Dec. 1963. View of the Education Committee of the A.E.C.

(3) ibid, Alexander to J. A. R. Pimlott, Ministry of Education, 2 Dec. 1963.

Quite clearly then, the thrust of the A.E.C.'s opposition to the Robbins Report came from a fear that local authorities would be forced to relinquish their existing control of higher education, and this it intended to oppose on all fronts to the best of its ability.

B. Implementation of the Robbins Report

Following upon the Government's Statement on the Robbins Report arrangements were soon set in motion for setting up the C.N.A.A. and for transferring the Colleges of Advanced Technology to the university sector. As both Part⁽¹⁾ and Boyle⁽²⁾ pointed out, copies of the Report had been distributed to and discussed by Ministers in advance of its publication so that where it was decided to implement certain recommendations action could be taken as soon as the Report was formally published.

Thus in November 1963 the U.G.C. was in a position to recommend that the C.A.Ts, in collaboration with itself, should appoint Academic Advisory Committees to advise the Colleges on their development. The U.G.C. suggested that the Academic Advisory Committee should have the following wide terms of reference:

"To consider and advise how best to implement the recommendation of the Robbins Committee, accepted by the Government in their Statement of 24th October 1963 (Cmd 2165) that the College should have university status and to advise generally on the future development of the College and on academic matters related thereto."⁽³⁾

In actual practice there was considerable variation in the terms of reference of each Academic Advisory Committee and the details of their work also differed,⁽⁴⁾ but there were broad issues which were inevitably discussed by all of them and their respective Colleges.

(1) Part, in interview on 10 Apr. 1980.

(2) Boyle, (1979) op. cit. p.11.

(3) University Development 1962-67, (Cmd 3920), U.G.C. (1968) para 165.

(4) Venables (1978), op. cit., p.57.

Three issues in particular had to be resolved: (i) whether the College should become a separate independent university, or whether it should develop in association with an existing university;⁽¹⁾ (ii) the extent to which the College should retain its technological bias and how that bias might best be expressed;⁽²⁾ and (iii) the future institutional and administrative framework of the college.⁽³⁾

As regards the first issue raised above, only two Colleges did not opt for independence, namely the Welsh College of Advanced Technology which became a constituent college of the University of Wales, and Chelsea College of Advanced Technology which was eventually recognised as a constituent college of London University in 1971. As for the technological bias of the Colleges, most of them did maintain this to some extent although they expanded their range of non-technological courses after achieving university status.⁽⁴⁾ Nevertheless, after 1971 only one of these new technological universities - Loughborough - retained 'technology' in its title. On the administrative side the Colleges adopted the traditional university arrangements of a senate and council.

Rather than transferring the Colleges to the university system on an individual basis 1st April 1965 was chosen as a common date for this purpose. From that time onwards the C.A.T. experiment came to an end even though inside each College remained much the same.⁽⁵⁾

With the loss of the C.A.T. label went also the Colleges' sense of distinct identity and also their unanimity and consensus. The C.A.Ts had comprised a distinct and separate group within the further

(1) University Development, 1962-67, para 174.

(2) ibid., para 183.

(3) ibid., para 184.

(4) For a detailed analysis of the development of the C.A.Ts after 1963 see Venables, (1978), op. cit.

(5) ibid., p.36 - especially personnel.

Education sector, a distinctiveness which had been fostered by the Committee of C.A.T. Principals under the leadership of P. Venables.⁽¹⁾ However, once the C.A.Ts became universities it was Venables who led them away from the 'different but equal' approach, arguing that the Colleges could not maintain their separateness within the university sector.⁽²⁾ Indeed Venables came to an agreement with the Committee of Vice-Chancellors and Principals that the former C.A.T. Principals would not form a separate group within the C.V.C.P.⁽³⁾ It is also worth noting that, with hindsight both Tait and Edwards - the former less forcefully than the latter - suggested that there might have been some merit in occasional meetings of sub-groups within the C.V.C.P., not just among former C.A.T. Principals but obviously including them as one possible sub-group.⁽⁴⁾ In fact Edwards even argued that it might have been better for the C.A.Ts to have remained as a separate sector, awarding a distinct degree. However, he acknowledged that the rest of the universities would have opposed the idea of the C.A.T.s having a separate grants committee.⁽⁵⁾

As fast as the C.A.Ts were being transferred to the university sector the Council for National Academic Awards was being set up to enable students on advanced courses in non-university institutions to gain degrees. Indeed, the speed with which it was established suggests that plans for it had already been discussed pretty thoroughly between the National Council for Technological Awards and the Ministry of Education before the Robbins Report was published. The creation of the C.N.A.A. should be attributed to John Pimlott,⁽⁶⁾ who was then

(1) View of E. G. Edwards, in interview on 6 May. 1980.

(2) ibid.

(3) A point made by Sir James Tait in interview on 2 June 1980.

(4) In interviews on 2 June 1980 and 6 May 1980, respectively.

(5) Edwards, in interview on 6 May 1980.

(6) Sir Toby Weaver, Higher Education and the Polytechnics, (The Joseph Payne Memorial Lecture, 1973-74), p.6.

Under-Secretary in the Further Education Branch of the Ministry of Education.

On 10th September 1964 the Council received its charter and it held its first meeting on 30th of the same month. The Council had 22 members: 5 from industry and commerce; 2 from local education authorities; 7 from universities and the former C.A.Ts; 7 from other colleges in the Further Education sector, and a chairman. The initial membership of the Council is set out in Appendix 10. The first chairman was Sir Harold Roxbee-Cox, formerly chairman of the N.C.T.A.

In passing it should be noted that representation of the local education authorities had been increased from one to two members, presumably on account of pressure exerted by the A.E.C.⁽¹⁾ Nevertheless, as Alexander had foreseen, the local authority representatives were well-outnumbered by those from industry and commerce.

The C.N.A.A.'s function was to be broader than that of the N.C.T.A., dealing not just with courses in science and technology but also with those in the arts and social sciences as well as with some in management and business studies. Sir Harold Roxbee-Cox showed himself to be very perceptive of this need: in a paper given to the summer meeting of the Association of Technical Institutions he argued,

"I believe that in the field of the arts the C.N.A.A. will have its greatest job to do. Many students who fail to get into a university take the London B.A. (General) degree. This is a three subject degree, and although the regulations admit a two 'A' level entry the syllabuses are primarily designed for internal students and based upon a three 'A' level entry. The failure rate is consequently great. Apart from this, it is doubtful how far the study of three unrelated arts subjects is an adequate preparation for any profession outside teaching. The London external honours degrees in arts subjects, economics, sociology, etc., are most difficult for an external student unless he is very gifted; under present conditions a very gifted student is likely to be an internal student in a university.

(1) A.E.C. File, A1132, Alexander to Pimlott, 2 Dec. 1963.

Thus it seems imperative that the C.N.A.A. should urgently meet the needs of arts students who cannot get into a university, and in doing so I hope it will be able to pioneer courses with new combinations of subjects particularly attuned to the character of the modern world."(1)

The actual development of such courses, though, did not prove an easy matter. In its second Annual Report the C.N.A.A. expressed concern about the lack of teaching staff of a sufficiently high calibre, particularly in the realms of arts and social sciences;(2) and reiterated the point the following year, stressing that the Council had only been able to approve seven courses in Arts and Social Studies during the year. These seven courses constituted 17 per cent of the number considered compared with 47 courses in science and technology which amounted to 50 per cent of the number put up for approval.(3) The problem was that not only did the staff in the colleges have far less experience teaching honours degree level courses in Arts and Social Studies than in science and technology; they also lacked experience in designing such courses, unlike those who had been involved in developing the Diploma in Technology courses.(4)

Despite such teething troubles the C.N.A.A. and its awards were widely welcomed in the technical colleges. In particular the introduction of a doctorate awarded by the Council proved much more popular than the former research degree administered by the N.C.T.A. - the Membership of the College of Technologists. The Council noted,

"The new research degrees have given rise to widespread interest and 73 candidates applied for registration for these awards between 1st January 1966 and 30th September 1966."(5)

(1) Sir Harold Roxbee-Cox, The Coming of the Council for National Academic Awards, (given at A.T.I. summer meeting 10-12th June 1964), p.6.

(2) Report for the period 1 Oct. 1965 to 30 Sep. 1966, C.N.A.A., para 7.6.

(3) 1966-67, Report, C.N.A.A., para 1.2.

(4) ibid, para 3.4.

(5) Report for the period 1 Oct. 1965 to 30 Sep. 1966, C.N.A.A., para 3.

In contrast, at the end of 1964 there had been only 137 candidates registered for the award of the M.C.T., and total membership of the College of Technologists at that time was a mere twelve. (1)

Moreover, the Council also encouraged the development of courses not hitherto covered by university degrees. For example, it approved courses in agricultural engineering and nautical studies. (2) It also developed new approaches to more traditional disciplines such as a degree in French studies which involved learning not only the language and literature but also something about French politics, economics, geography and culture; (3) and a course in statistics and computing which required a significant orientation of mathematical studies towards areas of increasing industrial importance. (4)

However, whilst these recommendations of the Robbins Report were accepted and implemented there were others, often of crucial significance within the Robbins Committee's overall scheme for the future development of higher education, which were not.

First of all the Robbins Committee's proposals in respect of the S.I.S.T.E.Rs were referred to the U.G.C. and the A.C.S.P. for further consideration.

The U.G.C. recorded its attitude towards the S.I.S.T.E.Rs in its quinquennial report for 1962-67. The U.G.C. shared the Robbins Committee's views on the national importance of continuing to expand and develop technological education in Britain, but it opposed the S.I.S.T.E.R. concept on three counts. Firstly, it disliked the idea

(1) Education in 1964 (Cmd 2612), Report of the D.E.S. (Mar. 1965) p.66.

(2) Report for the period 1 Oct. 1965 to 30 Sep. 1966, C.N.A.A., para 1.1.

(3) 1967-68 Report, C.N.A.A., para 3.31.

(4) ibid, para 3.32.

of trying to impose a uniform pattern of development on five separate institutions. Secondly it thought that to concentrate technological education in just a few institutions might stifle developments in existing universities. Finally it felt that such a policy of concentration might encourage the introduction of unwise and unnecessary considerations of status and title into the university system which really required to be planned as a single, coherent unit. (1)

Such a response was not altogether surprising. Whilst individuals from within the universities had often called for the establishment of a technological institute in Britain the U.G.C. itself had opposed this idea. The U.G.C. admitted that there was a pressing need to continue to increase the number of university places for scientists and technologists; but it maintained that the existing universities could respond to this need - on their usual rather ad hoc basis - as they had done in the past. The U.G.C. disliked the idea of concentrating just one or two faculties within a single institution and calling that a university. Such was to go against the traditional British conception of a university as a multi-faculty institution.

The Advisory Council on Scientific Policy also criticised the S.I.S.T.E.R. concept, arguing that over and above the issues raised by the U.G.C. there were also objections on financial grounds and in respect of staffing shortages. If these S.I.S.T.E.R.s were set up they would inevitably attract some staff away from existing universities and Colleges of Advanced Technology. With the shortage of

(1) University Development 1962-67, (Cmd 3820), U.G.C., para 225.

staff which then pertained anyway this would leave all the institutions concerned working below full strength.⁽¹⁾

However, the Advisory Council did not reject the Robbins Committee's proposals as completely as the U.G.C. had done. The former accepted the reasoning behind the recommendations,⁽²⁾ and argued that already the three institutions in London, Manchester and Glasgow quite closely conformed to this ideal.⁽³⁾ The Advisory Council thus suggested seeking a compromise between the views of the Robbins Committee and of the U.G.C. and to this end advocated that the Imperial College of Science and Technology, London, the Manchester College of Science and Technology and Strathclyde University, Glasgow,⁽⁴⁾ should receive preferential treatment in the allocation of resources, but that this should be supplemented by the provision of financial support for selected developments in other existing universities and colleges too.⁽⁵⁾

Moreover, the S.I.S.T.E.R. concept lacked the full support of the Ministry of Education. In particular Sir Toby Weaver, who was then Deputy Secretary, was of the opinion that there were already a number of powerful institutions providing courses in technology so that there was no need to create the S.I.S.T.E.Rs.⁽⁶⁾

Eventually the government made what can only be described as a compromise decision: in the House of Commons in February 1965 Crosland announced that the government,

"Wholly accept the principle of selective development and expansion of technological education at a high level. They consider, however, that this will be best achieved not by creating a separate

(1) 17th Annual Report (Cmd 2538), A.C.S.P., 1963-64, Appendix A, para 4.

(2) ibid, para 5.

(3) ibid, para 6.

(4) Formerly the Royal College of Science and Technology, Glasgow.

(5) 17th Annual Report, A.C.S.P., Appendix A, para 6.

(6) Point made by Sir Toby Weaver in interview on 29 Feb. 1980.

category within institutions of university status, but by continuing the build up of the three specialised institutions named by the Robbins Committee - Imperial College, London, the Manchester College of Science and Technology and Strathclyde University. These will be given priority in the provision of finance, both capital and current."⁽¹⁾

Other proposals by the Robbins Committee which were not accepted by the government did not refer solely to technological education. Nevertheless they had important implications for its future development as the Robbins Committee's plan for an enlarged university sector was slowly cast aside.

The first step away from the Robbins Committee's scheme was taken within a few months of the Report's publication when the government announced that the Ministry of Education was to be transformed into the Department of Education and Science, and that the universities were to come under its umbrella.⁽²⁾ In short the government had decided not to implement the Robbins Report's recommendation which argued for a separate Minister to take care of the universities. The way opinion turned in favour of one Minister rather than two has been dealt with in great detail elsewhere⁽³⁾ and the various arguments will therefore not be repeated here. Perhaps one interesting aspect should be noted here, though, namely that not even the universities were unanimously in favour of the Robbins Committee's recommendations.⁽⁴⁾

This announcement was made in February 1964. By the end of that year the government took a further decision contrary to the recommendations of the Robbins Committee when it announced that the teacher-training colleges were to remain under local education authority control.⁽⁵⁾

(1) House of Commons, Vol 707, 24 Feb. 1965, col 391-2.

(2) House of Commons, Vol 688, 6 Feb. 1964, col 1339-45.

(3) Boyle (1979), op. cit., pp.13-14.

(4) ibid.

(5) House of Commons, Vol 703, 11 Dec. 1964, col 1972-3.

In coming to this decision the D.E.S. would have been aware of the opposition the Robbins Committee's proposals had aroused among the local education authorities and the A.T.T.I., and also amongst the universities.

As early as December 1963 the A.E.C. had outlined its view on the matter. Whilst recognising the desirability of strengthening the academic links between teacher-training colleges and universities it was convinced that,

"The proposals for administrative and financial changes are not in the best interests either of the Teacher Training colleges or of the Education Service as a whole, and would almost certainly be inimical to the rapid expansion and development in teacher training provision which is already planned and which is agreed by all concerned to be vitally necessary."(1)

Early in 1964 E. E. Robinson and E. Britton of the A.T.T.I. also began to perceive that the future development of the Further Education sector depended upon the teacher-training colleges remaining under local education authority control; and by the autumn of that year these two men had won over the rest of the A.T.T.I. This stance gained them the gratification of the L.E.As, but also the dislike of the teachers' unions.(2)

The universities also opposed the idea but for quite the opposite reason to the L.E.As and the A.T.T.I. Whereas the latter feared a diminution of local authority control over higher education the universities were worried that they would be unable to cope with the additional burden that responsibility for the teacher training colleges would entail.(3) In particular the U.G.C. was,

"Understandably worried about the implications for university autonomy if there were to be a wholesale transfer of expenditure on the Colleges to the U.G.C. vote."(4)

(1) A.E.C. File A1132, 12 Dec. 1963.

(2) As argued by Robinson in interview on 19 Feb. 1980.

(3) As argued by Weaver in interview on 29 Feb. 1980.

(4) Boyle (1979), op. cit., pp.15-16.

Moreover the Ministry of Education was divided on the issue:

"The branch responsible for Teacher Training supported it, whereas the branch dealing with Teacher Supply, and Schools Branch, both opposed it."⁽¹⁾

At the level of personalities, both Part and Odgers⁽²⁾ supported the proposals whilst Weaver did not;⁽³⁾ and it was the view of the latter which eventually received governmental support. Interestingly, whilst the Ministry itself was divided on this issue the Labour and Conservative front-benchers were agreed, as Boyle has made plain.⁽⁴⁾

Shortly after this in February 1965 Antony Crosland, who had replaced Michael Stewart as Secretary of State for Education and Science, announced along with the decision in respect of the S.I.S.T.E.R.s that, with one possible exception, the government had decided against the creation of any more new universities for about the next ten years.⁽⁵⁾

The decision not to establish any more new universities within the next ten years was partly taken, it would seem, because after the publication of the Robbins Report, when it became quite clear that expansion was to be the order of the day, the universities increased their estimates as to how far they could and would expand in terms of student numbers. However, simultaneously, as will be shown in the following section, by early 1965 an alternative policy for the future development of higher education in both the universities and the non-university sector was slowly emerging. In some senses then, this decision taken by Crosland in February 1965 should be viewed not simply as a further step away from the Robbins Committee's schema,

(1) *ibid.*, p.15.

(2) P.R. Odgers, Under-Secretary, Ministry of Education.

(3) A point made by Lord Boyle in interview on 29 Apr. 1980.

(4) Boyle (1979), *op. cit.*, p.16.

(5) House of Commons, Vol. 707, 24 Feb. 1965, col 391-2.

but as the groundwork on which the new policy was to be built.

Thus within less than eighteen months of its publication it became clear that the Robbins Committee's blueprint for the future development of higher education was not going to be translated into government policy. That this was not going to happen can perhaps be attributed in part to the pressure exerted upon the governments of that period by those groups which opposed one or more of the Committee's recommendations, and to members of the D.E.S. whom also rejected certain of the recommendations and the premises upon which they were built. At one level such an appraisal is undoubtedly true, as has been illustrated above. However in an attempt to understand something more generally about the policy-making process it might be expressed in somewhat different terms: the Robbins Committee's blueprint for the future development of higher education was not successfully implemented as government policy simply because it was a blueprint. In other words the Robbins Committee forgot or chose to ignore the means by which most policies are changed: changes in policy are not usually radical but gradual, incremental changes. The Robbins Committee sought to enlarge the size of the university sector at the expense of the colleges under local authority control in quite a sudden and dramatic way. Such policies rarely succeed. Thus the Robbins Report provided the legitimation for the future expansion of higher education - but not very much more.

C. The Evolution of the Binary Policy

Having turned its back on the Robbins Committee's proposals for the future development of higher education the government needed an alternative policy, and it is to the emergence of what has come to be termed the binary policy for higher education that attention will now be turned.

To say that a policy emerges in the light of various ideas mooted by different people gives a rather woolly and certainly unscientific view of the policy-making process. Nevertheless, this is the way that policies often come to be formulated; and the evolution of the binary policy provides a fine example of this.

Without wishing to state the obvious it should be clear that policies rarely emerge completely out of a void, and in the case of the binary policy it emerged in the wake of the Robbins Report and the various government decisions which have been outlined in the previous sector. It has already been indicated in the previous chapter that the Robbins Committee seriously under-estimated the local authorities' contribution to higher education. As successive decisions were taken not to implement the Robbins Report's recommendations it became clear that an alternative policy was needed, a policy which would fill the vacuum as far as higher education, and especially higher technological education was concerned in the teacher-training colleges and technical colleges. Boyle has summed up the dilemma facing the government in 1965 in the following terms:

"It seemed to me clear that any government would have to decide whether or not to go on taking the local authority sector of higher education seriously."⁽¹⁾

Support for doing just that began to be voiced loudly and clearly towards the end of 1964. In particular E. E. Robinson and E. Britton of the A.T.T.I. were beginning to work out proposals for a binary policy for higher education which were published under the title 'The Future of Higher Education within the Further Education System' in March 1965. Both Crosland and Boyle had seen this A.T.T.I.

(1)Boyle, (1979), op. cit. p.16.

document in draft in January 1965 and had endorsed the views expressed within it.⁽¹⁾

The A.T.T.I.'s argument was expressed in the following terms:

"Our thesis therefore is that higher education in this country has developed, and will continue to develop, along two distinct lines, each with its own tradition and each with its own standards of excellence. Both traditions will play an important role in the future economic, mental and spiritual development of the nation. The traditions are not in competition; they are complementary. The next few years will see a rapid expansion in the number of full-time university-type first-degree courses. There will also be an equal and possibly greater expansion in the number of flexible technical college-type courses associated with the practice of a profession and integrated into the life of the community. In the long run neither type of course can flourish without the other."⁽²⁾

The emphasis upon the professional orientation of technical college courses was an important element in the A.T.T.I.'s policy. On the one hand this provided a clear contrast with the university tradition of "learning for learning's sake."⁽³⁾ On the other hand it held the way open for closer links between the technical colleges and the teacher-training colleges:

"We would like to see an experiment in creating a single unified system of local authority higher education, either by merging an existing regional college with an existing training college, or by the setting up of a new institution to perform the functions of the two."⁽⁴⁾

This plank in the A.T.T.I.'s policy was played down somewhat but Robinson remained convinced that the teacher-training colleges should become part of the Further Education sector.⁽⁵⁾ Interestingly, at the time Robinson was head of the mathematics department at the Enfield College of Technology, and supported the idea of merging the college with the Hornsey College of Art and the Trent Park Training College.⁽⁶⁾ The journal Education picked up on this aspect of the

(1) A point made by Robinson in interview on 19 Feb. 1980.

(2) The Future of Higher Education within the Further Education System, A.T.T.I. (March 1965) p.18.

(3) ibid., p.2.

(4) Education, Vol. 125, 16 Apr. 1965, p.775.

(5) A point made by Robinson in interview on 19 Feb. 1980.

(6) Education, Vol 125, 16 Apr. 1965, p.775.

A.T.T.I.'s policy and commented favourably upon it:

"There is no doubt that this conception of a well-regarded system of higher professional education separate from and alongside the universities, is extremely attractive, provided it can surmount the temptation to equate 'separate with equal' with some kind of respectable apartheid."⁽¹⁾

Simultaneously the D.E.S. was developing a policy along similar lines. By 1965 it was obvious within the Department that the regional colleges were not going to be granted university status in the near future. There was thus a need to develop a positive policy for higher education which would engender in these colleges a self-confidence and a sense of social prestige as heads of an alternative league.⁽²⁾ Hitherto the Further Education system had always been subordinate to the universities. If this were to change there was no alternative to a binary policy - unless all institutions of higher education were to be called universities!⁽³⁾

This desire to take the local authorities' contribution to higher education seriously was shared by a majority of the Labour Government of 1965⁽⁴⁾ and also by the front-bench of the Conservative Party,⁽⁵⁾ and in particular by those with recent experience within the Ministry of Education. Boyle has stated his case with reference to the numerical projections contained within the Robbins Report:

"In 1962/63 there were 130,000 students in the universities, and 86,000 students doing full-time higher education in the local authority sector. The Robbins recommendations assumed that by 1980 the corresponding figures would be 492,000 and 66,000. This projected figure of only 66,000 students doing full-time higher education in local authority colleges by 1980 was clearly an absurdity, since the numbers were already certain to rise to 50,000 as early as 1967. But in any case the record of the

(1) *ibid.*

(2) As argued by Weaver in interview on 29 Feb. 1980.

(3) *ibid.*

(4) At least one exception was R. Crossman who had grave doubts about the binary policy and personally favoured a unitary solution - see R. Crossman, The Diaries of a Cabinet Minister, Vol. 1 (Hamilton, 1975), p. 326.

(5) In interview on 29 Apr. 1980 Boyle stressed the way in which the front benches are often closer together on policy matters than they are to their respective back-benches.

contribution which had already been made to higher education by the local authority sector, surely entitled this sector to a more optimistic future than the very low proportion - only 12% in 1980 - which Robbins proposed."⁽¹⁾

Boyle has also indicated that just before the reorganisation of the Ministry of Education he submitted a paper to the relevant Cabinet Committee outlining a policy along similar lines to that laid down by Crosland in March and April 1965.⁽²⁾

The Secretary of State for Education and Science began to hint at what might be described as the binary policy in embryonic form within a week of his announcement that the government did not intend to create any more new universities for about another ten years. Addressing a meeting of the Association of Principals in Technical Institutions Crosland argued,

"It is most important that broad agreement shall be reached as quickly as possible about the long term role and objectives of the colleges in higher education. This is the essential preliminary to confident and effective planning ... I am certain that it would not be in the national interest or in the interests of the colleges themselves if they were to set out to duplicate the provision in the universities. Instead of imitating the universities, they must serve educational and social purposes that the universities cannot meet or meet as effectively."⁽³⁾

He then went on to outline three groups of students which the technical colleges were to assume responsibility for: full-time advanced-level students of university standard but who would be more suited to the vocational type of education offered in the technical colleges; full-time students below degree-standard, and part-time students both at and just below degree standard.⁽⁴⁾

Crosland then concluded,

(1) Boyle, (1979), *op.cit.*, p.16.

(2) H. Kogan, The Politics of Education (Penguin Books Ltd., Harmondsworth, Middlesex, 1971), p. 105.

(3) Education, Vol 125, 5 Mar. 1965, p.429.

(4) ibid.

"This rather than the development in parallel with the universities is the logic of the Robbins recommendation that further education should continue and expand as a separate sector of higher education and indeed the logic of the establishment of a separate degree system under the C.N.A.A."(1)

There then followed further pointers towards the exposition of an explicit binary policy in a debate on higher education in the House of Commons in March 1965. The debate was opened by Boyle who came down firmly in support of the government's announcement on the universities made the previous month,(2) and in favour of Crosland's address to the A.P.T.I.(3) Both Boyle and Crosland in the course of the debate, also gave considerable praise to the recent A.T.T.I. pamphlet on higher education within the further education system;(4) whilst Crosland looked forward to discussions on the development of the technical colleges in the near future.(5)

Quite clearly the binary policy was not a party issue but supported and forwarded by those who felt that the Robbins Committee had been at best mistaken about the local authority contribution to higher education. Both Boyle and Crosland accepted the need for a diversity of institutions, the universities on the one hand, and the teacher training colleges and technical colleges on the other. Interestingly both Boyle and Crosland have referred to the arguments put forward on various occasions by Tyrell Burgess on this issue: Boyle has indicated his agreement with Burgess on the responsiveness of the local authority colleges to local needs - a responsiveness which the universities do not and are not expected to have,(6) whilst Crosland has argued,

(1) ibid.

(2) House of Commons, Vol 709, 25 Mar. 1965, col 754.

(3) ibid., col 761.

(4) The Future of Higher Education within the Further Education System, A.T.T.I., (March 1965).

(5) House of Commons, Vol 709, 25 Mar. 1965, col 775.

(6) A point made by Boyle in interview on 29 Apr. 1980.

"Tyrrell Burgess has put the case better than anyone else in his various writings - the need for institutions which cater not only for the traditional full-time degree courses, but for the part-time students, the sub-degree course, and the kind of education which has its roots in the technical college tradition."(1)

It was in his much celebrated speech at Woolwich Polytechnic⁽²⁾ on 27th April 1965, on the 75th anniversary of the college, that Crosland finally announced the government's intention of introducing a binary policy for higher education. He began by agreeing with the Robbins Committee on the need for a system of higher education, but went on from there to outline a very different system from the one advocated by that Committee: a dual system based on the twin traditions of the universities and the technical colleges. These traditions Crosland characterised as belonging to the autonomous and public sectors of higher education respectively.

Crosland put forward four main arguments in favour of this dual system: (a) the growing demand for professionally oriented courses in higher education - a demand which cannot be met by the universities, hence the need for a separate sector with a distinct tradition and outlook; (b) the undesirability of a single system based on a ladder concept which would be likely to prove demoralising to institutions outside the university sector; (c) the need for a sector of higher education directly under social control and responsive to local needs, and (d) the need for a vocational sector of higher education on a par with the universities in terms of status and prestige but providing the professional and vocational courses a modern society depends upon for its survival.

(1) Kogan, (1971), op. cit., p. 195.

(2) A copy of Crosland's Woolwich Speech can be found as an Appendix in J. Pratt and T. Burgess, Polytechnics: a Report, (Pitman Publishing 1974).

Finally Crosland went on to spell out in more detail exactly what the function of the public sector should be. On the one hand the public sector was to complement the work done in the universities by providing full-time and sandwich courses of degree standard, but with a more vocational bias than the universities. On the other hand it was to develop courses which traditionally fell outside the scope of the universities of an advanced level but below degree standard. Finally, the technical colleges were to cater for the large numbers of part-time students requiring advanced-level courses. (These three groups were the same as those Crosland had outlined to the A.P.T.I. earlier in the year).

This speech, in a reduced form, and along with a cover note, was subsequently published as Administrative Memorandum No. 7/65,⁽¹⁾ and issued to the local education authorities.

By way of conclusion then, whilst Crosland's Woolwich Speech marked the government's acceptance of the binary policy, and whilst the D.E.S. was ultimately responsible for formulating the policy in the way it did, it would be quite unfair and indeed untrue to describe this policy as coming like a bolt out of the blue. As this section has shown, by the time the policy was announced many of those most intimately concerned with the development of the local authority sector of higher education had already signalled their support for the line the government was taking.

D. Response to the Binary Policy

The response to Crosland's Woolwich Speech was certainly mixed, and even amongst those who supported the general policy line there was a certain amount of misgiving at the way it had been expressed. As Crosland himself later admitted,

(1) The Role in Higher Education of Regional and Other Technical Colleges Engaged in Advanced Work, A. H. No. 7/65, D.E.S. (6 May 1965).

"I said to the press when I first went to Curzon Street that I wouldn't make any pronouncements on major policy for the first six months, and I broke the rule by making the Woolwich Speech.(1) I think, looking back, that officials should not have advised me to make a major speech on the subject at that time. But of course the ultimate fault was mine for accepting the advice. I then had only a superficial knowledge of the subject, and every change I made in the draft of the speech made it worse. Incredible. It came out in a manner calculated to infuriate almost everybody you can think of, and in public relations terms it did considerable harm to the policy."
(2)

Certainly Boyle has said that he would not have used the same nomenclature as Crosland did in introducing the binary policy: he would not have described the two sectors as the 'autonomous' and the 'public' sectors. Rather he would have liked the binary policy to have been defined as having two centres of gravity. On the one hand there would be the universities which are discipline-oriented, and on the other hand the technical colleges providing vocational and professionally-biased courses in which the application of knowledge is all important.(3)

Both in the universities and in the technical colleges there was concern at the way the binary policy had been expressed in Crosland's Woolwich Speech. The C.V.C.F., for example, in expressing its views on the speech to the U.G.C. made the point that,

"The speech draws undesirably rigid divisions between the university and non-university sectors."(4)

It also added,

"That the Committee assumed that the Secretary of State's reference to the development of a non-university sector of higher education 'directly responsive to social needs' was not intended to imply that the universities were not responsive to such needs."(5)

(1) In interview on 19 Feb. 1980 Robinson suggested that Crosland was rushed into making the Woolwich Speech because he was under pressure to decide on the future of the Hatfield, Lanchester and Brighton Technical colleges which were faced with the possibility of merging with neighbouring universities.

(2) Kogan, (1971), *op.cit.* p. 193.

(3) Boyle, in interview on 29 Apr. 1980.

(4) C.V.C.F. Minutes, Minute 265, 21 May 1965.

(5) ibid.

These views were also echoed by two of the former C.A.T. Principals. E. C. Edwards, the Principal of Bradford Institute of Technology, argued that the binary policy,

"Presupposes a distinction between the vocational and the fundamental in technological education which belongs to the 19th century rather than the century of what another member of the Government has called 'the second scientific revolution' ... It may be a partly justified criticism of some university departments that they are insufficiently concerned with the application of knowledge and still obsessed with the pursuit of knowledge for its own sake. On the other hand, this is certainly not true of many of them and is wholly foreign to the philosophy of the ten new universities evolving from the C.A.Ts. The point is not to freeze the gap between the study of science and its application, but to close it."(1)

P. Venables reiterated this criticism of the Woolwich speech, arguing that it largely ignored the contribution which the C.A.Ts made to higher education in general, and to sandwich courses in particular.⁽²⁾ He also took exception to the stress which Crosland laid upon the social responsiveness of the public sector and the implication that the universities were unresponsive to social needs⁽³⁾ and went on from there to suggest that increasingly the public sector was being favoured at the expense of the universities: in terms of the increase in student numbers in each sector; over the fees issue - university fees were to be trebled whilst technical college fees were to remain unchanged - and in respect of the move on the part of Parliament to strengthen the public accountability of the universities. In the light of these developments Venables speculated upon the possible evolution of 'state universities' in the public sector.

G. S. Atkinson, Principal of the Rugby College of Engineering, also criticised the Woolwich speech for drawing too rigid a distinction between the universities and the technical colleges. After all, he

(1) Education, Vol 126, 5 Nov. 1965, pp 931-2.

(2) P. Venables, Dualism in Higher Education, Universities Quarterly, Vol. 20, (Dec. 1965), p.19.

(3) ibid.

argued,

"In what ways does the work of the colleges differ from the work of the university sector?"(1)

Such a reaction on the part of a Principal of one of the large regional colleges was hardly surprising. In February 1965 any hopes the regional colleges had had of being elevated to universities had seemingly been placed in cold storage for the next ten years. Now, with the introduction of the binary policy their chance of attaining university status was disappearing altogether. To be condemned to the non-university sector was, to many in the large regional colleges, to be condemned to the second division whatever trappings the binary policy was dressed up in. Indeed in another letter Atkinson argued that the public sector colleges were never likely to find themselves in a comparable position to the universities for a number of reasons. In particular the colleges in the public sector could not expect to enjoy the same degree of academic freedom as the universities because their courses had to be approved by an external body - the C.N.A.A. - and their courses also came under the scrutiny of the Regional Advisory Councils whilst the universities do not have to report their courses to anybody. Moreover, staff salaries were expected to be lower in the public sector than in the universities, and the staff in these colleges would be cut off from the mainstream of higher education.(2)

The binary policy was also attacked by members of the Robbins Committee. Mr. L. Elvin, Director of the Institute of Education of the University of London, for example, declared,

(1) Education, Vol 125, 7 May 1965, p.937.

(2) Education, Vol 126, 16 July 1965, p.160.

"Either this policy has been thought up in a hurry or we have been made monkey's of,"(1)

and went on to criticise it on the grounds that it had not been carefully considered by a Committee in the way the Robbins Committee's own recommendations had. He asserted,

"We are not saying that no Government should consider any policy until we personally have had a chance to comment, but I do say that it makes nonsense of our democratic procedures to appoint people to consider all possible policies and then, hand on their report, to adopt one that had never been subjected to this supposedly necessary process at all."(2)

Lord Robbins, too, was very critical of the binary policy, a policy which he regarded as creating rather than minimalizing barriers between institutions. Referring to the Report bearing his name he argued,

"We recognised the need for diversity both of academic and of administrative forms. But we conceived of the system as unitary, in the sense that it was flexible and evolutionary, and that it contained no unnecessary barriers or limitations on growth and transformation. We emphasised the importance of the possible transfer of individuals and institutions from one sector to another."(3)

Robbins also argued that the distinction between the two sectors would not - nor could not - hold now that the C.A.Ts had been transferred to the university sector. As he clearly perceived,

"In spite of some protests from the romantics and the traditionalists, technology has long been part of the university system."(4)

Moreover, he was quite non-plussed at the role which the C.N.A.A. was expected to play under the binary system⁽⁵⁾ - a role which had not been envisaged in the Robbins Report:

"We proposed the C.N.A.A. not as a symbol of ultimate divorce ... but rather as an instrument for providing the possibility of

(1) T.E.S., 5 Nov. 1965, p.956.

(2) ibid.

(3) Lords Debate, Vol 270, 1 Dec. 1965, col 1259.

(4) ibid., col 1260.

(5) In interview on 19 Feb. 1980 Robinson said that the recommendation to create the C.N.A.A. was the most surprising part of the Report and that Lord Robbins had subsequently acknowledged that the Committee had not foreseen how it might be used.

degrees of university standard for the many who for years to come would not be able to obtain entry to university institutions."(1)

However, as has already been indicated, the binary policy received a mixed reception and the criticism referred to above was met by praise and support from other quarters. Thus with the exception of some of the larger regional colleges, those in the technical colleges generally welcomed this development. At least it provided them with a clearer idea of the sort of role the colleges were expected to play in the next few years.(2) It was also welcomed by the A.T.T.I. as might have been anticipated from the foregoing section. Robinson explained why the A.T.T.I. supported the binary policy:

"The A.T.T.I. Panel which prepared the discussion document on higher education was faced with no choice between a unitary system and a binary one but between a planned and coherent development outside the universities and an unplanned conglomeration."(3)

Certainly this was a pertinent point: the Robbins Committee had simply envisaged the transfer of some of the regional colleges to the university sector at a later, undetermined date. There was no plan for these colleges in the interim period.

The A.E.C. also welcomed the introduction of the binary policy on which it passed the following resolution:

"... The Association fully supports the concept of a binary system in higher education and urges committees in membership to secure the fullest development of the sector of higher education for which they will be responsible under these arrangements."(4)

However, that should not be allowed to hide the fact that at least Alexander had a degree of anxiety about introducing the policy because of the way some technical colleges were administered. He

(1) Lords Debate, Vol 270, 1 Dec. 1965, col 1258-9.

(2) T.E.S., 11 June 1965, p.1849.

(3) Education, Vol 125, 7 May 1965, p.947.

(4) Education, Vol 126, 9 July 1965, p.103.

felt that some L.E.As would have to allow their colleges' governing bodies a greater degree of independence than they had done hitherto.⁽¹⁾

The A.E.C.'s support for the binary policy was easily understood. After all, the local authorities were adamant that they should continue to exert control over a part of higher education. More interesting, perhaps, was the response of the U.G.C:

"The Committee fully endorse the policy of recognising and supporting a binary system of higher education in this country. They accept the consequences which flow from this policy - in particular the continued provision of a proportion of degree-level work in a wide variety of non-university institutions of further education, and the need to build up the authority and prestige of the C.N.A.A. and of its degrees. They recognise that this means that proposals for the incorporation in universities of institutions of further education - or parts of such institutions - or for the 'attachment' of such institutions to universities for degree purposes should, in principle, be discouraged."⁽²⁾

The reason for the U.G.C.'s support for the binary policy was because it felt that it was a device to protect the universities. The Woolwich speech had followed closely upon the heels of the government's announcement that no more new universities would be created for about the next ten years. But for the exposition of the binary policy, argued Sir John Wolfenden, Chairman of the U.G.C., the statement on the universities was likely to have led to competition amongst the larger technical colleges to become associated with neighbouring universities.⁽³⁾ Quite clearly the U.G.C. did not want this to happen, as may be inferred from their response to the Woolwich speech.⁽⁴⁾

By way of contrast the C.V.C.P. was far less enthusiastic both about the terms used in the Woolwich speech and about the general

(1) Education, Vol 125, 28 May 1965, p.1092.

(2) C.V.C.P. Minutes, Minute 325, 16 July 1965.

(3) ibid, Minute 4, 24 Sep. 1965.

(4) This point was also made by Boyle in interview on 29 Apr. 1980.

philosophy underlying it: the C.V.C.P. feared that the development of the public sector would have a detrimental effect upon the amount of money which the government would make available to the universities in the form of capital grants. (1)

The binary policy, as has been shown above, evoked a multiplicity of reactions, both critical and otherwise. Whether it would have given rise to such responses had Crosland delayed delivering his speech until he was more au fait with the arguments the policy entailed is difficult to say. Certainly the policy might have been put over in somewhat less provocative terms, but even then it might still have been expected to have aroused protests from those groups which felt their interests were being threatened, namely the regional colleges and the C.V.C.P.

E. Some Concluding Remarks on the Binary Policy

The binary policy seems to have lent itself to attack from all directions. Reference has already been made to the way it was seen as drawing too rigid a distinction between the universities and the non-university sector; and in the mid-1960s this aspect of the policy seemed compounded by the fact that simultaneously the government was trying to introduce a comprehensive system of education at the secondary level, and thus appearing to be letting down the barrier at 11+ but erecting another at 18+. (2)

Crosland refuted this criticism in a speech made at Lancaster in January 1967: he pointed out that whilst at 11+ the whole age-group goes on to secondary education, at 18+ only a small proportion of the age-group go on to higher education. (3)

(1) C.V.C.P. Minutes, Minute 265, 21 May 1965.

(2) Education, Vol 126, 9 July 1965, p.104.

(3) A copy of Crosland's Lancaster Speech made at Lancaster University on 20 Jan 1967 can be found in T. Burgess and J. Pratt, Polytechnics: A Report (Pitman Publishing, 1974).

Others⁽¹⁾ regarded the binary policy as a strategy to attack the universities and to change them from the outside.

Simultaneously there were those who saw the binary policy as a means of protecting the universities - indeed the U.G.C., as has been noted above, was of this opinion. However, such a view has been vigorously denied by Weaver. He agreed that one of the consequences of the binary system had been to defend the exclusiveness of the universities but it had not been the purpose of the policy. Weaver viewed the universities as scholarly institutions and as such, contrary to the Robbins Committee, he saw them as unsuitable institutions for mass higher education. Mass higher education must either distort the scholarly functions of the universities or indeed mass higher education might be distorted if concentrated in the academic environment of the universities.⁽²⁾

The binary policy provided a way out of this potential dilemma: on the one hand there were the universities, and on the other the colleges of further education and the teacher-training colleges. The former were to remain the centres of academic excellence, whilst the latter were expected to build upon their tradition of catering for those vocationally and professionally oriented. The hope was that the two sectors might be different but equal. In Weaver's own words,

"Higher education should successfully perform a multiplicity of functions."⁽³⁾

In short, contrary to the view of the Robbins Committee, higher education was not to be seen as synonymous with a university education.

(1) Robinson, in interview on 19 Feb. 1980, said he took this view.

It was not shared by Crosland.

(2) Weaver, in interview on 29 Feb. 1980.

(3) Sir Toby Weaver, op.cit., p.12.

F. Prentice's Advisory Group on Higher Education

Shortly after Crosland's Woolwich speech the D.T.S. began to deliberate on the pattern that these colleges in the public sector should take, and Crosland set up a small advisory group under the chairmanship of R. Prentice, Minister of State with responsibility for higher education, to discuss and amend the policy statements emanating from the Department on this matter. These policy statements introduced the concept of the Polytechnic Institutes.

The advisory group was made up largely of persons from the local authorities and the technical colleges including Sir Harry Pilkington,⁽¹⁾ Sir William Alexander,⁽²⁾ A. Clegg,⁽³⁾ L. Russell,⁽⁴⁾ C. A. Hornby,⁽⁵⁾ E. Britton,⁽⁶⁾ E. E. Robinson,⁽⁷⁾ and at least one representative from the A.P.T.I. It consisted mainly of people whom Crosland would have listed amongst his friends.⁽⁸⁾

The group was set up at a time when participatory government and consultation were beginning to be important.⁽⁹⁾ To that extent it might thus be seen as something of a political move. It is also fair to say that Crosland genuinely wanted advice.⁽¹⁰⁾ and he was fond of obtaining it through the medium of just such a small private group.⁽¹¹⁾ In short,

"It was Crosland's style of operation."⁽¹²⁾

(1) Chairman of Pilkington Brothers Ltd. since 1949, and Chairman of the N.A.C.E.I.C. from 1956.

(2) Secretary of the A.E.C.

(3) Education Officer of the West Riding County Council.

(4) Chief Education Officer, Birmingham.

(5) Secretary of the N.A.C.E.I.C.

(6) A.P.T.I. representative.

(7) A.P.T.I. representative.

(8) A point made by Weaver in interview on 29 Feb. 1980.

(9) *ibid.*

(10) *ibid.*

(11) A point made by Russell in interview on 9 May 1980.

(12) Robinson, in interview on 19 Feb 1980.

As to the influence that might be attributed to this body, that is a much more difficult question to answer. Indeed, the influence of any such small group must always remain somewhat intangible.

It would seem that as far as the actual formulation of the policy was concerned, its influence was but marginal. The broad framework of the policy to which the Prentice Advisory Group addressed itself had already been laid down in the D.E.S. It merely, therefore, affected the details of the policy.⁽¹⁾ Thus in one of its policy statements the D.E.S. began by admitting,

"The Group's discussions have brought out more sharply the political and administrative difficulties involved in the Polytechnic Institute concept,"⁽²⁾

and went on to acknowledge that it accepted the undesirability of riding rough-shod over existing local authority boundaries:

"The attractions of the concept largely depend upon the extent to which it would provide an effective and generally acceptable method of concentrating economic and academic resources in coherent academic communities. In the light of the discussions it has, however, become increasingly doubtful whether these objects would be achieved. It is certain that some of the proposed 'marriages' would be violently opposed by authorities and colleges which would have to accept subordination to another authority or college. In some cases the academic relationships would be highly artificial, loyalties would be divided, and there would be little or no prospect of building up a meaningful academic community. Constant friction would be bound to occur where the effect was to hold back developments sought by associated authorities and colleges, but there would also be a danger that in the interests of goodwill those responsible for the central college would agree to uneconomic and educationally unnecessary expansion at associated colleges."⁽³⁾

However, over and beyond this the advisory group fulfilled two further functions. Firstly, through its work the group made Crosland feel confident that he had support for his policy;⁽⁴⁾ and secondly, it committed members of the group to that policy.⁽⁵⁾ The importance

(1) Russell, in interview on 9 May 1980.

(2) A.E.C. File A317, Memorandum on the Future Pattern of Higher Education within the Further Education System, D.E.S. Paper No. 5.

(3) ibid.

(4) Point made by Weaver in interview on 29 Feb 1980.

(5) Point made by Robinson in interview on 19 Feb 1980.

of this last point should not be under-estimated. It was possibly quite clear to Crosland, and indeed to the officials in the D.E.S. that the concept of the Polytechnics would not be acceptable to certain of the technical colleges' teachers' unions at least. If the D.E.S. could get the support of certain key individuals for its policy it might have felt it was a step nearer to its successful implementation.

G. A Plan for Polytechnics and Other Colleges

(i) The 1966 White Paper

Within little more than a year since his Woolwich Speech Crosland published a White Paper which announced the government's intention to set up a number of Polytechnics.⁽¹⁾

It began by giving a short account of developments and changes within the Further Education system since 1956. Thus using the recommendations of the recent Pilkington Report⁽²⁾ in support of its argument, went on to state its intention of

"Concentrating full-time courses of higher education, as far as is practicable, in a limited number of strong centres with the staff, buildings and equipment needed both to achieve and maintain high standards, and to provide the right setting for an active community of staff and students."⁽³⁾

This was the nub of the Polytechnic concept. However, the Polytechnics were not expected to provide just full-time advanced-level courses. Instead they were envisaged as 'comprehensive' institutions⁽⁴⁾ catering for students both at and below advanced level as defined in the Robbins Report, on full-time, sandwich, and part-time courses.

(1) A Plan for Polytechnics and Other Colleges: Higher Education in the Further Education System, D.E.S. (Cmd 3006) May 1966.

(2) The Pilkington Report argued for the concentration of courses to achieve the most effective use of resources. This report led to the publication of Circular 11/66 'Technical Colleges Resources, Sizes of Classes and Approval of Further Education Courses, 12 Apr. 1966, D.E.S.

(3) A Plan for Polytechnics and Other Colleges, para 3.

(4) ibid, para 4.

Rather curiously these somewhat amorphous institutions were only expected to develop in the long term to 2,000 full-time students plus part-time students from the area in which they were located.⁽¹⁾

When the White Paper was published the Secretary of State had not come to a final decision about which institutions should become Polytechnics. However preliminary proposals for 28 Polytechnics were attached to the White Paper as an Appendix, and the White Paper also indicated the factors which would be taken into account in coming to a final decision. These were (a) the likely demand for higher education, (b) the requirements of industry, (c) the availability of residential accommodation for students, and (d) the desire to establish a balanced system of higher education in different fields of study over the country as a whole.⁽²⁾ The intention was to decide on a number of Polytechnics and not add to that list for about the next ten years.⁽³⁾ That way the colleges would all know where they stood, and it would also help the Regional Advisory Councils and the D.E.S. in the allocation of resources.⁽⁴⁾

Expounding the Polytechnic principle constituted the major part of the White Paper. Fleeting reference was made to full-time higher education at other colleges - where the emphasis was on it continuing only in instances when the Polytechnics or other specialist centres could not meet particular needs⁽⁵⁾ - and also to part-time education. In the latter case the White Paper gave grudging recognition to the need for a wider distribution of part-time education on account of

(1) ibid., para 17.

(2) ibid., para 12.

(3) ibid., para 14.

(4) ibid.

(5) ibid., para 22.

travelling difficulties, but where possible part-time higher education was to be carried out in or in close association with a Polytechnic. (1)

Interestingly the White Paper made no reference to the role of research in the Polytechnics. This came later in Administrative Memorandum 8/67:

"The main responsibilities of the Polytechnics will be as teaching institutions, but it will be necessary to make the provision for research which is essential to the proper fulfilment of their teaching functions and the maintenance and development of close links with industry, particularly local industry, so as to promote the rapid application of the results of research to its problems." (2)

(ii) Response to the 1966 White Paper

The White Paper evoked considerable criticism at two distinct levels. Firstly the document itself was criticised as inadequate and inconsistent, and for being vague in key places. In particular E. E. Robinson denounced it as a

"Technically incompetent document," (3)

and later summarised his criticism of it as follows:

"The statistical basis of the White Paper was unashamedly vague and its financial basis was not apparent. The number of students in the selected colleges following courses now regarded as included in higher education was available neither in the White Paper nor in any publication, official or unofficial. The policy was for the period 1966-76 but the projected student numbers were given only for 1970-71 and these only for full-time students in the old (Robbins) definition of higher education. The student capacity of the selected colleges was also apparently unknown. No estimate of the cost of the proposed exercise has been published." (4)

Secondly, as to the actual policy outlined in the White Paper, this encountered criticism from three main groups. First of all, as Crosland had anticipated, (5) the A.T.T.I. objected to the

(1) ibid., paras 23 and 24.

(2) Administrative Memorandum 8/67, Appendix B, para 1 (published earlier as Notes for Guidance).

(3) E.E.S. 11 Nov. 1966, p.1160.

(4) E. E. Robinson, The New Polytechnics (Penguin Books, 1968) p.38.

(5) E.E.S., 27 May 1966, p.1670.

rigidity that the policy would introduce into the pattern of the technical colleges:

"... The general approach is essentially static. A certain number of Polytechnics are to be designated forthwith and then no more for ten years (Paragraph 14). Existing courses in other colleges will be allowed to run down as the Polytechnics develop (Paragraph 21); and colleges not already engaged in full-time higher education will not be allowed to embark upon it (Paragraph 22). This is a restrictive approach and is not one that should be adopted towards what is probably the most dynamic development in the whole of English education at the present moment. The White Paper pays tribute to the expansion in higher education in recent years as a remarkable achievement and refers to the foresight and vigour of the colleges and the local education authorities in laying firm foundations for the future whilst at the same time securing an improvement in standards (Paragraph 5). It is a strange follow up to such a tribute to embark upon a policy of restricting development to a limited number of colleges and deliberately stifling development elsewhere."⁽¹⁾

Such opposition on the part of the A.T.T.I. was understandable: the A.T.T.I. represented teachers in the whole range of technical colleges, and it was obvious that with respect to its members in the colleges providing less advanced level work that it would object to this policy of concentration. The status of the colleges still depended upon the extent to which they offered advanced-level courses and under this policy colleges offering less advanced courses were destined to continue in this way in the future. This would obviously affect the status and prestige of the colleges.

Secondly there was considerable opposition from the Art Colleges about their being merged with the Polytechnics. To the Art Colleges this marked the failure of what they were trying to achieve.⁽²⁾ It was also significant that, up until the publication of the White Paper, the Art Colleges had not been in any way involved with these latest developments in government policy, and had not even had a representative among Prentice's Advisory Group.⁽³⁾

(1) A Plan for Polytechnics - A Commentary, A.T.T.I. (1966) para 4.

(2) In The New Polytechnics, p.59. Robinson points out that for the art colleges association with the technical colleges was linked with failure.

(3) T. Burgess and J. Pratt, (1974), op.cit. p.100.

Finally, there was opposition to the polytechnic concept from the universities. For example, Dr. W. Adams, Director of the London School of Economics, argued that parity of esteem between the two sectors was a myth, and that, in retrospect, it might have been better to have expanded existing universities rather than to have created 'mini-universities'.⁽¹⁾

The policy also came under attack from the C.V.C.P. In its quinquennial report for 1962-67 the Committee accepted that the universities and polytechnics should try and forge links with each other wherever possible.⁽²⁾ However, the C.V.C.P. went on from there to express certain doubts about the very concept of a Polytechnic arguing that by concentrating on advanced-level work the colleges would be setting up in competition with the universities instead of providing a complement to them.⁽³⁾

The C.V.C.P. also pointed out that there had been a swing in demand away from courses in science and technology to ones in the arts and social sciences - courses which the universities rather than the polytechnics could best provide.⁽⁴⁾

This opposition to the Polytechnics on the part of the universities was indeed significant: it reflected not just dislike and doubts about the policy itself but also an unease in university-state relations at that time. This was now exacerbated by the fear that the government was possibly intending to develop the polytechnics as rival institutions to the universities. In 1962 there had been a disagreement between the government and the U.G.C. over the level of

(1) T.F.S. 8 Sep. 1967, p.392.

(2) Report on the Quinquennium 1962-67, C.V.C.P. (Aug. 1968) para 35.

(3) ibid.

(4) ibid., Appendix C, para 7.

the recurrent grant for the universities.⁽¹⁾ Added to this was the decision to limit the student target figure for 1966 to 150,000⁽²⁾ - despite the Robbins Report having stressed that it was a minimum estimate, likely to be exceeded. With the announcement in 1965 that no more new universities, with possibly one exception, were to be created in the next ten years, it was hardly surprising that the universities should regard the 1966 White Paper with intense suspicion.

(iii) The Establishment of the Polytechnics

When the government published its White Paper in May 1966 it had not decided exactly which institutions should become polytechnics. However, a preliminary list attached to the White Paper in the form of an Appendix looked forward to some 28 Polytechnics developed out of 50 or more regional colleges, art colleges and other institutions in the public sector.

It was not until about a year later that Crosland confirmed the list of Polytechnics which, in the interim, had increased in number by two. The reasons for this delay were two-fold. In the first place considerable time was taken up by deputations to the Secretary of State from various local authorities and their supporters requesting the designation of more than the 28 Polytechnics originally suggested. The D.E.S. received a dozen deputations but only two were successful: the Secretary of State invited the Staffordshire and Stoke-on-Trent L.E.As to submit a scheme for a polytechnic formed from the North Staffordshire and Staffordshire Colleges of Technology, and agreed that there was a need for a further polytechnic in the North-West which eventually was to lead to the creation of Preston Polytechnic.⁽³⁾

(1) Boyle (1979) op.cit. p.9.

(2) ibid.

(3) Notes for Guidance, Parliamentary Statement by the Secretary of State for Education and Science, 5 Apr. 1967.

Secondly the art colleges made an attempt to extricate themselves from the proposed mergers with the technical colleges.

However, despite their case being supported by virtually all the national bodies concerned with art education, this move failed.⁽¹⁾

Thus in April 1967 the D.E.S. asked the L.E.As to submit plans for the development of thirty Polytechnics. This invitation was accompanied by quite detailed recommendations on the machinery of government to be adopted in these colleges in the form of 'Notes for Guidance.'⁽²⁾

(iv) Why did the Government introduce its Policy for the Polytechnics?

At Lancaster University in January 1967 Crosland made what has been called his Lancaster speech. It opened as follows:

"I must begin by mentioning a severely practical reason for this policy and the system of higher education that goes with it. That is that the system already existed. I did not invent it; it had been developing steadily since the turn of the century or earlier. Alongside the universities we had the training colleges under local authority or denominational control; and we had a strong and growing sector of higher education in F.E."⁽³⁾

With reference to the Further Education sector, and particularly the Polytechnics Crosland then outlined a number of arguments in support of full-time courses of degree standard in the technical colleges. Firstly he argued that it was educationally advantageous to have, in addition to the universities, institutions of higher education in which full-time, sandwich and part-time students were all present. Secondly, he maintained that full-time degree-level work had historically had an important part to play in the further education sector, providing opportunities for educational and social mobility.

(1) Robinson, op.cit., pp.40-41.

(2) This was later circulated as Administrative Memorandum 8/67.

(3) For the Lancaster speech see J. Pratt and T. Burgess, Polytechnics, A Report, Appendix.

Finally he suggested that by providing full-time degree work in the further education colleges this was a way of avoiding a social and educational division at 18+.

Clearly Crosland was at pains to justify the development of higher education in the public sector. However, what he did not do was explain the government's decision to set up the Polytechnics. Such a development was, to a certain extent, to run contrary to the tradition of the technical colleges. Whilst some technical colleges offered more advanced-level courses than others, a distinct and separate category responsible for developing full-time degree-level work had not been established in the colleges until 1956 - namely the C.A.Ts - and even that had proved a short-lived experience. Hitherto the situation in the colleges had been much more fluid which suited the way in which they were expected to respond to local needs and those of the whole range of students from the craftsman to the technologist. In short, it might be argued that the policy for the polytechnics, was not an inevitable development of the binary policy. There was no implication in the binary policy, nor in the history of the technical colleges, that advanced-level work should be concentrated in just a few colleges which were to be distinguished from the rest.

Rather it seems as if the Polytechnics were established for two main reasons. In the first place, as the White Paper itself acknowledged, it was claimed to be more economic to concentrate advanced-level courses in just some of the colleges.⁽¹⁾ However, the White Paper's assertion that the wide distribution of courses of higher education involved an uneconomical use of resources was not backed up by any data. Even so, it seems that the D.E.S. accepted this assumption and accordingly favoured a policy of concentration.

(1) A Plan for Polytechnics and Other Colleges, para 1.

Secondly, this policy which clearly emanated from within the D.E.S., under the guise of economic expediency, might also be seen as an attempt by the Department to carve out for itself a sector of higher education within the public sector which was to be under its control. This aspect of the Polytechnic's constitution has been indirectly referred to by Weaver:

"As institutions they were socially controlled, both externally in that they were maintained by public bodies, and internally, in that they were conducted by reference to instruments and articles of government subject to the Secretary of State's approval to insure, through the spread of interests represented and the appropriate distribution of functions, that a proper balance was held between the claims of academic freedom and social responsiveness."(1)

Moreover, as has been argued above, whilst in one sense the policy for the polytechnics did not follow from the binary policy, in another sense it might be argued that it did. The binary policy and the introduction of the Polytechnics was part of an overall move to establish more clearly than hitherto the role of the public sector: it was not to be seen simply as a residual category but as a group of institutions charged with fulfilling the nation's requirements in respect of vocational and professional education. It was to be different, in fact complementary to, the university sector. If this public sector was to compete on anything like equal terms with the universities, it might be argued, it needed to have a set of institutions which might, in time, come to be regarded as analogous to them.

There is some evidence to suggest that the D.E.S. would have accepted this argument. Weaver acknowledged that this policy for the polytechnics had been much criticised, but added that those critics had not explained how one could have a binary policy without the polytechnics!(2)

(1) Weaver, op.cit., p.10.

(2) Weaver, in interview on 29 Feb. 1980.

In addition the D.E.S. had not been fully behind the idea of transferring the C.A.Ts to the university sector.⁽¹⁾ The establishment of the Polytechnics could be seen as filling the gap that this transfer had created.

(v) Some Concluding Remarks on the Introduction of the Polytechnics and the Policy-Making Process

As has already been argued in the foregoing sections, the government's policy for the Polytechnics was formulated within the D.E.S. and received only minor modifications at the hands of the Prentice Advisory Group. Two interesting points arise from this as far as the policy-making process is concerned.

Firstly, the introduction of this policy for the polytechnics contrasts with the emergence of the binary policy only about a year earlier. In the case of the polytechnics the D.E.S. made up its mind how it wished to see the pattern of colleges in the public sector develop, and with only a minimum of consultation announced its intentions in the 1966 White Paper. No evidence has come to light suggesting that similar ideas had been expressed elsewhere.

Secondly, the introduction of the policy in this way indicates that in the Further Education sector the D.E.S. can take a much more positive and less consultative role in the policy-making process than it is able to do in other spheres of educational policy-making such as the schools or the universities.⁽²⁾ Indeed, this characteristic of the policy-making process in the technical colleges was exhibited twice within a decade - firstly with the creation of the C.A.Ts in 1956 and secondly with the Polytechnics in 1966.

(1) ibid.

(2) Kogan (1971) op.cit., p.195 - a view shared by both M. Kogan and A. Crosland.

Chapter 7

Conclusion

The purpose of this conclusion is two-fold: firstly, to bring together certain of the key issues and arguments which have underpinned and given structure to this study of government policy-making in the field of higher technological education; and secondly, to comment on this particular case study with reference to the policy-making process as defined in the introductory chapter.

Dealing firstly with the key issues and arguments underlying government policy-making for higher technological education during the period 1944-68 it is necessary to distinguish between what can best be described as first and second order issues. Into the first of these categories come two broad concerns: the need to reorganise on a more rational basis the system of higher technological education; and to expand the nation's output of trained technological manpower.

It is no exaggeration to say that these two often closely inter-related concerns were paramount in the minds of those concerned with policy-making in this field throughout the period under consideration. Indeed as has been shown, even whilst the second World War was still being fought the Board of Education was already aware of the need to clarify and rationalise the relationship that then existed between the technical colleges and the universities.

The close links between these two concerns is reflected in so many of the reports which discussed the future development of higher technological education, implicitly posing the question, 'how best might the expansion of higher technological education take place?' The Percy Report stands out as a major contributor to the debate framed in these terms but there were also several others, particularly in the second

half of the 1940's which addressed themselves to the same problem, namely the Barlow Report (1946), the Report on the Universities and the Increase in Scientific Manpower (1946) and the Report on Colleges of Technology and Technological Manpower (1947), both by the Parliamentary and Scientific Committee, and the Report on Higher Technological Education by the Advisory Council on Scientific Policy, to list but a few.

Whilst there were undoubtedly close links between these two concerns, there were times when one or other of them seemed to predominate. For example with the publication of Circular 305 in 1956 the emphasis moved away from expansion as outlined in the 1956 White Paper to that of trying to rationalise the technical college system. By way of contrast, whilst the Robbins Report was clearly concerned with outlining a newly defined system of higher education, its main thrust was to encourage the further expansion of the whole system of higher education so that it might become accessible to all those able and willing to take advantage of it.

It is from consideration of the question, 'how best might the expansion of higher technological education take place?' that attention is focused on what have here been classified as second order issues. When discussing these it is taken as given that the re-organisation of the higher technological education system and its expansion are both desired goals. They outline the various alternative ways of achieving these ends, and certain problems associated with them.

As far as the universities were concerned the key issue was whether technological education should continue to be provided in the existing universities or whether it should be concentrated in institutes of technology analogous to M.I.T. in the United States. This latter alternative had some powerful advocates including Lord Cherwell in the

late 1940's and Sir John Cockcroft as well as the Robbins Committee in the early 1960's. However whenever this proposal was put forward it met with staunch opposition from the universities at large, and the Committee of Vice-Chancellors and Principals and the U.G.C. in particular, and it failed to find support within the government as a whole.

Whilst the idea of concentrating technological education in just a few universities did not meet with academic approval it should also be noted that the universities expressed considerable ambiguity towards technological education in general, largely on account of its applied nature, which further complicated arguments concerning its expansion. The universities were willing to expand in this field, but not at the expense of pure science or the arts.

Turning to the technical colleges, there were three major issues which influenced the nature of the debate in this sector during these years.

The first of these - and indeed the most significant - was the awards issue. It was one which the Percy Committee chose not to grapple with, and which then found a place in virtually every successive debate, coming under the repeated scrutiny of the N.A.C.E.I.C. until the National Council for Technological Awards was established in 1955, and was eventually transformed into the Council for National Academic Awards in 1964 - the first degree-awarding body to be set up outside the universities.

Secondly, the technical colleges, like the universities, had to face the question as to whether advanced courses in technology should be concentrated in just a few colleges or dispersed more widely throughout the system. To a certain extent a degree of concentration already

existed, but it was strengthened in 1956 by the Ministry of Education's decision to establish the C.A.T.s, and to divide the remaining technical colleges into three categories largely according to the amount of advanced level courses they offered. With the introduction of the binary policy in 1965 it looked at first as if the technical colleges might be moving away from such a hierarchically arranged system. However, it was reaffirmed in 1966 by the introduction of the Polytechnics.

Finally, throughout this period, there was a question mark over the role of the local authorities in the field of higher education. It is interesting to note that both Lord Percy and Lord Robbins expressed disquiet about the role of local authorities in this sphere. However, this attitude was not shared by the Ministry of Education nor by the local authorities themselves: in fact both were very proud of the latter's contribution in this sphere. Far from wishing to see local authority influence diminish, it would seem that the Ministry of Education was keen for it to increase as the size of the technical colleges grew; as their commitment to advanced-level work was encouraged by the policy for the C.A.T.s; and more generally, as increased funds were made available to the colleges. Finally, with the announcement of the binary policy in 1965 the Department of Education and Science could clearly be seen to be reasserting the importance it attached to the local authority sector of higher education.

Turning to an analysis of this particular example of government policy-making in terms of the definition of the policy-making process outlined in the introductory chapter it is important to note two contrasting features of this period. On the one hand it is undeniable that during the period 1944-1963 the nation's output of trained techno-

logical manpower increased substantially. Yet on the other hand, during this same period, the educational system responsible for this increase did not alter in quite so dramatic a fashion. In 1968, just as in 1944, there were still two distinct sectors responsible for the education of technologists - the universities and the technical colleges; and despite all the debates, the numerous reports, and the various developments which have been dealt with in detail in the course of this study there still remained a considerable amount of duplication and overlapping between the two types of institutions. That the expansion of higher technological education was allowed to go ahead relatively unhindered reflected the widespread consensus in support of this during this post-war period. There was no such consensus however over the way this expansion should be catered for in the institutions of higher education.

In 1968 the system of higher education responsible for the education and training of technologists had not changed radically from that which had existed in 1944. Nevertheless it had experienced a number of piecemeal developments, most especially in the technical colleges. An obvious case in point was the elevation of a small number of technical colleges into C.A.T.s and their eventual up-grading into universities, and the later elevation of thirty regional colleges into Polytechnics.

In addition, from this study it may be argued that the system also underwent a rather more subtle change which can only be somewhat inadequately described here in terms of a clearer drawing of boundary lines between institutions. This is not simply a reference to the development of the technical colleges following upon the publication of Circular 305. The point relates to something somewhat less tangible; by 1968 the system of higher technological education was much more

clearly defined than it had been in 1944. Then it had had a fluidity and a flexibility which it perhaps inevitably lost in the course of twenty-five years or so of continuous debate and piecemeal institutional developments.

These limited changes to the institutions responsible for the education of technologists illustrate the incremental nature of this particular policy process. As for seeking an explanation for this, the answer would seem to lie in the system itself. As has already been indicated, there was no consensus amongst those responsible for shaping government policy in this field as to how these institutions should be developed; rather, the divergent aims and interests of those contributing to this policy-making process acted as a major constraint on its development.

Indeed, such an analysis goes a considerable way to explaining why so few developments ensued from all the various reports which considered the future development of higher technological education. For the most part these reports looked towards a single solution - an ideal solution - which ignored the influence and pressure that would be brought to bear by any groups who would be unwilling to accept it and see it implemented. In that respect the Robbins Report provides a fine illustration: the Robbins Report looked forward to a system of higher education which was essentially made up of universities. It took insufficient account of the local authority sector of higher education, and was thus strongly opposed by this sector, and ultimately never implemented. In practice it would seem unlikely that any single solution could prove workable. Given our understanding of the policy-making process, any such development must have wide support in order to be implemented, and is thus most likely to be a compromise solution agreed between competing interests. In short, a successful policy cannot

normally be developed in a vacuum, but must take account of the system on which it rests and from which it wishes to develop.

Whilst any new policy initiative is likely to be constrained by the system in which it is conceived, this particular study of the policy-making process has also shown that individuals can play a significant role in the shaping of policy. In particular there was the example of Antony Part in the Ministry of Education, who was largely responsible for introducing a policy of concentration into the technical college system. This marked a notable turning point for the technical colleges: concentration was a policy that the Ministry of Education had hitherto rejected on the grounds that the selection of a few technical colleges to specialise in advanced-level work would be too embarrassing and difficult for the Ministry to carry out. This shows that an individual can make an important contribution to the way policy develops although it is not often that one comes across such an obvious example. Indeed, this policy-decision as well as that to set up the Polytechnics in 1966 provide interesting examples of centralised decision-making which distinguishes the Further Education sector from other fields of educational policy-making.

The above provides both a summary of the main issues which dominated this field of policy-making during the period 1944-68, and some reflections on the policy-making process more generally in the light of the earlier definition. Following on from these, by way of a concluding point it is perhaps worth noting that the problems of higher technological education are still being debated today. At periodic intervals the cry still goes up for more technologists; and in turn attention is focused on that familiar question, 'how best can the education of technologists be provided for by the universities and the technical colleges?'

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APPENDIX 1The Names of Those Originally Suggested for Membership of the Special Committee on Higher Technological Education

(Source: P.R.O. ED 46/295, R. S. Wood to R. A. Butler (Jan. 1944))

- Sir Lawrence Bragg, Cavendish Professor of Experimental Physics, Cambridge University
- Professor Willis Jackson, Professor of Engineering, Manchester
- J. F. Rees, Principal of Cardiff
- Dr. E. V. Evans, South Metropolitan Gas Company and past President of the Institution of Gas Engineers
- Sir Henry Tizard, President, Magdalen College, Oxford
- W. H. S. Chance, Glass Manufacturer, Smethick, and President of the A.T.I.
- Sir John Kennedy, Deputy Chairman, Electricity Commission
- A. Fitz-Herbert Wright, J.P., Director of the Butterley Company, Derbyshire
- Principal Laws of the Northampton Polytechnic
- Principal Lowery of Walthamstow Technical College
- H. S. Magnay, Director of Education, Leicester
- Principal Myers, Manchester College of Technology

Possibly also -

- Sir Edward Appleton, Secretary, Department of Scientific and Industrial Research
- Sir W. Moberly, Chairman of the U.G.C.

Membership of the Special Committee on Higher Technological Education

(Source: The Report of the Special Committee on Higher Technological Education, Ministry of Education (1945))

- The Right Hon. Lord Eustace Percy (Chairman), Rector of the Newcastle Division of the University of Durham
- Dr. D. S. Anderson, Principal, Birmingham Central Technical College
- Sir Lawrence Bragg, Cavendish Professor of Experimental Physics in the University of Cambridge
- Sir Hugh Chance, Chairman, Smethick Education Committee
- Sir Charles Darwin, Director of the National Physical Laboratory
- Dr. E. V. Evans, Director, South Metropolitan Gas Company
- Mr. B. Mouat-Jones, Vice-Chancellor of the University of Leeds
- Mr. S. C. Laws, Principal, Northampton Polytechnic
- Dr. H. Lowery, Principal, South-West Essex Technical College
- Mr. H. S. Magnay, Director of Education, City of Leicester
- Sir George H. Nelson, Chairman, English Electric Company
- Sir Frederick Rees, Vice-Chancellor of the University of Wales
- Dr. R. V. Southwell, Rector, Imperial College of Science and Technology
- Mr. Fitzherbert Wright, Director, L.N.E.R. and Director, Messrs. Auding-Barford Ltd.

Assessors to the Committee, appointed by the Minister of Education:

Mr. W. Elliott	}	retired, 31 Mar. 1945
Mr. H. B. Wallis		
Mr. F. Bray	}	appointed from 1 Apr. 1945
Mr. H. J. Shelley		

APPENDIX 3The Committee on Scientific Manpower: Membership(Source: Scientific Manpower (Cmd 6824) (H.M.S.O. 1946))

- Sir Alan Barlow, Bart, K.C.B., K.B.E. (Chairman), joint Second Secretary, Treasury, 1938-48
- Sir Edward V. Appleton, G.B.E., K.C.B., F.R.S., Secretary, D.S.I.R. 1939-49, Nobel Prize for Physics, 1947
- Professor P. M. S. Blackett, F.R.S., Langworthy Professor of Physics, University of Manchester since 1937; Nobel Prize for Physics, 1948.
- Mr. Geoffrey Crowther, Editor of the Economist since 1938
- Sir Alfred Egerton, F.R.S., Professor of Chemical Technology, Imperial College of Science
- Sir George Nelson, Chairman and Managing Director, The English Electric Company since 1933; member of Percy Committee
- Professor S. Zuckerman, C.B., F.R.S., Sands Cox Professor of Anatomy, University of Birmingham
- Dr. C. P. Snow, C.B.E., Scientific Assessor
- Mr. A. Gunn, M.B.E., Labour Assessor
- Mr. M. T. Fleet, Secretary
- Mr. E. T. C. Dixon)
- Mr. E. T. S. Clarke) Assistant Secretaries

APPENDIX 4Membership of The Advisory Council on Scientific Policy

(Source: 1st Annual Report (Cmd 7465) Advisory Council on Scientific Policy, July 1948)

- Sir Henry Tizard, Chairman
- Sir Edward Appleton, Secretary, D.S.I.R.
- Sir Alan Barlow, Second Secretary, H.M. Treasury
- Sir Howard Florey, Professor of Pathology, Oxford University
- Sir John Fryer, Secretary, Agricultural Research Council
- Sir Claude Gibb, Managing Director, G. A. Parsons & Co.,
Newcastle-upon-Tyne
- Sir Edward Mellanby, Secretary, Medical Research Council
- Sir Edward Salisbury, Director, Royal Botanic Gardens, Kew,
and Secretary, Royal Society
- Sir Ewart Smith, Imperial Chemical Industries
- Sir Reginald Stradling, Chief Scientific Advisor, Ministry of
Works
- Professor A. R. Todd, Professor of Organic Chemistry,
Cambridge University
- Dr. A. E. Trueman, Deputy Chairman, U.G.C.
- Professor S. Zuckerman, Professor of Anatomy, Birmingham University

APPENDIX 5The U.G.C.'s Estimate of the Potential Size of the Student
Population in the Universities, 1959-60 to 1976-77

(Source: University Development 1957-62, U.G.C. (Cmd 2267),
para 209).

<u>Year</u>	<u>Potential Size of University Population</u>
1959-60	105,200
1960-61	109,700
1961-62	116,900
1962-63	126,000
1963-64	138,700
1964-65	149,800
1965-66	165,000
1966-67	182,700
1967-68	191,500
1968-69	200,000
1969-70	199,300
1970-71	199,400
1971-72	194,500
1972-73	198,200
1973-74	203,600
1974-75	209,900
1975-76	219,100
1976-77	229,400

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APPENDIX 6Full-time Students in the Universities of Great Britain, 1953/54
to 1976/77

(Sources: Statistics of Education, 1965, Part 3, D.E.S. (H.M.S.O. 1966), Table 29; Statistics of Education, 1970, Vol 6, D.E.S. (H.M.S.O. 1973), Table 46; Statistics of Education, 1978, Vol 6, D.E.S. (H.M.S.O. 1981), Table 2).

<u>Academic Year</u>	<u>Student Numbers</u>
1953/54	80,602
1954/55	81,705
1955/56	85,194
1956/57	89,866
1957/58	95,442
1958/59	100,204
1959/60	104,009
1960/61	107,699
1961/62	113,143
1962/63	119,004
1963/64	126,445
1964/65	138,711
1965/66	169,486
1966/67	184,799
1967/68	200,121
1968/69	211,485
1969/70	219,506
1970/71	228,131
1971/72	234,985
1972/73	239,366
1973/74	244,094
1974/75	250,565
1975/76	261,258
1976/77	271,779

APPENDIX 7Distribution of Full-Time Students by Faculties 1956-7 to 1961-2

(Source: University Development, 1957-62 (Cmd 2267), U.G.C. (1964) para 67).

Faculty	1956-57		1961-62		% increase or decrease
	No.	%	No.	%	
Arts & Social Studies	38,747	43.1	48,617	43.0	+25.5
Pure Science	19,899	22.2	28,676	25.4	+44.1
Applied Science	12,496	13.9	17,232	15.2	+37.9
Medicine	12,937	14.4	12,254	10.8	- 5.3
Dentistry	2,733	3.0	3,043	2.7	+11.3
Agriculture & Forestry	1,914	2.1	2,050	1.8	+ 7.1
Veterinary Science	1,140	1.3	1,271	1.1	+11.5
	89,366	100.0	113,143	100.0	+25.9

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APPENDIX 8National Council for Technological Awards: Membership

(Source: Report for the Period December 1955 to July 1957,
N.C.T.A. Appendix 1 (1957))

Governing Body

- Lord Hives (Chairman)
- Sir Harold Roxbee-Cox
- Sir Arnold A. Hall
- Dr. Willis Jackson
- Dr. Idris Jones
- Mr. Geoffrey Loasby
- Dr. A. D. Merriman
- Sir Walter C. Puckey
- Mr. E. L. Russell
- Mr. P. E. Sleight
- Dr. J. S. Tait
- Dr. J. Topping

Secretary

- Mr. F. R. Hornby

Board of Studies in Engineering

- Sir Walter C. Puckey (Chairman)
- Mr. P. E. Sleight (Vice-Chairman)

Nominated By

The A.P.T.I. and
 A.T.T.I.

Member

Mr. H. S. Barlow
 Dr. F. Briers
 Dr. W. A. J. Chapman
 Mr. H. W. Franklin
 Dr. G. Lawton

Nominated By

The A.P.T.I. and
A.T.T.I. (cont.)

Institution of Chemical
Engineers

Institution of Civil Engineers

Institution of Electrical Engineers

Institution of Gas Engineers

Institution of Mechanical Engineers

Institution of Mining Engineers

Institution of Production Engineers

Institution of Structural Engineers

The Royal Aeronautical Society

The Minister of Education

Member

Mr. D. A. G. Reid

Dr. E. C. Smith

Dr. J. S. Tait

Mr. C. Tirrell

Mr. John A. Oriel

Professor R. J. Cornish

Mr. P. E. Sleight

Mr. S. E. Goodall

Mr. G. S. C. Lucas

Mr. J. H. Dyde

Mr. T. A. Crowe

Professor E. Giffen

Professor J. A. S. Ritson

Sir Walter C. Puckey

Dr. S. B. Hamilton

Professor A. R. Collar

Mr. T. E. Goldup

Mr. H. W. Cremer

Mr. J. J. Gracie

Dr. T. E. Allibone

Professor D. G.
Christopherson

Board of Studies in Technologies Other Than Engineering

- Mr. Geoffrey Loasby (Chairman)

- Dr. J. Topping (Vice-Chairman)

<u>Nominated By</u>	<u>Member</u>
The A.P.T.I. and the A.T.T.I.	Dr. F. Aylward
	Dr. F. H. Cotton
	Mr. L. W. Derry
	Mr. T. E. Hall
	Mr. N. M. H. Lightfoot
	Mr. J. V. A. Long
	Dr. J. Topping
	Dr. A. M. Ward
	Dr. G. E. Watts
	Mr. W. W. Wilkinson
Institute of Builders	Mr. H. S. Oddie
Institute of Fuel	Dr. C. Whitworth
Institute of Physics	Professor F. A. Vick
Institute of Metallurgists	Dr. A. D. Merriman
Institution of the Rubber Industry	Mr. G. E. Holmes-Siedle
Institution of Structural Engineers	Sir Donald C. Bailey
Plastics Institute	Mr. W. A. Cook
Royal Institute of Chemistry	Dr. J. W. Cook
Royal Institute of Chartered Surveyors	Mr. Henry W. Wells
Textile Institute	Mr. Geoffrey Loasby
The Minister of Education	Mr. D. E. Woodbine Parish
	Professor J. B. Speakman
	Mr. G. A. Whipple
	Dr. V. E. Yarsley
	Dr. F. Kidd

Appendix 9Membership of the Committee on Higher Education

(Source: T.E.S. 17 Feb. 1961, p.320)

- Professor Lord Robbins (Chairman), Professor of Economics, London School of Economics
- Sir David Anderson, aged 65, former director of the Royal College of Science and Technology, Glasgow, and former principal of the Birmingham College of Technology
- Dame Kitty Anderson, 57, headmistress, North London Collegiate School
- Mr. A. Chenevix-Trench, 41, headmaster, Bradfield College, Berkshire
- Professor J. M. Drever, 50, Professor of Psychology and lately Dean of the Faculty of Arts, Edinburgh University
- Mr. A. L. Elvin, 55, Director of the University of London Institute of Education
- Miss Helen Gardner, professional fellow, St. Hilda's College, Oxford
- Sir Edward Herbert, 68, an engineer and chairman of the governing body of Loughborough College of Technology, and of the Court of Nottingham University
- Sir Patrick Linstead, 58, a chemist, Rector of the Imperial College of Science and Technology
- Sir Philip Morris, 59, Vice-Chancellor, Bristol University
- Mr. H. C. Shearman, 64, Vice-president of W.E.A.
- Mr. R. B. Southall, 60, a Welshman, general manager of the Llandaray (B.P.) refinery, Swansea

APPENDIX 10C.N.A.A. Membership September 1964(Source: T.E.S. 10 July 1964 p.65)

- Sir Harold Roxbee Cox (Chairman)
- Lord Caldecote, Deputy Chairman of English Electric
(Vice-Chairman)
- Mr. W. F. Cartwright, Managing Director, Steel Co. of Wales
- Mr. Michael Clapham, Director, I.C.I.
- Sir James Cook, F.R.S., Vice-Chancellor, Exeter University
- Mr. B. Downs, Head of Department of Mechanical Engineering,
Loughborough College of Advanced Technology
- Miss Helen L. Gardner, Reader in English Literature, Oxford
University
- Dr. D. E. R. Godfrey, Head of Mathematics Department, Woolwich
Polytechnic
- Mr. H. N. Henry, Principal, Paisley College of Technology
- Professor J. Lamb, Professor of Electrical Engineering, Glasgow
University
- Mr. J. Russell Lang, Chairman, G. & J. Weir Ltd., Glasgow
- Dr. Kathleen Ollerenshaw, Manchester City Councillor and member
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- Professor G. D. Rochester, F.R.S., Professor of Physics, Durham
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- Dr. J. Topping, Principal, Brunel College of Advanced Technology
- Mr. D. Vittcovitch, Head of Electrical Engineering Department,
Nottingham and District Technical College

- Dr. G. E. Watts, Principal, Brighton College of Technology
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- Dr. E. G. Woodroofe, Joint Vice-Chairman, Unilever

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