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67 REPORT OF THE COMMISSION ON GRADUATE EDUCATION
To: The Faculty of The University of Chicago  
From: Hanna H. Gray, President  
April 12, 1982  
The Commission on Graduate Education was appointed two years ago in order to review the state of graduate education in the arts and sciences at The University of Chicago and to recommend our best directions for the future.  
I am enormously grateful to the members of the Commission for the thoughtful and comprehensive report which they are now presenting. The Commission has fulfilled its charge with distinction, rigor, and imagination. Its work has provided an exhaustive overview of graduate education at this University against the background of national trends and in the context of our own traditions, strengths, and opportunities.  
The Commission's report gives us a significant foundation for thinking about and for reviewing our graduate programs in the period ahead. Its emphasis on the purposes of graduate training at this University, on the importance of balancing specialization with breadth, on the curricular changes that we should be contemplating, and on the areas we should seek to strengthen defines the central agenda for the faculty in its deliberations.  
I shall ask the Deans to initiate discussion within their respective Divisions by taking two steps: first, to ask each Department and degree committee to meet this spring for preliminary consideration of the report; second, to ask that each department and committee transmit a response by the beginning of the fall quarter.  
During the fall quarter, I expect that discussions will take place also in divisional faculty meetings. In addition, we will arrange one or two larger public forums devoted to the essential recommendations of the Commission and to the responses which have emerged.  
The Commission has made a number of recommendations which we can begin to pursue at once:  
1) For the proposal to establish a system of ad hoc visiting committees, composed both of outside and University members, the Provost and I will have a plan to present by the beginning of the autumn quarter.  
2) I shall ask the Provost to appoint a committee to consider the question of a program in computer science.  
3) I shall ask the Provost also to appoint a committee to consider means of enabling graduate students to take greater advantage of the educational opportunities offered by the professional schools and to consider possible joint degree programs.  
4) Together with the Dean of the Division of the Humanities and the Dean of the College, we shall discuss how to pursue the questions related to basic language instruction and the reconsideration of a Language Institute.  
5) We must give thought to dealing with the misleading and negative reputation of our neighborhood. I shall ask the Vice-President for University News and Community Affairs to present proposals for means of providing more accurate information about Hyde Park for prospective students and faculty.  
6) The informative surveys contained in the report demonstrate the value of acquiring and maintaining more statistical data on our students and applicants. I shall ask the Vice-President and Dean of Students to present a plan for this purpose.  
7) I shall ask the Office of Career Counseling and Placement to consider what steps may be proposed to provide fuller counseling and assistance to graduate students in relation to non-academic careers.  
8) I have asked the appropriate officers of the University to consider and explore alternatives to existing loan arrangements against the possibility of current federal loan programs being modified in the future.  
In departmental meetings this spring, I hope that the faculty will begin to evaluate and to discuss the implications of the report for their individual programs. Each department should consider, in light of its particular needs, the Commission's recommendation concerning the M.A. and current course requirements for the graduate degrees. The departments should consider
also the questions related to financial aid policy and recruitment as these affect their areas. A University committee will be appointed next year to study financial aid policy.

The discussion within departments and divisions and the evaluations to be provided by ad hoc committees will help us to give attention to the problems and opportunities outlined in this report. Faculty in the Divisions of the Humanities and Social Sciences particularly will want also to give special consideration to the recommendation that a “Research Institute” structure be established in these areas. A committee to examine that proposal will be appointed later.

The University is indebted to the Commission on Graduate Education and to its chairman, Keith Baker, for the time and care which they have contributed to the most complex and significant issues which confront a graduate university today. I look forward to the process of discussions and of planning which will enable us to give shape to the University’s leadership as a center of advanced learning.

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REPORT OF THE COMMISSION ON GRADUATE EDUCATION

Chapter 1: Introduction

This Commission on Graduate Education was established by President Gray in the late spring of 1980. Its charge was a broad one: to consider the present state of graduate education at the University of Chicago—and to make recommendations regarding its future shape—in the light of the University's traditional commitment to excellence in research and teaching, and of the anticipated constraints on the organization and development of higher education in the coming decades.

We have attempted to fulfill this charge as comprehensively as possible, and to do so in a way that will engage our colleagues in a continuing process of discussion and debate. A period of dramatic growth in graduate education has ended; an uncertain future lies ahead. As an institution long distinguished by its commitment to the pursuit of graduate education, this University is therefore under a particular obligation to reflect upon the nature of that activity in general, and to evaluate its own graduate programs in particular. In compiling this report, we have found ready evidence that such a process of reflection and evaluation has already begun. We present it now as a contribution to that discussion.

In her letter of appointment to members of the Commission, Mrs. Gray outlined the following charge:

The issues before the Commission are founded in the University's role as a private research university dedicated to the training of scholars and teachers in an environment which emphasizes also a strong liberal arts college and first-rate professional education, and in an institution which sets priority on broad and flexible internal relationships among faculties and programs. The national decline in numbers of Ph.D. students, the uncertainties and constraints of the academic marketplace, the anticipated impact of demographic change, have created a sense of crisis more generally for universities like ours. We need to be looking forward to set our own course and commitment to the forms and possibilities of graduate education that will build on our sense of the future and the strengths we have and hope to have for this university...

The range of questions to be dealt with must include the assumptions underlying and the strengths and weaknesses which characterize our programs and approaches to graduate training. An examination of the policies related to financial aid for graduate students, as well as to the requirements and length of time expected for the completion of graduate degree programs, will be crucial. So, too, will be some discussion of the kinds of purpose and professions toward which graduate programs and training may be directed. The Commission's report should be directed above all to recommending those objectives, and the policies and structures needed to bring them into being, which best express its understanding of this university's commitment to offer the highest quality of graduate training for the period that lies ahead.

Bread as it was, the Commission's charge was not without its limits. Seeking in what follows to address the state of graduate education at the University of Chicago, we have said little of undergraduate education, which now commands a larger proportion of the University's institutional resources and intellectual energies than it once did. This Commission is committed to a vision of the University which regards graduate and undergraduate education as intimately related activities, forming the common responsibility of the faculty in the arts and sciences. Our recommendations regarding graduate education must be understood within the framework of this vision.

The Commission has also said relatively little of the postgraduate education offered in the professional Schools of the University, believing a systematic consideration of that education to be beyond its mandate and powers. We do, however, wish to affirm the importance of those close relationships that now exist between the various Schools and the four Divisions; and we will offer some recommendations regarding ways in which such relationships might be extended.

Finally, despite its self-evident importance for the quality of graduate education and the future of the University as a center of advanced research, we have said little of the library. The continuing strength of its collections has been, and will certainly remain, the sine qua non of scholarly excellence at this University. The difficulties the University now faces in maintaining the strength of the library are enormous; its intellectual life will depend in the long run upon the decisions that are now made in response to them. This Commission has not been able to address these issues in any detail; but we await with interest the results of the evaluations now being carried out by the library administration and urge that continued investment in library resources receive a high priority in the forthcoming campaign for the arts and sciences.
Our report is a relatively long one. In this introductory chapter, we offer a brief review of the Commission's work, conclusions, and recommendations.

A. The Commission's Work

The Commission began its activities by meeting in the late Spring of 1980 with the President, the Provost (then Gale Johnson), and the Vice-President and Dean of Students. It conducted several preliminary meetings during the summer of 1980. In the Fall Quarter of 1980, it began regular weekly meetings which continued with occasional interruptions through the Spring Quarter of that academic year. In the course of these meetings, it met with the Deans of the four Divisions and with other administrative officers of the University, and considered communications received from departmental Chairs and individual faculty members. The Commission also convened a series of open meetings with graduate students. It resumed regular weekly meetings in the Fall Quarter of 1981, in order to discuss sections of its report in draft. It concluded its deliberations in the Winter Quarter, 1982.

To facilitate its work, the Commission also formed a number of internal committees. A Committee on Projects (Stephen Sigler, Gary Becker) considered various demographic projections bearing upon graduate enrollments at the national level, and analyzed the implications of trends in graduate enrollment at the University of Chicago in the past decade. Its work, some of which is explained in Appendix A, provided the basis for our conclusions in Chapter 2. A Committee on Future Graduate Student Surveys (Teresa Sullivan, Chair, Keith Baker, James Cronin, Godfrey Getz, Francoise Meltzer) planned the surveys described in Appendix B. The results of these surveys inform many of our conclusions regarding the needs and interests of the graduate student body in Chapter 4. A Steering Committee (Keith Baker, Chair, Wayne Booth, Stuart Rice, Edwin Taylor, Stephen Trooliou) gave consideration to questions regarding the overall shape of this report.

In addition, the Commission also created four Divisional Committees, each charged to explore the principal problems and issues relating to graduate education in one of the Divisions. The Committee on the Biological Sciences Division was formed by Ralph Nicholas (Chair), Godfrey Getz, Irving Kaplanly, and Edwin Taylor. The Committee on the Physical Sciences Division was composed of Keith Baker (Chair), James Cronin, Stuart Rice, and Teresa Sullivan. The Committee on the Humanities Division comprised Susanne Rudolph (Chair), Wayne Booth, Francoise Meltzer, and Stephen Sigler. The Committee on the Social Sciences Division was made up of James White (Chair), Keith Baker, Jonathan Smith, and Harold Wechsler. Members of these committees met with Divisional Deans and Deans of Students, with department Chairs, with faculty members, and with graduate students. The working papers they prepared, which were discussed by the Commission during the Winter Quarter of 1981, clarified our general understanding of many of the issues treated in this report. They also form the basis of the consideration of the four Divisions in Chapter 5.

In describing our own work, we wish also to acknowledge the work we have proposed on others and for them to help us. We have called upon many of our faculty colleagues for particular advice. We have received information and assistance from individuals to numerous to name, in many offices throughout the University: from the Office of the President, of the Provost, of the Vice-President and Dean of Students, of the Director of Financial Planning and Budget, of the Divisional Deans and of the Divisional Deans of Students, of many department Chairs. Peter Aschauer, who served as our staff assistant for much of the Commission's life, was helpful in many ways: not least in keeping the minutes of our meetings. He has been followed in this task by David Epstein, who has continued a tradition of endowing a faultless record of what we said with a clarity and elegance we did not always attain. Karyl Kinsey, who has served as our principal research assistant, played an indispensable part in the administration and analysis of our graduate student surveys and in the analyses of other data presented in this report. Felix d'Allesandro, Paul Colson, Alfred Darwell, and Albertha Ahernaly also provided valuable assistance. We owe in particular an acknowledgement of our gratitude to Esther Shlton-Smith and Sandra Poppe, for the efficient processing of this report to meet the most pressing deadlines.

B. Summary of Conclusions and Recommendations

The Commission commenced (and now concludes) its deliberations in the context of gloomy national discussions of impending deficits in graduate education, prompted by demographic projections that seem to offer grave consequences for the future of graduate education. It therefore undertook to explore the nature of these national implications, and to reflect upon their implications for all institutions such as our own; (ii) to analyze the demographic trends at this University and to explore their consequences for the nature of the graduate education we now offer.

Implications of the Demographic Context

The results of these reflections are presented in Chapter 2. We conclude that, while planning for the University's future must certainly be constrained by a prudent regard for the projected limitations on the growth of higher education in the coming decades, its fate will not be entirely determined by them. Long-term projections tend to be unreliable; and their relative indeterminacy allows considerable opportunity for the successful exercise of institutional initiative and enterprise. The University's faculty, as a center of broad intellectual education will depend critically upon the vision and determination of its members.

We conclude in Chapter 2 (Section B) that graduate enrollments at the University of Chicago have fallen dramatically in the past decade, to a point that has serious implications for the continued quality and vigor of research and teaching in a number of fields. We recommend energetic efforts to maintain graduate enrollments at the level and quality necessary to sustain the highest level of intellectual activity. But we insist that graduate student numbers should not be maintained at the cost of student quality. It would be a profound mistake for the University to allow relatively short-term constraints to compromise its enduring tradition of academic excellence.

Chapter 2 (Section B) also offers an analysis of the employment opportunities of Ph.D. graduates at this University in the period 1970-80. We note that there has been a marked decline in the proportion entering traditional academic careers in teaching and research, particularly in the humanities and social sciences. Assuming that the University's Ph.D. graduates will face intense competition for the academic jobs available in the United States, and recognizing that a substantial proportion of them are already entering nonacademic careers, we urge that the faculty now ask whether graduate students at this institution are being prepared as effectively as possible to pursue both academic and nonacademic careers and to occupy them with distinction.

Principles, Purposes, and Goals

Concluding that the University needs to look critically at the goals and assumptions of its graduate programs, we seek to offer a basis for such consideration in Chapter 3 by analyzing the principles, purposes, and goals of graduate education at the University of Chicago as we understand them (Section A). We emphasize that the educational goals of the University have consistently expressed its overriding commitment to the conditions of scholarly research in the pursuit of new knowledge and fuller understanding; and its special preoccupation with issues that transcend the current boundaries of existing academic disciplines and departments. We argue that the intellectual training produced by a commitment to these goals constitutes the most appropriate way of achieving the fundamental purpose of graduate education: to develop analytical, depend^ and conceptua^ self-consciousness; to stimulate creative imagination and critical abilities; to inculcate habits of disciplined thinking and systematic investigation; in short, to prepare individuals to ask questions and to formulate problems across a broad range of human activities. As a result of their training in an environment that is unified by a discipline with an emphasis on research as the principal activity—for it is in the practice of research that these skills and capacities are most effectively developed—our best graduates have a deserved reputation for combining professional excellence with a healthy capacity to see technical problems in their larger contexts, and to rise above the limits of "conventional wisdom."

Our view of the nature of graduate education at the University of Chicago once stated in general terms, we turn to the various ends towards which graduate education may be directed (Chapter 3, Section B). First, we discuss the end for which graduate education was first created in the United States: that of training successive generations of scholars and professionals in the pursuit of knowledge and understanding. We consider the vigor of the tradition of research and scholarship in this country—a tradition to which this University has made fundamental contributions—and emphasize its importance in our national life. We review the erosion of national support for graduate education that has already occurred and the prospects of its continuation. We urge upon the administration the importance of joining with other leading universities whenever possible to insist upon the importance of maintaining outstanding graduate programs as a condition of national vitality in the sustained search for new knowledge and fuller understanding, and of continuing its active efforts to secure the beneficence of corporate and individual donors in support of this University's distinctive vision of intellectual excellence. We urge upon the faculty the importance of ensuring that the University is now making the most appropriate use of its intellectual and material resources in the realization of that vision. To this end, we recommend that each department or committee initiate an evaluation of its graduate programs, in response to the recommendations offered by this Commission. These responses would, in our view, be an appropriate part of the collective effort of the evaluation of departments by visiting committees of review. We recommend the reinstatement of earlier procedures for the regular evaluation of departments by such visiting committees as an indispensable mechanism for the preservation of scholarly excellence. We believe that these visiting committees should be composed equally of distinguished scholars from outside the University and members of our own faculty.

Second, we consider graduate education at the
University of Chicago as directed towards the end of preparing students for teaching at the university and college level (Chapter 3, Section B). We emphasize the importance of identifying those programs and areas in which a period of academic expansion has fostered a drift towards specialization that is neither intellectually defensible nor competitively advantageous for individual students. We also underline the need to provide increased opportunities for our graduate students to obtain teaching experience under conditions that will both generate a greater number of our graduate programs and enrich the quality of our undergraduate education, where that may seem appropriate.

Third, we address the nature of graduate education as directed towards the end of preparation for non-academic careers (Chapter 3, Section B). We conclude that the graduate education to which we aspire at the University of Chicago develops skills and capabilities, attitudes and values, that will remain a source resource in many domains of human activity. And we argue for a broader conception of graduate education: a conception that would combine the preparation of future academic teachers and researchers with the education of those who find intellectual challenge and satisfying fulfillment of their abilities and skills in non-academic fields of endeavor. This does not imply watering down the Ph.D. by making it more vocational or professional qualification. Instead, it means making the Ph.D. less exclusively a vocational degree for academic teachers and researchers, and more explicitly a training in the analytical methods and the intellectual capabilities of a kind that is relevant to an academic or a non-academic career.

Arguing for such a conception of graduate education, we believe that ways in which students might be encouraged to consider and prepare for appropriate non-academic career options while continuing with their education. We contend that multiple career options need to be formally recognized as a research degree and that the training at the University of Chicago develops skills and preparing students to acquire particular professional skills in the course of their doctoral work, and foster the creation of a research degree and making it a research degree and making it a research degree and making it a research degree and making it a research degree and making it a research degree and making it a research degree and making it a research degree and making it a research degree and making it a research degree and making it a research degree and making it a research degree.
the recommendations we offer, invite and require several forms of response for their implementation. Some of our recommendations, since they depend upon administrative action, are addressed directly to the President, the Provost, and the Deans. Others will require deliberation and eventual action by the Council of the University Senate. Still others depend upon the willingness of faculty bodies throughout the four Divisions to continue their own consideration of the problems and concerns we have identified in this report, and to engage in the evaluation of programs and goals that we now think essential. We urge them to do this as energetically as possible, confident that the future of this University as a center of graduate education depends principally—now, as in the past—upon the distinctive intellectual vision to which its faculty stands committed, and upon its overriding determination to bring that vision to the highest point of realization.

Chapter 2: Predicting the Future, Projecting from the Past

Some of the numerous guesses of diviners have, as is not wonderful, hit the truth with great exactness. Thus John Cass, the astrologer of Josueth, son of Brandenburg, published in the year 1522 a Prognostication, constructed according to the rules of the art, in which he predicted a destructive inundation, famine, pestilence, and civil and ecclesiastical troubles, for the year 1524. In this year, there were the greatest of all, varying events, changes and catastrophes. Acolmley, who reports this prediction in a volume published in 1587, does not doubt that the astrologer will prove to be as much mistaken with respect to the year 1596, as he had already proved to be with respect to the year 1592.

A. The National Context

It has been remarked that "Hell is truth seen too late." It might equally well be argued that "Hell is half-truth seen too soon." Certainly, the prospects of demographically driven disaster are torturing many souls in contemporary academic life. Following a period of dramatic growth, the size of the traditional college-age population is about to diminish. After two decades of expansion fueled by that growth, American higher education faces the prospect of declining enrollments, which in turn imply contracting resources, diminished opportunities, and institutional dislocation. Annual births in the United States fell from about 4.3 million in the early 1960s to just over 3.1 million in the mid-1970s, rising slightly again to roughly 3.3 million in 1979. Given such figures, the traditional college-age population is expected to shrink by about a quarter in the next two decades. According to its 1980 report, Three Thousand Futures, the Carnegie Council on Policy Studies in Higher Education calculates that the size of the eighteens to twenty-four age cohort will decline by 23.3 percent between 1979 and 1997. We shall see later that such figures do not of necessity imply a corresponding decline in national graduate school enrollment, much less those at the University of Chicago. But first we will do well to review some currently expressed conclusions based upon this projected decline, since they have played a major role in creating the present mood in higher education nationally.

Some Projections

Efforts to estimate the fall in college enrollments that might result from the predicted decline in the traditional college-age population depend critically upon judgments regarding the extent to which the apparent implications of that decline might be offset by changing patterns of college attendance among different social and economic groups within that age cohort, as within other groups in the general population. They can therefore vary considerably. The Carnegie Council has estimated that the decline in full-time equivalent (FTE) enrollments in the period between 1979 and 1997 will fall within a range of 5 percent to 15 percent. That decline, it has suggested, will not occur at an even rate. The Council expects undergraduate enrollments to hold steady until 1983, after which there will be a relatively steep drop until the end of the 1980s (about 40 percent of the total decline). After a brief interruption, the decline will resume in 1991, continuing at a sharper rate until 1997 (about 60 percent of the total decline). Enrollments will then begin to recover steadily until they reach 1979 levels once again about 2010.

In comparison with some other projections, the calculations of the Carnegie Council appear relatively optimistic. Fred Craighead, of the Ford Foundation, offers the more severe estimate of a 15 percent reduction in the total number of students enrolled (full-time and part-time), which would produce a decline substantially exceeding 15 percent in FTE enrollment. He also

Figure 1: Projected Full-Time Enrollments in Higher Education, 1980-2000

argues that there will be substantial regional variations, with enrollments in the northeastern quadrant of the country decreasing at perhaps twice the national rate. This more pessimistic view is shared by William Bowen, president of Princeton University. Calculations carried out for his cogent 1981 presidential report, Graduate Education in the Arts and Sciences: Prospects for the Future, suggest a "very substantial" decline of about 15 percent in FTE enrollments between 1981 and 1996. The calculations are represented in Figure 1 on preceding page.

Declining college enrollments are expected to mean a low rate of retirement and a consequent restriction in the job opportunities for which the Ph.D. has traditionally been the preparation. The implications of these calculations for graduate education leading to the Ph.D. therefore seem grave enough. But the consequences of declining enrollments are likely to be exacerbated by the age distribution among current faculty members and by the recent legislation extending the age of mandatory retirement to age seventy. Because of the rapid expansion in higher education in the 1960s and 1970s, a large proportion of faculty members are still relatively young. In 1978, 73 percent of all faculty members were under fifty and 60 percent under forty-five; only 16 percent were fifty-five or over and only 7 percent were sixty or older. As a result of this age distribution, there will be relatively few faculty retirements in the next two decades. Figure 2, drawn from a recent report of the Committee on Continuity in Academic Research Performance, shows the model age distribution calculated to produce a steady-state equilibrium with constant faculty size under certain assumptions. One of those assumptions, that all faculty members retire at age sixty-five, has already been negated by recent changes in the laws governing mandatory retirement. Low rates of retirement and a decline in enrollments therefore seem likely to combine in the next two decades to depress the academic job market for new Ph.D.s. Efforts to calculate this effect are extremely complex and involve a wide range of assumptions. The most recent projection—an effort by William Bowen and associates at Princeton to update the earlier calculations of Alan Carter (see Figures 3a and 3b)—reach an estimate that a total of 100,000 academic positions will become available in the period from 1980 to 1995. This figure would mean that the total demand for faculty during the fifteen year period would be roughly equal to that during the three peak years, 1965-67. On the supply side, 31,200 doctorates were awarded by United States universities in 1979, as compared with 16,341 in 1965, 17,949 in 1966, and 20,406 in 1967. Although the number of doctorates granted has declined from the peak year of 1973 (which produced 33,756), it remains far in excess of Bowen’s predicted demand for new faculty.

The implications of these projected trends for graduate education in the arts and sciences seem severe. Diminished opportunities in the academic job market have already discouraged many well-qualified prospective Ph.D. students from pursuing a program of study conceived principally as a preparation for academic careers, and seem likely to continue doing so. The consequent decline in graduate enrollments will jeopardize the continuity and vigor of teaching and research in many fields of knowledge. The impending shortage of positions for junior faculty members will restrict the flow of innovative young scholars into academic life, thereby threatening the creativity and vitality of research and scholarship long after the crisis in enrollment has subsided.

**Figure 2: Actual and Steady-State Distributions, Full-Time Doctoral Faculty at Ph.D. Granting Institutions, 1978**

![Figure 2](image)

**Figure 3A: Comparison of Junior Faculty Openings with Earned Doctorates Awarded (Actual 1948-1973, Projected 1974-1990)**

![Figure 3A](image)

**Figure 3B: Bowen’s Projections of Faculty Demand, 1981-2000 Compared with Carter’s Projections for 1975-1990**

![Figure 3B](image)
These are grave prospects. What are their implications for a graduate school like our own? We should not expect to be unaffected by any such developments. But neither should we regard these projections as issuing in an iron law of decline. They depend upon many assumptions and are subject to unanticipated changes as a result of many factors which are not strictly demographic. They represent in the aggregate tendencies that will not affect all institutions equally, or in the same way. How far, then, should we depend upon them in considering the future of graduate education at the University of Chicago? How far can we anticipate future graduate enrollments here in the light of these national projections? Their conclusions are based on extensive population data and a persuasive logic, but the main implicit assumption—that population-based forecasts are sufficiently accurate to provide useful information for University planners—does not seem to have received as much attention as it deserves. It would seem plausible that at least some useful information can be gleaned from demographic trends, that knowledge of the number of "future customers" should permit, at the very least, a reasonable forecast of national enrollments, and that patterns in national enrollments should be related to those at the University of Chicago. However, a limited investigation suggests that despite this compelling logic, other than demographic considerations dominate national trends, and that attempts to come to grips with these other considerations have not been very successful. One may be optimistic that future models incorporating other than demographic factors will prove more effective, but the optimism must be guarded: such models do not seem to be available at present.

How Reliable are the Projections?

In order to gauge the maximum accuracy to be expected from national enrollment and national predictions, we have performed a retrospective analysis of the longest continuous series of past projections we could locate, those of the National Center for Educational Statistics. This analysis, which is described more fully in Appendix A, leads us to the conclusion that projections of this kind can be very unreliable, and that predictions into a future as far as ten years ahead tend to be unreliable. Predictions for private institutions have tended to be more accurate than those for public institutions, but only because the private enrollments have changed less. And even for the private institutions the eight- and ten-year-ahead predictions have missed the major patterns by a large margin. Projections made up to ten years ahead are off by amounts as large as six to eight years variation in the enrollments themselves. The results of our study are consistent with a belief that future enrollments can be no more accurately predicted using past enrollments and supplementary demographic data than using past enrollments alone and ignoring other data. Both methods are unreliable.

These projections do not do well because they fail to incorporate changes that are more influential than the factors they do include, that is, unanticipated changes in economic, political, and social conditions.

When we look at the relationship between University of Chicago enrollments and national figures, we must become even more pessimistic about the possibility of forecasts that will be useful for the University. As Figure 4 shows, there is no strong even positive, relationship between these series. Furthermore, the variation within the University, among Schools, Divisions, and (in other figures) departments, underlines the inapplicability of national aggregate data to a particular institution.

Pessimism over the ability to forecast does not mean that we at the University of Chicago can afford to remain sanguine regarding the University's fate. But it does suggest that gloomy predictions based on seemingly inexorable census data may not be a reliable indicator of the University's future. We would be imprudent to disregard the demographic data entirely, but equally unwise to think of them as issuing in an iron law of decline, or depriving the University of the opportunity to shape its own future. Graduate enrollments at the University of Chicago are the result of a variety of factors, some of which remain uncertain, many of which are within our control. The University's future as a center of graduate education will depend in large part on the distinctiveness of its conception of the nature and purpose of that activity. It will depend in large part on the excellence of our efforts to realize such a conception. And it will depend in large part on our determination and ability to respond to current problems and changing conditions in ways that will further our common pursuit of fundamental goals. We must therefore seek to plot our present location as clearly, and to chart our future course as decisively, as possible.

B. The Local Context

By way of preparation for such a task, we turn our attention to the section of the Commission's report to some important demographic trends at the University of Chicago. We begin with the question of graduate student enrollments before turning to the matter of career opportunities for Ph.D. graduates.

Recruitment

It will be useful to begin this discussion by reviewing the preliminary findings of the Committee on Enrolment (Bradburn Committee), as reported in 1980. The committee drew attention to a pattern of declining enrollments in the four graduate Divisions that established itself in the course of the 1970s. Between 1968-69 and 1978-79, Divisional enrollments fell by 27 percent while Divisional applications fell even further, by 37 percent. Larger reductions in enrollments were therefore avoided by accepting an increasing proportion of applications from a shrinking pool of applicants, a practice which cannot be continued indefinitely without fear of eroding the quality of the graduate student body. As a result of these diminishing enrollments in the four Divisions, which were offset in large part by increases in College and professional School admissions, the traditional proportions of undergraduate, graduate, and professional students enrolled on the Quadrangles were modified substantially in the last decade. From the late 1930s to the early 1970s, Divisional enrollments accounted for over 40 percent of the student body. After 1972, their share declined steadily, reaching 33 percent in 1978-79 (as compared with 53 percent in the Schools and 34 percent in the Colleges). Considering these figures, the Bradburn Committee concluded that "the situation facing us in regard to graduate enrollments is a threat to the existence of the University as we have known it. It should be recognized as such, and the response should be commensurate with the recognition of that threat."
It should be emphasized here (as it was in the Brad­
burn Committee Report) that the pattern at Chicago is si­
lar to that at other first-rank graduate schools with
whom we customarily compare ourselves. We are not
alone. Of the ten leading research institutions (most of
them private) for which comparable figures are available
among the Divisions and departments. As Figure 5
shows, enrollment has declined most dramatically in the
Physical Sciences Division (down by 46 percent since
1968-69), a matter of serious concern in a Division
where graduate student collaboration is a central feature
of research activity. The declines have also been sub-
stantial in the Social Sciences Division (39 percent) and
in the Humanities Division (35 percent). To date, the
Biological Sciences Division has essentially held its own
with a decline of 5 percent over the entire period since
1968-69, though the decline in the number of matric­
ulants since 1977-78 suggests the possibility of diffi­
culties in the future. Departmental variations within
Divisions are summarized in Figure 6, where the dote
summarize percentage changes per year between
1968-69 and 1981-82 (for example, a value of -4 per­
cent per year means that a department declined an
average of 4 percent per year of its average enrollment
over the period, or about 56 percent of its average enroll­
ment in the fourteen year period). In Figure 6, negative
values represent declines; positive values represent gains.
The numbers are actually crude descriptive over­
all summaries; they do not reflect the briefer changes in
trends or more complex patterns evident in the more
detailed figures appearing later in this report. Figure 7
presents similar data for applications.
In the Physical Sciences Division, the decline in enrollments has been greatest in the three largest departments, Physics, Chemistry, and Mathematics; only in Geophysical Sciences and Astronomy and Astrophysics do they remain near earlier levels. In Social Sciences, the decline has been marked one in Education, Geographical do they remain near earlier levels. In Education, Geography, History, Political Science, and Behavioral Sciences, there have been sharp declines in enrollment in Education, Geography, History, Political Science, and Behavioral Sciences, and International Relations have escaped or reversed the trend. In Humanities, Western languages and literatures, including English, have experienced large declines, with Comparative Literature a notable exception. Art, Linguistics, and Asian language and literature departments (with the exception of Far Eastern) show little net change, while Music has increased markedly. In Biological Sciences, there have been sharp declines in several departments (Biophysics and Theoretical Biology, Biopsychology, Anatomy) and a noticeable decline in several departments (Biophysics and Theoretical Biology, Biopsychology, Anatomy) and a noticeable decline in Education, Geography, History, Political Science, and Behavioral Sciences. In Humanities, Western languages and literatures, including English, have experienced large declines, with Comparative Literature a notable exception. Art, Linguistics, and Asian language and literature departments (with the exception of Far Eastern) show little net change, while Music has increased markedly. Biological Sciences have not raised enrollment rates; indeed, in several departments, enrollment rates have actually declined. It may well be true that the quality of applicants varies from department to department in such a way that high or increasing admission rates would have less negative effects on student quality in some departments than in others. Nevertheless, the issue of student quality is a concern to which we shall feel obliged to return.

Employment Opportunities

We now turn from changing enrollment patterns in the four Divisions to changing patterns in employment opportunities for Ph.D. graduates in the arts and sciences. Tables 3 through 7 give data on employment of Division graduates upon graduation for the years since 1970, drawn from the reports prepared by the Director of Career Counseling and Placement and published annually in the University of Chicago Record. These data have several obvious limitations. They refer only to employment opportunities for Ph.D. graduates in the arts and sciences.

The criterion value of C=2 was chosen after noting that for all departments with larger C, exceptions of admission rate variation in applications showed visually striking patterns. The choice was thus somewhat arbitrarily made to present a simplified display in Figure 8 of those departments whose admission rates had changed most. Some departments whose admission rates had changed considerably over the fourteen years covered. We shall give a technical definition of C next. On the other hand, if a department always admits a fixed number of students, regardless of the number of applications, or if the number of applications is a complex function of an admission rate, then C=0. The values of C for the circled departments vary;

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<th>Department</th>
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<td>History</td>
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<tr>
<td>Economics</td>
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<td>History of Culture</td>
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<td>Sociology</td>
<td>0.60</td>
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<tr>
<td>Anthropology</td>
<td>0.80</td>
</tr>
</tbody>
</table>

The values of C for the circled departments are:

- English: 0.25
- Behavioral Sciences: 0.80
- Fine Arts: 0.21
- Economics: 0.85
- History of Culture: 0.83
- Political Science: 0.60
- Social Thought: 1.88
- Sociology: 0.60
- Anthropology: 0.80

This chart shows the percentage change in enrollment for each department over the fourteen years.

**Figure 8: Enrollment Percent Change per Year, 1969-69 through 1981-82**
Figure 7: Applications: Percent change per year, 1968-69 through 1981-82. (Base is each Department's 14 year average.) (Triangles are Division rates.)

Figure 8: Department Selectivity: Average percent offered admission, 1968-69 through 1981-82. (Triangles are Division averages.) Shaded Departments have shown marked change in selectivity, as percent admitted increased in the face of declines in applications.
71, 82 percent of our graduates went on to such the number of level of

Now find it more difficult to secure academic positions before comple­Sciences students graduating in that year proceeded, the following percentages were made to calculate this latter proportion.

Division), that the proportion of such short-term posi­particularly in the Humanities and many faculty members with whom we have talked, way of gauging the reliability of the sense (shared by proportion of those first jobs involve temporary or non­graduates are now finding 63 percent. Thus fewer than two-thirds of our Ph.D. University level (including post-doctoral appointments). In substantial decline in the proportion of those going on to

of 17 percent (in 1978-79). For graduates entering the foreign students awarded the 

During the same period, the annual number of for­Ph.D. graduates fluctuated slightly, ranging from a low of 6 percent (in 1975-76) to a high of 17 percent (in 1978-79). For graduates entering the United States job market, the most dramatic change in employment patterns during the period was the sub­stantial decline in the proportion of those going on to
careers in teaching and research at the college or uni­versity level (including post-doctoral appointments). In 1970-71, 82 percent of our graduates went on to such
positions; by 1979-80, the proportion had declined to 63 percent. Thus fewer than two-thirds of our Ph.D. graduates are now finding first jobs in traditional academic careers. Unfortunately, we do not know what proportion of those first jobs involve temporary or non­tenure track positions, so there is at present no precise way of gauging the reliability of the sense (shared by many faculty members with whom we have talked, particularly in the Humanities and Social Sciences Division), that the proportion of such short-term pos­itions is growing. But it seems prudent to assume that

Looking at the unemployment patterns, it seems clear that the most difficult period came in the middle 1970s, when the relatively large number of students who began graduate study in the late 1960s were met with a sharp decline in employment opportunities. From a high of 7 percent in 1974-75 the number of Ph.D. graduates still unemployed in the Spring following their year of graduation had fallen to 1 percent in 1979-80. Of course, some of those graduates whose employment status remained unknown may also have been unemployed or seriously underemployed. However, their relative number has remained fairly small.

Within the overall employment trends suggested by Table 3, there are naturally important variations among the four Divisions. Data for each Division are therefore given separately in Tables 4 through 7. The most dramatic patterns appear in the Humanities and Social Sciences Divisions. In Humanities (Table 4) the number of Ph.D. graduates on the job market fell by 30 percent in the ten years between 1970 and 1980. Dur­ing the same period, the proportion of Ph.D. graduates entering teaching and research positions at the univer­sity or college level declined from 93 percent in 1970-71 to 69 percent in 1979-80. This is a really substantial decline in a Division whose graduates have traditional­ly gone overwhelmingly into academic careers. Table 4 also suggests that the employment crunch of the mid-1970s was felt most critically by graduates with Ph.D.s in the Humanities. Unemployment for these graduates reached as high as 13 percent in 1973-74 and again in 1976-77. By 1979-80, it had fallen to 2 per­cent as larger proportions of Humanities Ph.D.s were entering non-academic careers.

fewer than the 63 percent of our Ph.D. graduates now entering teaching and research positions will remain in academic life.

After a marked decline in the middle years of the decade, the percentage of graduates going on to postdoctoral fellowships has returned again to the 1970-71 level of 20 percent. There has also been a marked increase in graduates choosing to continue their education beyond the Ph.D. (2 percent in 1970-71; 7 percent in 1979-80): this increase is principally the result of a growing tendency among Ph.D. graduates in Biological Sciences to proceed to further medical training in the context of the joint M.D.-Ph.D. pro­gram. As the percentage of Ph.D. graduates entering tradi­tional academic careers has declined, the percentage of those entering non-academic careers has increased from 11 percent in 1970-71 to 29 percent in 1979-80. Business and industry, government, and non-profit or­ganizations provide a large proportion of these non­academic positions.

In the study of employment of 1974-75 doctors, an effort was made to calculate this latter proportion. Of the academic jobs in which academic students graduating in the year proceeded, the following percentages were "new" academic jobs: Physical Sciences 95 percent; Biological Sciences 80 percent; Social Sciences 52 percent; Humanities 52 per­cent. Since students in the Humanities and Social Science Divisions now find it more difficult to secure academic positions before comple­tion of the Ph.D., it was likely that the proportion of new jobs has in­creased for graduates of these Divisions.

ment status in the Spring following the academic year of graduation: for many purposes it would be desirable to have information gathered several years after graduation. In the case of academic positions, they do not distinguish between part-time and full-time jobs, between tenure­track and temporary or non-tenure track positions, be­tween "old" jobs (already held by degree candidates) and "new" jobs (obtained at the time of graduation). In the case of non-academic jobs, they provide no basis for distinguishing between full employment and part-time or temporary positions. As a result, the annual figures may therefore give a rather more positive picture of employ­ment patterns in any given year than is warranted. Nevertheless, since the data have been gathered regular­ly and systematically in the same manner since 1970, they offer valuable information regarding overall trends in the employment of Divisional graduates during the past decade.

In the decade from 1970 the four Divisions awarded 3,497 Ph.D. degrees, including 933 degrees earned by foreign students holding temporary visas. That figure represents an overall decline in the annual number of Ph.D.s awarded: from 385 in 1970-71, the number in­creased to 421 in 1972-73, then fell fairly steadily to 251 in 1978-79, increasing slightly to 269 in 1979-80 (down 31 percent over the decade).

Of these graduates, an effort was made to calculate this latter proportion. Of the academic jobs in which academic students graduating in the year proceeded, the following percentages were "new" academic jobs: Physical Sciences 95 percent; Biological Sciences 80 percent; Social Sciences 52 percent; Humanities 52 percent. Since students in the Humanities and Social Science Divisions now find it more difficult to secure academic positions before completion of the Ph.D., it was likely that the proportion of new jobs has increased for graduates of these Divisions.
Much of the same pattern appears in the Social Sciences Division (Table 5). While the number of Ph.D. degrees awarded declined overall by 31 percent between 1970 and 1980, the number earned by foreign students remained fairly steady. As a result, there were 35 percent fewer graduates with Ph.D.s in the Social Sciences on the United States job market in 1979-80 than in 1970-71. During the same period, the proportion proceeding to a first position in university or college teaching and research fluctuated considerably, but declined overall from 78 percent in 1970-71 to 58 percent in 1979-80. This means that there has been a marked increase in the proportion of Social Sciences graduates entering non-academic careers, particularly since 1977-78. In that year, more than a quarter entered such careers, by the following year the proportion had increased to exceed a third. While it grew during the mid-1970s, unemployment of Ph.D. graduates in the Social Sciences did not reach the levels experienced in the Humanities Division.

In the Biological Sciences Division (Table 6) the numbers of Ph.D.s awarded has fluctuated over the decade, reaching a low in 1978-79 and increasing in 1979-80 to beyond the 1970-71 figure. The proportion of graduates entering academic teaching and research positions dropped from 74 percent in 1970-71 to a low in 1975-76 and then increased again to over 60 percent in 1976-77, remaining at that level in the following years. This decline and recovery has been largely accounted for by a decrease in postdoctoral appointments in the mid-1970s (reflecting a greater scarcity of funds available for these positions), which has now been largely reversed. Since 1972-73, between a quarter and a third of the Ph.D. graduates in the Biological Sciences Division have pursued further education in the coming decades, its fate will not be entirely determined by them. The University’s future as a center of graduate education will depend critically upon the vision and determination of its members.

3. The reduction in graduate enrollments has serious implications for the continued quality and vigor of research at the University, for by the existence of the necessary M.D.-Ph.D. degree program which was introduced in the 1960s and stabilized at twelve to fourteen graduates per year by the 1970s under which Ph.D. graduates naturally proceed to further medical training. A very small number of the Ph.D. graduates in Biological Sciences enter industry. The numbers are too small to measure a trend, although the rapid expansion of biotechnology in the past two years may be expected to increase job opportunities in industry.

In the Biological Sciences Division, the total number of Ph.D. degrees awarded has fluctuated considerably from a high of ninety-three in 1972-73 to a low of forty-three in 1979-80. The proportion of foreign students receiving the Ph.D. has also fluctuated dramatically. Nevertheless, in 1979-80 the number of Ph.D. graduates entering the United States job market was 47 percent lower than in 1970-71. And while the percentage of graduates entering teaching and research positions at the college and university level has also fluctuated, it declined from 84 percent in 1970-71 to 66 percent in 1979-80. As in the Biological Sciences Division, there was a tendency (which may now be reversing itself) for the proportion of graduates proceeding to postdoctoral fellowships to decline in the middle of the decade. There has been a substantial increase in the proportions of graduates in the Physical Sciences entering non-academic careers, most notably in business and industry. The difficulties in securing employment which appeared in the first half of the decade seem to have subsided.

C. Some Preliminary Conclusions

What are the implications of this brief review of Divisional enrollments and employment opportunities for Ph.D. graduates at the University of Chicago? How should the University seek to shape the future of graduate education here in the light of these figures, and of current national trends and concerns? This Commission has reached the following initial conclusions, which have guided the further discussions and recommendations that appear in the present report.

1. Despite widespread assumptions to the contrary, long-term projections are unreliable; and their relative indeterminacy allows considerable opportunity for the successful exercise of institutional initiative and enterprise. While planning for the University’s future must certainly be constrained by a prudent regard for the projected limitations on the growth of higher education in the coming decades, its fate will not be entirely determined by them. The University’s future as a center of graduate education will depend critically upon the vision and determination of its members.

2. The reduction in graduate enrollments has serious implications for the continued quality and vigor of research at the University, for by the existence of the necessary M.D.-Ph.D. degree program which was introduced in the 1960s and stabilized at twelve to fourteen graduates per year by the 1970s under which Ph.D. graduates naturally proceed to further medical training. A very small number of the Ph.D. graduates in Biological Sciences enter industry. The numbers are too small to measure a trend, although the rapid expansion of biotechnology in the past two years may be expected to increase job opportunities in industry.

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TABLE 5: EMPLOYMENT OF PH.D.S: SOCIAL SCIENCES DIVISION 
TEN-YEAR COMPARISON BY OCCUPATION ENTERED

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<th>Base data:</th>
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Base data: Foreign Ph.D.s (temp visa) | U.S. Ph.D.s | Total Ph.D.s awarded

Occupations of U.S. Ph.D.s

1. Careers in College & Univ.
   Research/Teaching (subtotal) 124
   Teaching/Research positions 120
   Post-doctoral fellows (subtotal) 4
   At U.C. 2
   At other U.S. institutions 3
   At foreign institutions 0

2. Other careers (subtotal)
   College & Univ. Administration 5
   School teaching and/or admin. 1
   Business & Industry 2
   Government 4
   Non-profit 11
   Self-Employed 0
   Religious/Military Service 0

3. Pursuing further education 1
4. Unemployed (subtotal) 4
   Not seeking 1
   Seeking 3
5. Miscellaneous 1
6. Unknown 7

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<th>Total Ph.D.s awarded</th>
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Base data: Foreign Ph.D.s (temp visa) | U.S. Ph.D.s | Total Ph.D.s awarded

TABLE 6: EMPLOYMENT OF PH.D.S: BIOLOGICAL SCIENCES DIVISION 
TEN-YEAR COMPARISON BY OCCUPATION ENTERED

<table>
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   Government 4
   Non-profit 1
   Self-Employed 0
   Religious/Military Service 1

3. Pursuing further education 6
4. Unemployed (subtotal) 2
   Not seeking 1
   Seeking 1
5. Miscellaneous 0
6. Unknown 0
graduate students who cannot be expected to reach its standards of intellectual achievement.

4. The University's Ph.D. graduates will face intense competition in the coming decades for the available academic jobs. As faculty members, we must ask whether we are preparing them as effectively as possible to pursue these jobs and occupy them with distinction.

5. It is also essential to recognize that a substantial proportion of the University's Ph.D. graduates are now pursuing non-academic careers, and that this pattern is likely to continue in the future. The faculty must ask what the value of a Ph.D. training is for those students and whether it is educating them appropriately. It must also ask what role the University can and should play in helping students to pursue non-academic careers. This is a particularly important issue in the Humanities and those areas of the Social Sciences Division in which doctoral programs have traditionally prepared graduates overwhelmingly for academic positions in teaching and research.

6. Above all, the University needs to look critically at the goals and assumptions of existing graduate programs. The present situation represents both a challenge and an opportunity for us to ask whether we are doing what we should be doing as effectively as possible. It seems essential at this point that faculty members in the respective departments and Divisions embark upon a process of reevaluation and reconsideration.

Notes
5. Harvard University, Faculty of Arts and Sciences, Dean's Report (1977-78), p. 3.
8. Ibid., pp. 52-54.
11. Ibid., p. 16, appendix, p. 9.

Chapter 3: Graduate Education at the University of Chicago

A University must know its own character. It is not enough to say it is dedicated to education and to the cultivation of intellectual potential. It must be able to see itself as a whole in quite a different light. The University of Chicago (San Francisco, 1980), p. 15.

Since its creation, the distinctive qualities of the University of Chicago have rested substantially upon the special character of its commitment to graduate education, and the excellence it has been able to sustain as a result in the conduct of this activity. Given the prevailing sense of crisis in graduate education, this Commission believes that it is imperative that the faculty of the University evaluate its commitment to this traditional responsibility, consider the principles and assumptions on which it rests, and assess the means by which it is being pursued. A dramatic period of growth in higher education has ended; an uncertain future lies ahead. The present moment offers an occasion, and requires a sustained effort, to consider fundamental questions of purpose and direction. As faculty members, we must ask ourselves — and be willing to explain to others—what it is we wish to achieve, and why. What is the idea of graduate education at this University? What goals, purposes, and values does it serve? Can these ends be justified in existing conditions? How are they pursued and can they be achieved more effectively? Ultimately, these are questions that must be addressed by the faculty as a whole and by the separate academic units of the University individually. In this section of its report, the Commission offers a discussion of principles, purposes, and goals intended to serve as a basis for wider deliberation among the faculty at large.

A. The Idea of Graduate Education

The University is a community dedicated to the cultivation of intellectual life, and to the transmission of its achievements, norms, and values. It encompasses many different kinds of activity and serves many different purposes, and its health depends upon the creative tensions among these varied activities and goals. It undertakes to create new knowledge, while also preserving and exploring the cultural inheritance of humankind. It strives to advance the power of individual disciplines, while also fostering critical
resistance to exaggerated or particularistic claims on their behalf. It offers technical training in fields of specialization which, at the same time, it seeks constantly to render obsolete. It measures its vigor in the achievements of its individual members, but it draws its strength from a complex web of communal values and collective endeavors.

Graduate education lies at the heart of this web. It constitutes the means by which the academic community perpetuates its existence, maintains its vitality, and defines its future through the training of new generations of teachers, scholars, and researchers. It provides a mechanism by which fundamental knowledge, intellectual creativity, and cultural resources can be preserved and placed at the service of society at large. It offers a context in which individuals can extend their powers of understanding, further their creative abilities, and enhance their capacities to pursue challenging careers and intellectually satisfying goals.

Much of this could, of course, be said of any serious university. But two things have distinguished the University of Chicago ever since its inception: its overriding commitment to the traditions of scholarly research in the pursuit of new knowledge and fuller understanding; and its special preoccupation with issues that— or even call into doubt—the current boundaries of existing academic disciplines and departments. This has been true both of the research activities of this University and of its educational goals.

"The work of the student in the future will not be cut off into departments," President Harper insisted in developing his view of a great research university, "the contrary it will be the study of problems which will lead him into and through many departments of study." And so long as it maintains this special vision of intellectual life and critical inquiry, the University of Chicago will continue to be an academic resource of national and international significance.

All universities properly so-called are concerned with the coalescence of specialized knowledge and the development of technical skills; and by introducing graduate and postdoctoral students to these disciplinary arts, they preserve and refine the current body of knowledge in those fields. But while this task is necessary, it is not enough to acquire technical excellence in areas of professional expertise alone. There is need also for the capacity to view one's own professional skills with detachment— even, if need be, some irony—since these skills may be in danger of losing their relevance to the practical and theoretical problems of a new decade. While the "middle managers" in any collective human endeavor or organizational enterprise may often be people of high professional competence in narrowly defined fields, the tasks of leadership in such endeavors often call equally for the kinds of critical imagination and intelligence that are associated with the traditions of the liberal arts, sciences, and humanities. Given the University of Chicago's longstanding mission to cultivate these traditions, our best graduates have a deserved reputation for combining professional excellence with a healthy capacity to see technical problems in their larger contexts, and to rise above the limitations of "conventional wisdom." How can these historical attitudes toward posing personal honesty and intellectual integrity, the obligation to give full analytical consideration to competing claims and alternative positions, respect for the contributions of others to a common enterprise.

Thus, in contrast to those institutions of higher education which permit their students to work within the accepted divisions of the map of learning, and to transmit to their students the current corpus of disciplinary understanding with refinements and improvements, the University of Chicago has always had its own distinctive view of academic excellence. This view esteems academic disciplines and technical refinements, but not at the expense of isolating them. It counts mastery of such disciplines and refinements as an essential virtue, but requires that this mastery be matched by, and exposed to, an equally self-critical reflectiveness. By insisting that disciplinary boundaries never be taken for granted at a time when many other universities were turning into so-called multiversities—confederations of departments with no overriding common purpose or shared intellectual life—this University has sought to retain the quality that President Levi described as "a certain magic of aloofness." Staking its claim on the need to remain a single (if at times unwieldy) academic community in which scholarly discourse among colleagues pursuing different paths to knowledge this University and its educational goals.

In what respects, we are asked, does this activity constitute an education? It is needless to say that doctoral research that seems narrow and trivial. Every discipline surely has its equivalent of the thesis in English satirized in words that should haunt all dissertation supervisors: "Is there a minor poet by others missed? Dull sonneteer or maudlin novelist Some corpse to build a reputation on? A thesis swallows them and they are gone." But research is broad or narrow not in relation to the specific phenomena or subjects at hand, but in the manner in which it is studied. The broadest issues can be treated in a trivial, technical, or merely conventional way; the narrowest or most obscure phenomena can be addressed in a manner that opens up critical questions and transforms our understanding of the nature of the relevant disciplines. Knowledge is not to be expected to advance automatically; it will fail to the extent that it is merely training in a narrow specialization. Thus it is our claim for graduate education, properly conceived, that it constitutes a true education, not simply an advanced form of professional training. This kind of education is best accomplished in an environment that combines a broad intellectual discipline with an emphasis upon research as the principal activity. Such an assertion may appear to go against the previous argument. Research (we are told) necessarily means technical specialization, the deliberate narrowing of the focus of attention to more particular objects of investigation; and doctoral dissertation research, in particular, has often been criticized as excessively narrow. The traditional requirement that a doctoral dissertation represent "a contribution to knowledge" has been decried as leading in practice to the legitimation of muchBusywork contributing neither to the growth of human understanding nor to that of its author. In what respects, we are asked, does this activity constitute an education?

There is no easy recipe for this kind of education. The function of a university and its graduate education is not only to bring students to a point of information in a field or to a mastery of the techniques that have been used in solving problems; it means to provide information, method, and attitude together in the recognition that problems do not present themselves made-and that inquiry and research depend on finding them and analyzing them into appropriate concepts and procedures which open the way to new discoveries.

In considering our current programs of study at the graduate level, we must be prepared to ask ourselves how effectively we are now implementing that ideal and whether there are ways in which it may be more closely approached in practice. The second of these characteristics, a creative tension between disciplinary and extra-disciplinary concerns, has been cultivated at the University of Chicago over many decades and with remarkable success. It forms a central feature of what the University stands for in the tradition of American higher education. This kind of tension goes beyond the more or less mechanical efforts to link neighboring disciplines that often pass for "interdisciplinarity." It involves the urge to advance particular disciplinary claims and methods of inquiry as far as and as vigorously as possible—thereby testing them to their theoretical limits—while still maintaining the contrary urge to subvert all disciplinary claims to hegemony by subjective them to critical supra-disciplinary scrutiny and radical cross-disciplinary challenge. This critical self-

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consciousness regarding the nature of the disciplines is not a quality we can afford to lose.

The third of these characteristics, the blurring of the line between the creation of knowledge and its transmission through the active participation of teacher and student in the practice of research, lies at the heart of our tradition as a research university. In graduate education, learning and creating new knowledge are so intertwined that they cannot be separated. It is for this reason that the common characterization of graduate study as a form of apprenticeship remains apt as in the familiar mechanical arts, an apprentice learns by doing, and the relationship between master and novice is all important. A successful program of graduate education recognizes this feature of the educational process and blurs the distinction between faculty member and student for the purpose of creating a collegial spirit. There are, of course, senior and junior colleagues in any such endeavor; but there are also partial and sometimes complete role inversions, as student progresses from novice to master of the art, and teacher learns from student.

It follows that the relationship between student and teacher is most rewarding at the graduate level, and the consequent education most fruitful, in an environment that he or she has the ability to do so; and is intellectually and emotionally supported in a continuous, collegial climate of inquiry and investigation. The precise structure and organization of this kind of environment will naturally vary among the different parts of the University, according to the different fields of intellectual endeavor within which it is cultivated. But the University's success as a center of graduate education depends upon its achievement and continued preservation in every field in which its faculty is engaged.

II. The Ends of Graduate Education

Having stated the end of graduate education at the University of Chicago as we understand it in general terms, we wish now to review the various ends towards which it may be directed, considering them in the light of the University's own institutional goals, and the needs and interests of its students. We begin with the more traditional activities for which graduate school has been regarded as the preparation—research and teaching at the university and college level—before turning to the question of the relationship between graduate education and non-academic careers.

Advancing the Research Tradition

Graduate education as we know it in the United States was created to advance the pursuit of knowledge and understanding by training successive generations of scientists and scholars. That was the prime directive that by the early members of the faculty assembled by William Rainey Harper at the University of Chicago. The sociologist Albion Small spoke for them with a religious zeal in his characteristic proclamation of 1905:

The prime duty of everyone connected with our graduate schools is daily to renew the vow of allegiance to research ideals. The first commandment with which we propose to graduate schools is: Remember the research ideal, to keep it holy.

In the seventy-five years since that call, scholarly research in this country has achieved a degree of pre-eminence beyond the dreams of early pioneers of graduate education. Commitment to advancing the research tradition, supported by the resources of a free society, has yielded a rich harvest in the discovery of new knowledge and the creation of new fields of inquiry, in the systematic ways in which we learn from human experience and address the natural universe, in the enlargement of human capacities and understanding in every field of endeavor. The work of the University of Chicago is writ large in the history of these achievements.

As an international center of research and learning, the University of Chicago is founded on the proposition that the free advancement of knowledge and understanding is a fundamental good, in and of itself. As a private institution, it is sustained by the belief that its continued existence under conditions that assure its institutional autonomy and intellectual integrity can be justified only by a claim to outstanding achievement in the pursuit of that goal. As a modern university, it draws upon human energies and resources in the conviction that it exercises a vital role and responsibility in the process by which cognitive capacities are expanded and placed in the service of human society at large. A society like our own cannot maintain its strength and vitality, enhance its creative capacities, or pursue the goals of civilized life, without a vigorous tradition of research and scholarship able to sustain the flow of new ideas, critical thinking, and disciplined intelligence. In this respect, we reiterate the claim of an earlier committee on graduate education at the University of Chicago:

[The] character of the University has a significance which extends beyond the apparently limited questions of graduate education and research, even though the problems of the University appear only as such, because the perpetuation and resolution of the most significant issues of our time depend in large degree on the formulation of fresh questions, the acquisition of new knowledge, and the advancement of scientific knowledge.

It is, of course, true that a substantial portion of the research conducted in this country no longer occurs within the confines of the universities. Government and corporate laboratories in the natural sciences, institutional research agencies and private research groups in the social sciences, libraries and museums in the humanities, make distinct contributions to the common fund of knowledge and understanding to advance their own goals and purposes. More generally, knowledge plays such a powerful instrumental role in modern society that the activities of inquiry and investigation are necessarily diffused widely throughout the social system. But a research university like our own nevertheless exercises a critical and quite distinctive responsibility. It serves as a principal center of fundamental research in the arts and sciences, dedicated to a pursuit of principles of understanding free of instrumental constraints. In doing so, it prepares the future scholars and researchers whose knowledge, intelligence, and imagination must continue to expand our ability to understand and shape the world in which we live, whether they go on to pursue their research careers within the university context or outside it.

These two activities are intimately related. The advancement of knowledge and understanding, as of their potential to enhance human life, rests essentially upon the constant search for conceptual principles and imaginative insights that transcend and transform accepted facts. The expectation that research universities attract some of the best minds of each generation to the challenge of research and scholarship, readying them to advance beyond the frontiers before which we now stand. Conversely, the fruitful applications of fundamental knowledge to the immediate issues upon which it may be brought to bear depend upon an understanding of the relevant principles of knowledge in themselves, and a disciplined ability to identify questions and solve particular problems of light on the whole. These are the capacities developed by individuals trained in the practice of scholarly research. For these reasons, graduate education in the arts and sciences remains critical to our human destiny. Unless its vitality can be maintained at the highest level, we face the danger of intellectual stagnation emphasized by Toqueville many years ago:

If the light by which we are guided is ever extinguished, it will be extinguished by degrees, and of our own doing. By dint of close adherence to mere applications, principles would be lost sight of, and when the principles were wholly forgotten, the methods derived from them would be illusory. New methods could no longer be invented and men would continue, without intelligence and without art, to apply scientific ideas which they no longer understood.

In the decades following World War II, the ability of this and other leading research universities in the United States to pursue these fundamental goals was fostered by increased public commitment to the funding of basic research, vigorous support for graduate education from the principal private foundations, and a pattern of demographic growth that brought expansion throughout the system of research universities. The greater availability of fellowships for graduate study and improved prospects for academic employment attracted students in unprecedented numbers; research and scholarship were supported in ways that established American leadership across a broad range of academic disciplines. Since 1970, these conditions have changed. The demographic basis of higher education has shifted radically in the past decade, in ways that have been considered in an earlier chapter of this report. As a result, diminishing academic job prospects have discouraged many able potential students from embarking upon a graduate education in the arts and sciences. At the same time, government funding for basic research has failed to keep pace with inflation. As reported by the Committee on Government Funding of Research and Education (Sachs Committee) in 1980, federal obligations for the support of academic science increased by about 48 percent between 1971 and 1977, as compared with a growth of 114 percent in total federal obligations and of 58 percent in inflation as measured by the GNP deflator. Within the same period, fellowship and training funds for academic science decreased markedly, by almost 52 percent.8 This latter figure is only one indication of the severe decline in the number of fellowship support in the past decade. In 1970, the National Science Foundation awarded 1,198 fellowships to students beginning graduate work in the arts and sciences, and social sciences by 1981, the number of new fellowships awarded had fallen to 430. In 1971, as many as a thousand talented students received fellowships to begin doctoral study in the arts and sciences from Woodrow Wilson, Ford Foundation, and Danforth Foundation fellowship programs; today none of these fellowship programs remains in existence.9 In a period during which the costs of graduate education have been rising sharply, availability of fellowship support for the preparation of a new generation of scholars and researchers has been sharply curtailed in many fields.

If public support for scholarly research in the arts and sciences has failed to keep pace with inflation in the 1970s there is a considerable danger that it will suffer still further in the future, in the face of growing national concern in the 1980s. Current reductions in the budget of the National Science Foundation will have serious implications, par-

*The recent announcement of a new five-year program of Mellon Fellowships to the Humanities therefore represents a significant reaffirmation of the continuing importance of fellowship support for graduate education, supported by the Andrew W. Mellon Foundation and administered by the Woodrow Wilson National Fellowship Foundation, will offer 180 to 125 fellowships per year beginning in 1981-82.
particularly for the behavioral and social sciences that were designated by budgetary officials for special pruning. The shrinking ability of the National Endowment have grave consequences in many fields of humanistic research, which we are engaged. As faculty members, we must ask whether Divisional and departmental structures and areas in which the period of academic expansion has been combined with college and university teaching rather than confined to specialized research affiliations or impede the development of new forms of inquiry and understanding.

In the course of the present report, this Commission will present a number of particular arguments and proposals related to these matters, as we have come to perceive them in the four Divisions. More generally, we regard it as imperative that each faculty body evaluate in proportion to and in the light of its own strengths and weaknesses in teaching and research, the opportunities and problems it anticipates in the coming years. To the extent that these considerations are rigorous and realistic, they may be far from easy and will certainly be time-consuming. Nevertheless, we regard this process of self-evaluation as essential now if the University is going to maintain its distinctive intellectual vitality in the uncertain years to come. We recommend that each department or committee initiate an evaluation of its graduate programs in response to the questions raised in the recommendations offered by this Commission.

We also note with dismay that earlier procedures providing for the regular evaluation of departments by visiting review committees have been neglected in recent years. We regard systematic visits by such committees—preceded by an appropriate self-study on the part of the department—very much as a sine qua non of the sustained search for new knowledge and understanding, and of the translation of the fruits of that search into the service of society at large. At the same time, it should continue its active efforts to secure the beneficence of corporate, foundation, and individual donors in support of its own distinctive vision of intellectual excellence.

By large, responsibilities such as these are entrusted to the President and other administrative officers of the University. The faculty has the still graver responsibility of preserving the vitality of the University's special tradition of research and scholarship, insisting upon the achievement of its standards of scholarly excellence in every field of intellectual endeavor in which it is engaged. As faculty members, we must identify the strengths and weaknesses of our current efforts to advance the tradition of research and scholarship, and we must assure ourselves that we are making the most effective use of our intellectual and material resources. We must consider whether the graduate education we now offer is most appropriately conceived and organized to prepare the next generation of scholars and researchers in fields of study that we shall be called upon to redefine and reshape in the coming decades. We must ask ourselves whether Divisional and departmental structures still correspond to intellectual practices or requirements, whether disciplinary boundaries are shifting in ways that suggest the need for new institutional arrangements, whether current organizational habits obscure or impede the development of new forms of inquiry and understanding.

In the course of this century, the Ph.D. has become the customary prerequisite for a career in college and university teaching in this country. Academic research has been combined with college and university teaching rather than confined to specialized research programs, with the research training and intellectual formation required for the Ph.D. degree. This development has not occurred without more or less continuous criticism. Some critics have insisted that the research training associated with the Ph.D. does not prepare its recipients for undergraduate teaching and might even be inimical to their subsequent performance as college teachers. Others have argued that the research ideals which the Ph.D. degree enshrines should not themselves be perverted by the degradation of the Ph.D. into vocational training. All have agreed that what William James early characterized as "the Ph.D. octopus" has taken hold as preparation for college teaching without being specifically designed for that purpose.

In the 1950s, as it became clear that the nation faced a rapidly growing demand for college teachers, arguments that the Ph.D. was inadequately conceived to meet this demand emerged. More recently, it has been argued that the Ph.D. is no longer adequate for the professional world in which we live. In the late 1980s, the commonly accepted projections suggest that the demand for new faculty will not begin to grow steadily again until the 1990s. The uncertainties inherent in these projections have already been emphasized; and it would be misleading to suggest that there will be no teaching positions available. There will doubtless be considerable variation from field to field. Nevertheless, it is imperative that the faculty of this University ensure that its students are prepared as effectively as possible to pursue those academic jobs that will become available and to occupy them with distinction.

How should this be accomplished? First, we should maintain the highest intellectual standards in any of the graduate programs we offer; excellence will continue to be the hallmark commodity in the academic market place. Second, in the course of the process of self-evaluation recommended in the preceding sections of this report, we should seek to identify those programs and areas in which the period of academic expansion has fostered a drift towards specialization that is neither intellectually defensible nor competitively advantageous for individual students. In a period of relatively diminished resources, colleges and universities making fewer new appointments to academic positions will not be content with narrow competence. They will look for teachers and scholars able to communicate a sense for the shifting boundaries of knowledge and for the development of a broad intellectual context, to pursue issues and ideas that will cut across existing fields and challenge conventional ways of thinking. In some areas of the behavioral and social sciences, particularly, we are already beginning to see far broader job descriptions than we have become accustomed to, and the signs of a revival of interest in general education at the undergraduate level suggest that this tendency may continue to grow.

Third, we should seek to place increased opportunities for our graduate students to gain research experience. Such experience is valuable for a number of growing subject, to shake himself free from the notion that it must always be as it now is, to prepare him to spend the rest of his life learning more about it as it progresses or retrogresses. Such a degree should concentrate at once on the frontiers of the chosen subject, as it advances into the darkness, and on its boundaries—its relationships, actual and potential, to other subjects. It should, once more, prepare the teacher for future learning, by making it plain to him that the teacher's (and the student's) task is not to steadily sympathize with the intellectual problems of his colleagues, to talk with them and with their students about problems in more or less subject-boundaries.
reasons. As teachers, we know that learning and teaching are intimately related. The teacher creates and recreates the subject taught in the act of teaching it. It becomes the teacher who, in the process of being presented to others. A graduate student given the opportunity to teach is obliged to choose what is fundamental and what accidental in the relevant field of study, to decide what problems are most critical for the understanding of the subject at hand and how the issues they raise can be developed most clearly. The result is an enhanced understanding of the field of study as a whole, and a greater awareness of intellectual inquiry as an open activity constantly changed and reshaped by decisions as to what is important. In addition, the opportunity to participate in teaching develops a graduate student's ability to communicate with others, to engage their views without diminishing their personal worth, to continue to love and respect the ideas of others, to explore the boundaries of knowledge. We must therefore emphasize that we are not advocating the introduction of teaching assistants to replace the full-time instructor. We believe that the general question of graduate students teaching is intimately related. The teacher creates and recreates the subject taught in the act of teaching it: it becomes one's own in the process of being presented to students.

We recommend that a committee of this kind be asked to meet systematically with faculty bodies in the four Divisions in order to stimulate proposals for the creation of graduate student in undergraduate teaching.

One way of responding to this situation would be to reduce requirements in other fields, in which graduate training has prepared students particularly for academic careers. This would mean adjusting our graduate enrollments to the projected demand for academic positions, admitting only those students we could expect to place in the traditional academic fields, or whose training would give them a skill immediately marketable in the non-academic world. In any case, we would object that this arrangement will hardly be more up-to-date in particular respects than that of their recipients the opportunity to present a brief series of lectures on their research under the auspices of their department or Division, thereby providing a measure of distinction to the best students while offering an opportunity to develop teaching skills. It will, of course, be objected that this arrangement will hardly benefit more than a few students, and that it may be more fruitful and more appropriate to the University's traditions, for faculty in different fields to develop a variety of particular opportunities of this kind than to imagine a general program applicable to all graduate students across the board. But we urge a consideration of arrangements that might also provide opportunities for graduate students to gain teaching experience in other contexts than undergraduate teaching in the College.

Graduate Students in the College presented by the Hummel Committee in 1979. The committee acknowledged that graduate students do now teach in the College in a variety of capacities and advocated the formation of clearer guidelines for the programs in which they are used and the procedures by which they are selected. As a consequence of these circumstances in which "carefully selected graduate students with adequate supervision and guidance are particularly well suited to provide instruction of higher quality" than regular faculty members. And it specifically called for faculty consideration of "innovative ways in which graduate students might enhance the instruction in the College." In response to the Hummel Committee report, the Dean of the College has already created an advisory committee on the use of graduate students as teachers in the College. We recommend that a committee of this kind be asked to meet systematically with faculty bodies in the four Divisions in order to stimulate proposals for the creation of graduate student in undergraduate teaching.

We believe that the general question of graduate students teaching should be considered on its educational merits, quite apart from the issue of financial support. Both teaching experience and financial support are desirable, and the two principal features: they link the financial support of graduate students systematically to the performance of particular teaching obligations; and in so doing they reduce the involvement of full-time faculty necessary to teach relatively large numbers of undergraduate students. Neither of these features seems necessary or appropriate at this University.

Evaluating the College of Arts and Sciences: A Report of the Dean of the College concerning the Use of Graduate Students in the College presented by the Hummel Committee in 1979. The committee acknowledged that graduate students do now teach in the College in a variety of capacities and advocated the formulation of clearer guidelines for the programs in which they are used and the procedures by which they are selected. The committee proposed a model in which "carefully selected graduate students with adequate supervision and guidance are particularly well suited to provide instruction of higher quality" than regular faculty members. And it specifically called for faculty consideration of "innovative ways in which graduate students might enhance the instruction in the College." In response to the Hummel Committee report, the Dean of the College has already created an advisory committee on the use of graduate students as teachers in the College. We recommend that a committee of this kind be asked to meet systematically with faculty bodies in the four Divisions in order to stimulate proposals for the creation of graduate student in undergraduate teaching.

It would, however, be a failure of imagination to think of opportunities to prepare graduate students for teaching existing only in the College. There are a number of other contexts in which such opportunities might also be extended or created. Seminars on teaching, of the kind that might review major texts in a disciplinary field or consider more explicitly the pedagogical choices to be made by a teacher presenting various subjects, might provide one way of taking the teaching of our students as a crucial component in the University's Continuing Education programs. Further opportunities to engage in it. Teaching at the graduate level might present another such context. The teaching of languages appears to be an obvious example in the latter respect. As the general level of language preparation in the country declines, we may need; more advanced students could perhaps be more effectively employed. Students in the latter respect. As the general level of language preparation in the country declines, we may need; more advanced students could perhaps be more effectively employed. Students in the latter respect. As the general level of language preparation in the country declines, we may need; more advanced students could perhaps be more effectively employed.
individual graduate student and for the University. A strategy of planned shrinkage assumes that we can predict the academic market five or ten years from now accurately enough to determine our prospective share in the number of academic jobs in a great variety of fields. Such accuracy is unlikely, and would in any case presuppose a questionable assumption that the effect of a reduction in the number of academic jobs should be shared equally among all graduate schools. This is not an assumption we should be willing to accept. It is not simply a matter of self-interest for an institution like our own to make every effort to attract a larger share of a diminishing pool of qualified potential students, or to insist that the education we have to offer is superior to that now provided in many institutions that entered the field of graduate education in the expansionary years of the 1960s. It is not necessarily practical to dismantle valuable resources of scholarly inquiry, which would take many years to rebuild, in response to relatively short-term constraints. Nor is it, in any event, fair to argue that the life of a first-rate university depends upon the continued cultivation of vigor and creativity across a broad range of the arts and sciences, not simply upon intensive exploration of critical problems within specialized fields. American intellectual preeminence has been realized in large part by the creation and preservation of such resources.

The alternative to the strategy of planned shrinkage also assumes that we can identify from the outset those graduate students who will be among the very best scholars and researchers, and that the ability to do so strong enough to do this. A recent review of efforts to measure the relationship between criteria of selection for graduate school and scholarly achievement, in graduate school and beyond, reaches the conclusion that "above a certain minimum threshold, neither GRE scores or college grades give clear signals about who will be the stars in graduate school or, more importantly, who will be the stars in academic careers five or ten years out."¹¹ Such considerations suggest that a policy of drastically reducing graduate enrollment might well undermine some of the potentially most able students, without necessarily ensuring eventual academic employment for those admitted.

The possibility of a strategy of planned shrinkage is to consider bold initiatives that recontextualize graduate education more generally. Our situation is not unique. There is no reason why imaginative formulations should speak only to our own condition rather than that of graduate education nationally. Other leading universities face similar problems. Why can we not avoid our strategy of "two-track" education, more clearly visible from the very beginning of students’ graduate careers to consider and prepare for the possibility of non-academic employment.

On the contrary, the University should foster more open discussion of the relationship between academic and non-academic career possibilities from the very beginning, encouraging students to consider the variety of career goals that may be open to them, and establish clear paths in the organization of academic programs at which they can evaluate their progress and review their options. It is not necessary to diminish the value and importance of the academic careers to which many of our students remain firmly committed, or to belittle their aspirations, in order to suggest that non-academic career outcomes need not be a cause for grief, or that intellectual life does not stop at the walls of the academy. We should not allow a student to think that he or she should be getting an academic job wherever the odds, only to feel betrayed at the moment of graduation if such a job fails to materialize. Multiple career options therefore need to be made more clearly visible from the very beginning of students’ programs of study. They need to be kept visible during students’ progress in graduate school, by counseling and career workshops, to encourage students to define alternative career goals and develop a flexible range of intellectual capabilities; by opportunities for internships in non-academic settings that will allow for exploration of potential career possibilities and the acquisition of experiences and capabilities appropriate to them; through departmental and Divisional newsletters and contacts between students and non-academic fields who can provide advice and help. We regard an expanded role for the Career Counseling and Placement Office, sensitive to the differing needs and interests in the four Divisions, as imperative in this respect. We also believe that several of the activities now carried out by the Center for Continuing Education may either conform to or be realized for graduate students to develop their capacity to bring their knowledge and training to bear upon issues and problems presented in a non-academic context.

Alternative 2: "Double-Track" Arrangements. A second way of proceeding, which has the virtue of bringing the possibility of non-academic careers to students’ attention from the beginning of their graduate education, would be to establish a "two-track" (or "working track") system of graduate education. One track would concentrate on equipping the prospective Ph.D. for academic teaching and research, the other...
would offer a training suitable for students planning to pursue non-academic careers. Provided there were broad, common introductory training, and plenty of opportunities for students to move between the strictly vocational (academic) track and the more broadly educational (liberal) track, such an arrangement would have the great merit of postponing the moment at which the graduate student had to choose finally between the academic and the more broadly educational or dissertation? We have already argued that, even from the point of view of training teachers, scholars, and researchers, we should broaden the graduate training we offer; that whether a dissertation topic is "narrow" or "breadth" lies less in the specific nature of the topic per se than in the conception of the problem which makes it worthwhile. In this respect, there seems little basis for distinguishing between the two possible tracks in graduate education at the University of Chicago. Would the non-academic track, on the other hand, be more "technical" in developing particular skills that are applicable in the non-academic contexts, while the academic track remained more "theoretical" in its orientation? This kind of distinction might well support a clearer demarcation between an initial M.A. level training, which would teach technical disciplinary concepts and skills necessary for academic careers. The academic expansion of this kind attractive and important for faculty and students may bring with them, or that faculty primarily engaged in graduate education in the arts and sciences have no contributions to make in this respect. There are many areas of law and business in which the their interests and sense of career options develop. Our faculties of business, or banks with European interests. There are many areas of the humanities and social sciences which would offer a training suitable for students planning to pursue non-academic careers if they were combined with elements of a professional school training. A doctoral program in Law and Social Policy, for example, might combine a legal education with training in one or more social-scientific disciplines. A doctoral program in International Studies might, in its turn, combine aspects of the study of European (or Asian) languages, history, and culture with training in international finance or international law. A doctoral program in Science and Social Policy might combine law and business training with study fields in the arts and sciences relating to issues of environmental policy, health care delivery, patent law, and technological innovation. A doctoral program in Law and the Humanities might foster investigation of the relationships between law and literary criticism, rhetoric, and other humanities, history, and culture with training in international finance or international law. A doctoral program in Law and Social Policy, for example, might combine a legal education with training in one or more social-scientific disciplines. A doctoral program in International Studies might, in its turn, combine aspects of the study of European (or Asian) languages, history, and culture with training in international finance or international law. A doctoral program in Science and Social Policy might combine law and business training with study fields in the arts and sciences relating to issues of environmental policy, health care delivery, patent law, and technological innovation. A doctoral program in Law and the Humanities might foster investigation of the relationships between law and literary criticism, rhetoric, and other humanities, history, and culture with training in international finance or international law. A doctoral program in Science and Social Policy might combine law and business training with study fields in the arts and sciences relating to issues of environmental policy, health care delivery, patent law, and technological innovation. A doctoral program in Law and the Humanities might foster investigation of the relationships between law and literary criticism, rhetoric, and other humanities, history, and culture with training in international finance or international law. A doctoral program in Science and Social Policy might combine law and business training with study fields in the arts and sciences relating to issues of environmental policy, health care delivery, patent law, and technological innovation. A doctoral program in Law and the Humanities might foster investigation of the relationships between law and literary criticism, rhetoric, and other humanities, history, and culture with training in international finance or international law. A doctoral program in Science and Social Policy might combine law and business training with study fields in the arts and sciences.
would offer a training suitable for students planning to enter non-academic careers. Provided there were broad common introductory training, and plenty of opportunities for students to move between the strictly vocational (academic) track and the more broadly educational (liberal) track, such an arrangement would have the great merit of postponing the moment at which the graduate student had to choose finally between the academic and the non-academic route.

The difficulty in developing this kind of program lies in defining precisely the differences that would obtain between the academic and non-academic "tracks." Would the non-academic track be more general in its approach to the field of study and less narrowly specialized in the scope of the topics chosen for the dissertation? We have already argued that even from the point of view of training teachers, scholars, and researchers, we should broaden the graduate training we offer; whether a dissertation topic is "narrow" or "broad" lies less in the specific nature of the topic than in the conception of the problem which makes it worthwhile. In this respect, there seems little basis for distinguishing between the two possible tracks in graduate education at the University of Chicago. Would the non-academic track, on the other hand, be more "technical" in developing particular skills that are more immediately applicable in the non-academic contexts, while the academic track remained more "theoretical"? This kind of distinction might well support a clearer demarcation between an initial M.A. level training, which would teach technical skills and competencies necessary for the academic and non-academic practice of that discipline, and a more theoretically advanced doctoral training. But it does not seem an adequate basis for distinguishing between the academic and non-academic tracks.

It would also be desirable to offer students in such programs—and in others—the opportunity to pursue courses in the professional Schools, thereby allowing them to acquire in the course of their doctoral training the knowledge and capabilities helpful to the realization of its full potential in a variety of non-academic contexts. We think it more appropriate to encourage interested students to do part of their work during their graduate studies than to expect them to seek in the post-P.h.D. training considered as the first alternative above. We recommend that individual students be allowed greater flexibility to cross the lines between the graduate Divisions and the professional Schools as their interests and sense of career options develop.

Alternative 4: Joint Graduate-Professional School Programs. A fourth way of proceeding would be to reconsider the relationship between graduate education and professional education more systematically. Such a reconsideration might begin by recognizing the common condition of professional education and graduate education in the arts and sciences: a tendency toward excessive narrowness in both. Professional education has grown dramatically in recent years. Graduate business schools have multiplied. Law schools enrollments have doubled. Medical schools enrollments have more than doubled. As a result of this expansion, it is probable that professional education now attracts a much more diversified student body than it did ten years ago. It is true that professional education has yet adapted to the goals and interests that the most broadly gaped of these students may bring with them, or that faculty primarily engaged in graduate education in the arts and sciences have no contributions to make in this respect.

With these considerations in mind, it is important to ask whether our programs of graduate study are now organized in a way that approaches as closely as possible the ends of graduate education at the University of Chicago as we have sought to define them. This is not the place to review in detail the organization of every graduate program in the University: the obligation to do so rests with the faculty bodies whose responsibility these programs remain. In what follows, the Commission seeks to foster a broader reassessment of programs and the procedures by which they are extended. In the initial phase, however, it is essential that the student's training not be prematurely narrowed. We urge that any field requires a broad understanding of the nature of the field as a whole, its structure, assumptions, and conditions of existence as an object of scholarly inquiry. The Commission believes that introductory work in some departments has become too narrow in recent years as a result of the specialization fostered by a period of academic expansion. Each department should consider its requirements and offerings with this concern in mind. Such a consideration should form part of the procedures of self-evaluation recommended previously in this report.

Achieving Intellectual Breadth. Understanding one discipline or field of intellectual interest also implies an informed awareness of others that may share common methods and assumptions, or compete for the same terrain with entirely different cognitive tools. It is important for students to recognize that disciplinary approaches are not given but created, that they exist in a constantly shifting relationship to others that is never more than partially understandable, and that disciplinary confraternities are at constant risk of degeneration into outmoded sovereignties. Since intellectual creativity does not permit privatization to which it ascribes, it is important for students not to allow our students to be constrained by them. This postulate has both negative and positive implications. Negatively, it means that departmental degree requirements should not lead to the appointment of a committee, including appropriate Deans, to create the arrangements necessary to establish such programs.

C. Some Further Recommendations

With these considerations in mind, it is important to ask whether our programs of graduate study are now organized in a way that approaches as closely as possible the ends of graduate education at the University of Chicago as we have sought to define them. This is not the place to review in detail the organization of every graduate program in the University: the obligation to do so rests with the faculty bodies whose responsibility these programs remain. In what follows, the Commission seeks to foster a broad reassessment of programs and courses of study by raising issues and offering further recommendations regarding structure, organization, and curriculum in general terms.

Avoiding Premature Specialization

Graduate education rests upon the cultivation of intellectual breadth and disciplinary competence. In pursuit of the latter, our programs of study appropriately begin with an introduction to well-defined bodies of knowledge, the principles upon which they are based, and the procedures by which they are extended. In the initial phase, however, it is essential that the student's training not be prematurely narrowed. We urge that any field requires a broad understanding of the nature of the field as a whole, its structure, assumptions, and conditions of existence as an object of scholarly inquiry. The Commission believes that introductory work in some departments has become too narrow in recent years as a result of the specialization fostered by a period of academic expansion. Each department should consider its requirements and offerings with this concern in mind. Such a consideration should form part of the procedures of self-evaluation recommended previously in this report.
no less essential. We urge Deans to assume greater responsibility for common curricular matters at the Divisional level.

Clariﬁying Master’s Degree Programs Appropriately broadened, the initial phase of graduate education in the humanities and social sciences should be seen as necessary for further academic work, a valuable preparation for many non-academic endeavors, a desirable means of general intellectual development. Whatever the case, its completion should be clearly deﬁned and measured by the requirements of an M.A. degree, providing faculty members with a formal opportunity to encourage (or discourage) a student to proceed further, and allowing students an appropriate moment to consider their options and commitments. Graduate education is costly; it demands the investment of valuable institutional and personal resources. Given the nature of the personal and professional choices involved, we should make sure that this initial phase of our training is rigorous and demanding enough that the students who choose to discontinue their graduate education at this point do so with a sense of accomplishment and enhanced capacities, while those students who continue to move on are advanced graduate work are clearly deﬁned to do so.

In the headier days of the 1960s and 1970s, there was a tendency in some departments to relax the emphasis on the M.A. degree and minimize its importance in relation to the Ph.D. The Commission believes that this tendency, where it exists, should be reversed. The M.A. degree should be seen as a capstone prize, not a mere exit ticket on the one hand, or as a simple formality on the way to the Ph.D. on the other hand. M.A. programs need to be clariﬁed, where necessary, to represent rigorous and demanding courses of study, completion of which should provide clear evidence regarding a student’s potential for advanced research. M.A. programs should be completed within a maximum twenty-seven course requirement with an equivalent residency requirement of nine quarters. We also recommend that formal course work required for the Ph.D. (including M.A. requirements) normally not extend beyond a period equivalent to six quarters full-time residency at a normal load of three courses per quarter. At the end of this period, students should be formally admitted to doctoral research on the basis of demonstrated achievement and clear promise of research ability. Unless explicit permission is granted to the contrary, students denied formal admission to doctoral research will be expected to terminate their graduate study at this point.

Improving the Context for Graduate Research in the Humanities and Social Sciences The research phase of graduate education should not, however, be deﬁned in terms of the mere cessation of course work. Noble though it be, the Humboldtian ideal of “loneliness and freedom” is not an adequate basis for the organization of graduate work at this critical stage. Students challenged to pursue signiﬁcant problems in pursuit of a continuous and collegial context of research activity, in which topics for dissertation research can be formulated and defended as advancing important intellectual concerns at critical points. Students in this dissertation frame rely on the ﬁrst year for the difficult and often frustrating conduct of an extended research project; they need a sustained, structured environment which eﬀectively and emotionally supports from faculty and student colleagues. Students expected to develop a self-conscious understanding of the intellectual activity in which they are engaged need an opportunity to participate in its deﬁnition through dialog with other scholars.

In the natural sciences, this kind of systematic and sustained environment for graduate research is typically provided by the laboratory and research institute, which students enter relatively early in their careers. In the humanities and social sciences, on the other hand, such contexts rarely exist outside a few ﬁelds. Course work is a means to an end: its continuation beyond a certain point delays commitment to a research problem without enhancing the imaginative ability to deﬁne one. The University would make this much clearer to its students by abandoning the formal twenty-seven course requirement now in eﬀect as a prerequisite for the Ph.D. degree. In the natural sciences, that requirement has no real meaning in terms of the actual practice of graduate research training beyond the ﬁrst year. In the humanities and social sciences, it too often encourages students to delay their dissertation activity, in which topics for dissertation research are identiﬁed, for two years. While clarifying the structure of existing M.A. programs, the Commission believes that M.A. programs should be completed within a maximum twenty-seven course requirement with an equivalent residency requirement of nine quarters. Where necessary, programs should be clariﬁed, where necessary, to represent rigorous and demanding courses of study, completion of which should provide clear evidence regarding a student’s potential for advanced research. M.A. programs should be completed within a maximum twenty-seven course requirement with an equivalent residency requirement of nine quarters. We also recommend that formal course work required for the Ph.D. (including M.A. requirements) normally not extend beyond a period equivalent to six quarters full-time residency at a normal load of three courses per quarter. At the end of this period, students should be formally admitted to doctoral research on the basis of demonstrated achievement and clear promise of research ability. Unless explicit permission is granted to the contrary, students denied formal admission to doctoral research will be expected to terminate their graduate study at this point.

Notes
1. Murphy and Bruckner, The Idea of the University of Chicago, p. 67.
3. The Idea of the University of Chicago, p. 65.

Chapter 4: The Graduate Student Body

The University is the entire body of men and women, faculty and students... who have been here for the common purpose of attainment in a higher intellectual life, with the common purpose of adding to knowledge by research. President Judson, speaking to the Harper Memorial Student Body Meeting, 15 January 1906.

In the preceding chapter of this report, we have described the idea of graduate education at the University of Chicago in relatively general terms. We wish now to consider its current state more closely. In this chapter, we address questions relating directly to the recruitment, ﬁnancial support, and institutional needs of the graduate student body. In the following chapter, we turn to the principal issues facing each of the four Divisions.

One aim of the Commission’s work has been to gather reliable data regarding the character, needs, and interests of our graduate student body. For that purpose, we surveyed three groups of prospective students who declined admission to the University to begin graduate study in the Fall of 1980; students who accepted admission to the University but began graduate study in the Fall of 1980; a sample of all graduate students registered in the Winter of 1981. A fuller description of these surveys, and of the data obtained, is presented in some detail in Appendix B. This chapter draws on those results and on other information gathered in the course of our inquiry.

A. Recruitment

Our discussion of recruitment is based on a study of
some 2,026 applicants to whom the University offered admission for graduate work in the four Divisions in the academic year 1980-81. Of this group of 2,026 applicants, 107 (6 percent) were offered admission to the Biological Sciences Division, 300 (14 percent) to the Physical Sciences Division, 611 (30 percent) to the Humanities Division, and 1,008 (50 percent) to the Social Sciences Division. As illustrated in Figure 1, 44 percent of those offered admission to the Biological Sciences Division accepted this offer and entered the University, as compared with 32 percent in the Physical Sciences, 28 percent in the Humanities, and 54 percent in the Social Sciences. In order to evaluate the University’s ability to recruit a strong graduate student body, we set out to ask how those students who accepted admission to graduate study here differed from those who declined, on what grounds they made their respective decisions regarding graduate study at the University of Chicago, and whether there were actions to be taken that would improve the attractiveness of the University to prospective graduate students of high academic promise.

Our general conclusions are the following. First, since prospective graduate students are attracted to the University of Chicago principally for its academic excellence, it is imperative—if the University is to continue to recruit a strong graduate student body—to maintain the intellectual strengths it now enjoys and to extend that strength wherever possible. Second, while the overall academic quality of the students we recruit remains relatively high, we need to improve our ability to attract the very best prospective students in the diminishing national pool. Third, inadequate financial aid remains an important obstacle to attending the University, particularly in the Humanities and Social Sciences Divisions; but increased financial aid will not attract the best students in the absence of academic quality and effectively organized programs of graduate education, both of which need to be improved in some areas of the University. Fourth, recruitment procedures need to be scrutinized for ways in which the University might more effectively attract promising students. In what follows, we review some of the evidence that leads us to these conclusions. Our recommendations regarding graduate student recruitment then begin on page 119.

Applying to the University of Chicago
As Figure 2 makes clear, prospective graduate students who were offered admission to the University of Chicago in 1980-81 stated that they applied principally on the basis of its academic reputation in their particular field of interest, its overall reputation, and the encouragement of former teachers (in that order of importance).1 Relatively few of these prospective students stated they applied because their choice of graduate school was restricted geographically, though not surprisingly the proportion of applicants who gave reputation as the reason was higher among those who accepted admission than among those who declined, particularly in the Biological and Social Sciences Divisions. By and large, then, prospective graduate students gave reasons for applying for admission to the University consistent with its stature as a major research institution. They were, of course, some differences among the four Divisions in this respect. Applicants to the Biological Sciences Division were less likely than those to other Divisions to report encouragement from their former teachers; and those who declined admission to this Division were more likely to list the University’s overall reputation than its strength in their particular field of interest as a reason for applying. The numbers are relatively small in the Biological Sciences Division, and these data must therefore be treated with appropriate caution, but they suggest perceptions of the quality of that Division with which the University must be concerned. On the other hand, students who accepted admission to the Biological Sciences Division were more likely than other applicants to report that they had been encouraged to apply by a member of the University faculty. A relatively small proportion of applicants to other Divisions reported that they had been encouraged to apply by University faculty or alum.

Whether or not they accepted an offer of admission, applicants to the Biological Sciences Division were also far more likely than others to have visited the cam-

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1 It should be noted that when we refer in this discussion to the 1980-81 applicants, we mean only those actually offered admission. Our respondents within that group, especially among those declining admission, were also more likely to have higher G.R.E. scores and a higher offer of aid than non-respondents (see Appendix B, Table 2 and 3). To the extent that these characteristics represent academic quality, the better admittees are therefore somewhat overrepresented in our survey: this is a potential source of bias, but one in the direction of the applicants most interesting to the University. However, students declining admission who were resident outside the United States and Canada were also excluded by the mechanics of this survey.

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Figure 1: OFFERS OF ADMISSION TO GRADUATE STUDY MADE AND ACCEPTED (1980-81), BY DIVISION

<table>
<thead>
<tr>
<th>Division</th>
<th>Percentage of Offers Accepted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological Sciences</td>
<td>50%</td>
</tr>
<tr>
<td>Physical Sciences</td>
<td>40%</td>
</tr>
<tr>
<td>Humanities</td>
<td>30%</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>20%</td>
</tr>
</tbody>
</table>

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Figure 2: Respondents’ Reasons for Applying to the University (1980-81), by Division

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students accepting</td>
<td>100</td>
</tr>
<tr>
<td>Students declining</td>
<td>0</td>
</tr>
<tr>
<td>Encouraged by Alumni</td>
<td>80</td>
</tr>
<tr>
<td>Encouraged by Former Teachers</td>
<td>70</td>
</tr>
<tr>
<td>Encouraged by UC Faculty</td>
<td>60</td>
</tr>
<tr>
<td>Attracted by Overall Reputation of UC</td>
<td>50</td>
</tr>
<tr>
<td>Attracted by Reputation of UC in Field</td>
<td>40</td>
</tr>
<tr>
<td>Previously Attended UC</td>
<td>30</td>
</tr>
</tbody>
</table>

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OF RESPONDENTS

Before deciding on their choice of graduate school (see Figure 5), in the overwhelming majority (83 percent) decided that an institution to more advanced graduate students expected to be able to pursue their academic interests more effectively than elsewhere is important. It could be enhanced, and the expectations it implies yet more fully realized, by the steps this Commission advocates for the improvement of the institutional context the University offers for advanced graduate research.

Academic Criteria

If we set considerations of financial aid aside for the moment, it seems clear that those who accepted the University’s offer of admission and those who declined based their decision on broadly similar academic criteria. Asked to indicate which of a number of considerations was most important to their decision regarding graduate school, our respondents (whether they accepted or declined admission) most frequently selected the University’s program in the relevant field, followed by the quality of the faculty (see Appendix B, Table 10). Program reputation was substantially more important among those accepting admission to the Humanities Division than among those declining, and substantially more important among those declining admission to the Biological Sciences Division than among those accepting. Faculty quality was more important among those declining admission than among those accepting, particularly in the Biological Sciences and Humanities Divisions. Among those accepting admission, the overall quality of the University was the third most important consideration. But among those declining, the opportunity for close contact with faculty was regarded as more important than those accepting. In every Division except the Biological Sciences Division, the opportunity for close contact with faculty was regarded as more important than those accepting. In the Humanities and Social Sciences Divisions, those declining admission were more likely than those accepting to emphasize the importance of opportunities to gain teaching experience (particularly in the Humanities Division) and opportunities for close contact with faculty (particularly in the Social Sciences Division).

Choosing a Graduate School

Students who accepted admission to the University of Chicago in 1980-81 were not notably different, in terms of nationality, sex, or ethnicity, from those who declined. It is important to note that they were slightly older on average, and rather more likely to have a master’s degree. A quarter of the students who accepted admission to the Social Sciences Division, a fifth of those who accepted admission to the Humanities and Biological Sciences, and a sixth of those who accepted admission to the Physical Sciences Division, already held their master’s degree. Asked why they had come to the University of Chicago, entering students who had previously attended another graduate school most frequently responded that the University had a better program in their field (a particularly strong response in the Biological and Physical Sciences Divisions). This attractiveness of the University to more advanced graduate students who expect to be able to pursue their academic interests more effectively than elsewhere is important. It could be enhanced, and the expectations it implies yet more fully realized, by the steps this Commission advocates for the improvement of the institutional context the University offers for advanced graduate research.

Among students who declined admission to the University of Chicago for graduate study beginning in 1980-81, the overwhelming majority (83 percent) chose to enter the same field of study at another graduate school. We must therefore ask why they found another graduate school more attractive, and whether they differed in their criteria for deciding upon a graduate school from those who accepted the University’s offer of admission.

Comparative Evaluations of the University

Perceptions regarding opportunity for close contact with the faculty also emerged as an important factor in differentiating between students accepting and students declining admission when the former were asked to compare the University of Chicago with the institution that was their second choice of graduate school and the latter were asked to compare it with the institution they were planning to attend. Figures 4A—4E illustrate these comparative evaluations of the University by students accepting and students declining admission for graduate study, in the four Divisions as a whole and in each Division separately. In analyzing these figures, it is important to notice that the institutional characteristics evaluated are presented from left to right in each figure in the order of the ranking of their importance in the relevant respondents’ choices of graduate school. Thus these figures offer a general summary of the judgments that entered into that choice, insofar as our study can reveal them.

As illustrated in Figure 4A, students accepting admission to the four Divisions rated the University of Chicago as superior to their alternative graduate school on most of the criteria considered. In their view, it was the most clearly superior on the academic criteria they considered most important—reputation of the program in the field, faculty quality, overall quality of the institution, and opportunity availability of teaching experience and quality of the neighborhood. Matters of housing, the neighborhood, and recreational, social, and cultural opportunities, appeared relatively infrequently as the principal consideration among both groups of respondents.

Clearer differences between students declining and those accepting admission in the four Divisions emerge, however, if we ask the percentage of respondents who included any given consideration as one of the three most important in their graduate school decision (see Appendix B, Table 11). While the quality of the University neighborhood was rarely chosen as the most important consideration, it appeared more frequently among the three most important considerations. In every Division, but particularly in the Biological and Physical Sciences Divisions, those declining admission were more likely than those accepting to include neighborhood quality among their three most important considerations. In the Humanities and Social Sciences Divisions, those declining were much more likely than those accepting to emphasize the importance of opportunities to gain teaching experience (particularly in the Humanities Division) and opportunities for close contact with faculty (particularly in the Social Sciences Division).
tion, and opportunities for interdisciplinary study—as well as on library and research facilities. They rated the University most clearly inferior on quality of neighborhood and on availability of opportunities to gain teaching experience, and less clearly inferior on quality of social life and recreational facilities. Students declining admission agreed with these inferior ratings, faculty, as well as on opportunities to do one's own research, opportunities for early degree, and availability of housing. They rated the University as equal in some important differences among the four Divisions.

1.4 reputation, and opportunity for close contact with faculty, as well as on quality of research facilities and the Humanities Division rated the University as inferior on faculty quality, opportunities for close contact with faculty, and opportunities to do one's own research; Sciences Division rated the University as superior to the graduate school they planned to attend on most academic criteria, including faculty quality and program reputation, but regarded it as inferior on the most important criterion of opportunities for close contact with faculty. They agreed with those accepting admission that the University was clearly inferior on availability of teaching opportunities, but disagreed with them in regarding it as also inferior on opportunities to earn an early degree.

Obstacles to Attending the University

As Figures 4A—4E suggest, however, it is possible to regard the University as superior to an alternative graduate school in a number of respects while still declining an offer of admission. Prospective students who chose not to enter one of the four Divisions were therefore asked to identify which of a number of possible factors were an obstacle to their accepting admission to the University. The responses are illustrated in Figure 5.

Among those obstacles, factors clearly beyond the University's ability to affect (geographical restrictions and family or personal considerations) were relatively unimportant. Disinclination as a result of dealing with the University can surely be alleviated by improved contacts with applicants who have been offered admission. Better information might well reduce the proportion of applicants believing that the University lacks the program they desire. The perception of the University as offering an excessively competitive environment (especially high in the Social Sciences Division) could be modified by policies that would make financial aid more predictable and by institutional changes designed to provide more supportive contexts for graduate work, without compromising our proper standards of excellence.

It is important to note, however, that the most frequently cited obstacles to attending the University were financial. Seventy-five percent or more of those declining admission to the Humanities and Social Sciences Division, as compared with roughly 30 percent of those declining admission to the Biological and Physical Sciences Divisions, reported that financial obstacles of some kind were a factor in their negative decision. Of prospective students declining admission to the Humanities and Social Sciences Divisions who specified the nature of the financial obstacles they encountered, over 75 percent indicated inadequate tuition support or concern about meeting other expenses, over 65 percent indicated concern about incurring debts, over 55 percent indicated concern about receiving aid in future years, and over 40 percent indicated inadequate opportunities for teaching or research assistantships (see Appendix B, Table 18).

If we compare the financial aid offered to students who declined admission to the University with the aid they expected to receive at the graduate school of their choice, the same general pattern emerges. There are difficulties in comparing the overall values of financial aid awards at institutions that may have different tuition rates and different ways of assembling financial aid packages, as we are here obliged to do. For this reason, our data must be treated with caution. Nevertheless, they suggest that, among students who declined admission to the Humanities and Social Sciences Divisions, a higher proportion received smaller awards here than elsewhere and a lower proportion received larger awards here than elsewhere (see Appendix B, Table 23). Among students who declined admission to the Biological and Physical Sciences Divisions, on the other hand, a lower proportion received medium awards here than elsewhere, and a higher proportion received larger awards here than elsewhere. Within the limitations of our data, then, there is evidence to suggest that students declining admission to the Humanities and Social Sciences Divisions tended to receive more substantial aid elsewhere. This does not appear to be the case for the Biological and Physical Sciences Divisions.

Academic Quality of Applicants

This Commission has already stated its conviction that the academic quality of the graduate student body is a more crucial issue for the future of the University than its overall size. Since this is a subject upon which the members of the Commission have been offered much contradictory impressionistic evidence, we have been particularly interested in using our survey of prospective graduate students to arrive at some more systematic information about the academic quality of our applicants. This is difficult, since no altogether satisfactory measure of academic quality exists. We have used GRE scores, college grade point average, the amount of aid offered, and admission to other distinguished

FIGURE 4B: Comparison of the University with an Alternative Graduate School: Biological Sciences Division
graduate schools. The limitations of our data in this respect are discussed in Appendix B.

As Figure 6 indicates, the mean level of GRE scores and grade point averages among the prospective students surveyed was relatively high. Mean GRE Verbal scores for all applicants offered admission ranged from an average of 647 (in the 88th percentile of seniors and nonenrolled college graduates tested, 1977-80) in the Humanities Division, to 603 (80th percentile) in the Biological Sciences Division. Mean GRE Math scores ranged more widely, with an average of 740 (94th percentile) in the Physical Sciences Division, 666 (83rd percentile) in the Biological Sciences, 600 (66th percentile) in the Social Sciences, and 573 (62nd percentile) in the Humanities. In every Division, as Figure 7 indicates, the mean grade point average was close to 3.5 (that is, in the A to B+ range). On average, students declining admission tend to score more highly on these measures than students, accepting admission (although these differences were not always large). This is not surprising, since the best qualified students are also likely to be most competitively sought after by other institutions; and it is consistent with the finding that in the Biological and Physical Sciences Divisions students who declined admission were offered larger financial awards by the University than those who accepted (see Figure 8). In the Humanities and Social Sciences Divisions, on the other hand, students who accepted admission were offered larger awards than those who declined; an indication that the size of financial awards may have been more critical in attracting the better qualified students to these Divisions.

Since the quality of the other graduate schools to which an applicant is admitted may also be a rough indicator of his or her academic quality, we also examined the pool of respondents who were given a choice between the University of Chicago and one or more of the seven other distinguished graduate schools which seemed to represent the strongest overall competition for each Division (for further discussion of this choice, see Appendix B). As illustrated in Figure 9, 47 percent of the respondents offered admission to the Physical Sciences Division were admitted to this University and at least one other of seven competing graduate schools (65 percent of those declining and 24 percent of those accepting), as compared to 46 percent of those admitted to the Humanities Division (60 percent of those declining and 25 percent of those accepting) and 45 percent of those admitted to the Social Sciences Division (60 percent of those declining and 28 percent of those accepting). Among respondents admitted to the Biological Sciences Division, this percentage fell to 29 percent (47 percent of those declining and 9 percent of those accepting.) By this measure, the Physical Sciences Division was competing most intensely for prospective students of high academic quality, and the Biological Sciences Division competing least intensely.

In every Division, however, those accepting admission were significantly less likely than those declining to have been admitted to one of the other distinguished graduate schools used for comparison in this paper. In part, this is explained by the fact that a larger proportion of applicants accepting admission than of those declining applied only to the University of Chicago; in Biological Sciences, 20 percent as compared to 2 percent; in Physical Sciences, 8 percent compared to 0 percent; in Humanities, 24 percent as compared to 4 percent, and in Social Sciences, 26 percent as compared to 3 percent. In part, it is explained by the greater competition among distinguished universities for the best-qualified students. But we can make a rough assessment of how effectively this University was able to compete for these applicants by asking what proportion of the prospective students also admitted to one or more distinguished competing graduate schools chose to attend the University of Chicago, as compared with the proportion we might reasonably expect. On the assumption that the University is competing equally, we should expect it to recruit at least half of those applicants who chose between the University of Chicago and another distinguished graduate school, at least a third of those who chose among the University of Chicago and two other distinguished graduate schools, and so on. By this admittedly tentative measure, the University was somewhat less competitive for the most attractive prospective students than we might reasonably have expected in every Division except the Social Sciences Division (See Table 1). The relevant data for each Division are presented more fully in Appendix B, Tables 9A and 9D.

The data on financial aid awards offered to these students and on the obstacles to attending the University they indicated (see Appendix B, Tables 9B and 9C) suggest that inadequate financial awards may have been the most important factor in this situation, particularly in the Humanities and Social Sciences Divisions. Of the students offered admission to this University who chose to attend one of the other seven distinguished graduate schools used for comparison in their Division, over 60 percent of those declining admission to the Humanities and Social Sciences Divisions stated that financial obstacles were important in their decision, as compared with fewer than 15 percent of those declining admission to the Biological and Physical Sciences Divisions. In addition, among the same group, almost 20 percent of those declining admission to the Humanities and Social Sciences Divisions referred to discouragement as a result of their dealings with the University, while 39 percent of those declining admission to the Social Sciences Division cited a perception of the University environment as too competitive. The proportion of those who felt the University lacked the program they desired ranged from 31 percent of those declining admission to the Social Sciences Division to 57 percent of those declining admission to the Biological Sciences Division. In summary, while the overall quality of the students admitted to the University for graduate study in 1980-81 may not have been as high as the faculty might wish, it appears to have been fairly high. However, our study suggests that the University needs to make a stronger effort to improve its ability to recruit the best qualified applicants in the national pool.

Recruitment Strategies
The ability to attract an outstanding graduate student body is of critical importance in advancing the scholar-
It is therefore essential to ask whether there is a period that is likely to see intensified competition for the best qualified candidates for graduate study in a smaller national pool. The following considerations are most promising students depends in quality of the faculty and their reputation. Strategy, in the long run, is to maintain the overall quality of the faculty at the highest level and to improve by strong new appointments.

Opportunities for Close Contact with Faculty. Finest faculty will attract students only to the extent that they offer a well-conceived academic program. Many prospective graduate students were concerned particularly in the Humanities and Social Sciences Division with this consideration. Students surveyed in this Division also rated the opportunities for faculty contact at the University as worse than they expected. We urge all departments, especially in the Social Sciences, to consider this issue seriously in reviewing the organization of their programs of study.

While the matter of improving opportunities for faculty contact goes beyond recruitment procedures narrowly construed, a practice followed in the Physics Department may provide a model in this respect. Each year a small admissions committee is appointed in that department, with the responsibility not only for admitting the year's group of students but for advising them personally throughout their first year of graduate study until they find individual faculty sponsors for their own research. An arrangement such as this, which gives individual faculty members a sense of personal responsibility for the progress of individual admittees, seems to us to be an admirable one.

Teaching Opportunities. Availability of teaching opportunities was an important consideration for applicants to the Social Sciences, and particularly for applicants to Social Sciences, Humanities, and Social Sciences Divisions. Those who declined admission to the Social Sciences Division with this consideration in mind may not have been entirely misguided: the in-residence students surveyed in this Division also noted the opportunities for faculty contact at the University as worse than they expected. We urge all departments, especially in the Social Sciences, to consider this issue seriously.

University are decentralized, not only by Division but within Divisions. Such an arrangement has the advantage of providing departments with the flexibility to deal with recruitment in ways most appropriate to their particular competitive situation, but it makes overall evaluation of the admissions process difficult and it compounds the problems of ensuring that admittees receive the information and encouragement they may need to enter the University. There are considerable variations in recruitment activities among departments, not all of which seem to result from explicit or deliberate policy decisions. We recommend a thorough review of recruitment procedures at the level of the four Divisions.

A review should concern itself with each of the two broad goals of recruitment: encouraging applications from the widest possible pool of potential applicants; encouraging acceptances from the most promising admittees. We shall consider each of these goals briefly, offering suggestions for further discussion at the Divisional and departmental levels.

(i) Encouraging Applications

Department Publications. Many departments now have brochures or flyers that are sent to institutions from which applicants might be attracted. Some are convivial of the utility of these publications; others are skeptical about their effectiveness, given a situation in which potential applicants may be inundated by publications broadcast from competing institutions. It would be worth considering whether there are more effective means of attracting student interest, perhaps by announcing special areas of current research interest in a more direct way. One faculty member in the natural sciences told us of his surprise when he advertised for a research assistant for a particular project and received many more applications for that job than his department usually receives for Ph.D. training in the same field. This experience may have some useful implications for graduate student recruitment. A circular describing opportunities for current research in a particular field or group of fields might be far more effective in attracting the most ambitious students than a general departmental brochure.

Alumni Contacts. Most departments have not maintained a formal network of contacts with alumni now teaching at undergraduate colleges who might encourage potential applicants to apply to the University. Alumni newsletters, now circulated by some departments, might be more generally useful in this respect. Faculty Recruitment Activities. Faculty traveling to give papers at other universities may have a valuable opportunity to meet with potential applicants for graduate study. They might be particularly encouraged to do so by help with travel expenses in Divisions where help is scarce.

Summer Research Programs. Special summer research programs for undergraduates in some fields could provide an important introduction to the University and its neighborhood for promising potential applicants for graduate study. Such programs may be expensive if considered solely in terms of the yield of graduate students recruited. However, the students so attracted are often among the very best in their cohort; and there are indirect effects that are more difficult to measure.

New Degree Programs. The development of more general degree programs that might be attractive to some potential applicants has been discussed elsewhere in this report. Here we wish to suggest consideration of two degree program options that might be of particular relevance to some departments.

The first involves the possibility of admitting particularly talented students to a combined baccalaureate and graduate degree program. This option is attractive because it allows the University to provide a formal network of contacts with alumni now teaching at undergraduate colleges who might encourage potential applicants to apply to the University. Alumni newsletters, now circulated by some departments, might be more generally useful in this respect.

FIGURE 4. Comparison of the University with an Alternative Graduate School: Social Sciences Division

FIGURE 5: Obstacles to Attending the University Cited by Applicants Declining Admission, By Division
The second involves the possibility of developing programs for individuals currently employed, whose employers might recognize an interest in sponsoring their more advanced training at the Ph.D. or M.A./M.S. level. There may be a growing interest in such opportunities in a decade in which the nation's prosperity is likely to require considerable reinvestment in scientific and technological resources. Such a program is unlikely to be feasible in many fields. But we can offer the example of the Statistics Department, which is entering into a program of this kind with Bell Laboratories.

(iii) Encouraging Acceptances

Ideally, applicants offered admission for graduate study at the University should be able to make their choice on the basis of an informed knowledge of the nature and quality of its graduate programs, and the appropriateness of these programs in light of their own intellectual interests, not on the basis of inadequate information, discouragement resulting from dealings with the University, and outdated perceptions of the nature of the University neighborhood. Our study suggests the need to consider several aspects of our dealings with prospective students from this point of view.

Information Available to Applicants

Roughly 15 percent of the students declining admission felt they had received inadequate information regarding some aspect of our graduate programs. This is not a large proportion, but neither is it one the University can afford to neglect. Nor can the University afford to neglect the much larger proportion of students declining admission who regarded the quality of its neighborhood as a negative factor in their decision. We recommend the publication of an up-to-date pamphlet describing Hyde Park—its advantages and disadvantages as a University neighborhood and the attractions of its location in the city of Chicago—to be included with every offer of admission to the University.

Personal Contacts with Admittees. We are concerned by the proportion of students declining admission who reported that they were discouraged by their dealings with the University. This response was stronger in the Social Sciences Division than elsewhere, and in some departments rather than others. We propose to send the relevant data directly to those departments for which this seems to be a particular issue.

Campus Visits. In some departments, a systematic effort is made to bring the best qualified applicants to the campus each year. Effectively organized, visits of this kind can answer many questions and improve our acceptance rate among the students most competitively sought after by other universities. But they require enthusiastic commitment of faculty time and effort, and could well be counterproductive without it. We recommend energetic experimentation with such visits in departments where they do not now occur.

Financial Aid. Inadequate financial aid appears to have been a principal obstacle to attending the University, among the whole group of those declining admission to the University as among the smaller group of those who were also offered admission to other distinguished universities. Moreover, this appears to have been particularly an obstacle for applicants offered admission to the Humanities and Social Sciences Divisions. It would be naive to think that financial aid alone is the key to graduate recruitment: our study makes it clear that there are many other factors that enter into an applicant's choice of graduate school. Nevertheless, the University is far from the ideal situation in which every applicant it wishes to attract is able to make a decision regarding the University of Chicago on academic grounds alone. Financial aid policy is discussed more fully in a later section of this chapter.

Better Statistical Information. At several stages of this inquiry we have been confronted with the problems of determining if any changes in student quality have taken place, in individual departments, in Divisions, in the University. We have been frustrated by the lack of any uniformly available objective measure of quality, even one so open to problems of interpretation as the scores on past Graduate Record Examinations. To ameliorate this situation for the future, we recommend that the statistical function of the office of the Dean of Students be enlarged to include the maintenance of records of whatever indicators of student quality regularly arrive at the University, including department averages of standardized test scores for both applicants and newly matriculated students. We further recommend the biennial repetition of a survey of applicants to the University, modeled after that performed by this Commission (that involving only a subset of the questions we used and a random sample of applicants).

B. Progress Toward the Ph.D.

In addition to its study of applicants admitted to the University for graduate work beginning in 1980-81,
this Commission also surveyed a sample of all in-resident students registered in the Winter Quarter of 1981. The results of that survey are briefly considered here. They are presented in more detail in Appendix B.

Student Satisfaction with the University

Though there were some Divisional differences, the registered students who responded to our survey were largely satisfied with the University's research facilities, academic programs, faculty quality, opportunities for interdisciplinary study, quality of students, and opportunities for contact with other students (see Appendix B, Tables 27-29). However, at least 20 percent stated that they were not satisfied with the quality of departmental communications (in every Division except the Physical Sciences Division), with the quality of classroom teaching (in the Physical Sciences Division), with opportunities for contact with faculty and the level of faculty interest in students (in the Social Sciences Division), and with the quality of academic advising (in the Humanities and Social Sciences Divisions). The registered students in our sample were also asked to identify the characteristics they considered most important in a graduate school and to indicate the extent to which the University of Chicago had met or exceeded their expectations regarding all five of the characteristics considered most important: faculty quality, opportunities to pursue one's own research, and opportunities for faculty contact. It failed to meet expectations regarding program reputation and financial aid. It received its most positive rating for the quality of library facilities and its most negative rating for opportunities to obtain teaching experience.

In the Social Sciences Division, the University also met or exceeded students' expectations regarding only three of the five characteristics they considered most important: faculty quality, opportunities to do one's own research, and program reputation. It failed to meet expectations regarding opportunities for contact with faculty and financial aid. As in the Humanities Division, it received its most positive rating for the quality of library facilities and its most negative rating for opportunities to obtain teaching experience. We urge faculty in the Four Divisions to consider these matters with some care in the course of the process of self-evaluation recommended earlier in Chapter 2 of this report.

Advancing toward the Degree

Our survey of currently registered students had one serious limitation. It did not include the many graduate students no longer formally registered who are nevertheless continuing with their dissertation research.

In the Biological and Physical Sciences Divisions, the University met or exceeded students' expectations regarding all five of the characteristics considered most important: faculty quality, research facilities, opportunities to pursue one's own research, program reputation, and opportunities for faculty contact. It received the most positive rating from students in the Biological Sciences Division for research facilities, and from students in the Physical Sciences Division for faculty quality and program reputation; it received the most negative rating from students in both these Divisions for the quality of social life on campus.

In the Humanities Division, the University met or exceeded students' expectations regarding only three of the five characteristics considered most important: faculty quality, opportunities to pursue one's own research, and opportunities for faculty contact. It failed to meet expectations regarding program reputation and financial aid. It received its most positive rating for the quality of library facilities and its most negative rating for opportunities to obtain teaching experience.

In the Social Sciences Division, the University also met or exceeded students' expectations regarding only three of the five characteristics they considered most important: faculty quality, opportunities to do one's own research, and program reputation. It failed to meet expectations regarding opportunities for contact with faculty and financial aid. As in the Humanities Division, it received its most positive rating for the quality of library facilities and its most negative rating for opportunities to obtain teaching experience.

We urge faculty in the Four Divisions to consider these matters with some care in the course of the process of self-evaluation recommended earlier in Chapter 2 of this report.

One of the longest times to degree: only Columbia's is longer; Berkeley's is slightly shorter. In the biological and behavioral sciences, there are clear sex differences: for male students, Chicago belongs in a moderately slow group of institutions; for female students, it is among the very slowest. These data offer no more than a crude basis for comparison, since they are based only on the average time elapsed between the bachelor's and doctoral degrees without controlling for possible variations in the average length of time intervening between college graduation and the commencement of graduate study, or in the proportion of part-time students. They offer no precise evidence regarding the actual time it may take to receive a degree at any particular institution. In order to establish more exact data for the University of Chicago, we have gathered information regarding students who received the Ph.D. in three selected years: 1970-71, 1975-76, and 1980-81. The resulting statistics are presented in Table 3.

Because the distribution of time to degree is highly skewed—particularly in the Humanities and Social Sciences Divisions, where there is a wide range between the shortest and the longest time taken to degree—the median is a sensible measure to consider in this table. Figure 11 illustrates the median length of
time from matriculation to graduation for students who received the Ph.D. in each of the three selected years. Its most dramatic aspect is the substantial increase in the length of time to degree in Humanities and Social Sciences in the last decade. Half of the students who received their Ph.D. in the Humanities Division in 1980-81 had taken longer than 8.2 years, as compared with eight years in 1975-76 and 6.3 years in 1970-71. Half of those who received the Ph.D. in the Social Sciences Division in the same year had taken longer than 7.7 years, as compared with 6.5 years in 1975-76 and 5.8 years in 1970-71. The median length of time to degree was substantially shorter in the Biological and Physical Sciences Divisions, and after increasing quite dramatically between 1970-71 and 1975-76 it leveled off in Biological Sciences between 1975-76 and 1980-81 and fell somewhat in Physical Sciences. In the Biological Sciences Division, half of the students who received their Ph.D. in 1980-81 had taken less than 5.5 years, as compared with 5.5 years in 1975-76 and 4.8 years in 1970-71. In the Physical Sciences Division, half of the students who received the Ph.D. in 1980-81 had taken less than 5.4 years, as compared with 6.1 years in 1975-76 and 4.9 years in 1970-71. These figures include all students receiving the Ph.D. in the three selected years, whether or not they had begun their graduate work at the University with a master's degree. Students who had entered with a master's degree did tend to take a shorter time to degree than those who had not (most notably in the Humanities Division), but the median length of time to degree for those students who had entered with a master's degree also increased between 1970-71 and 1980-81 by about the same amount as those who had entered without a master's degree (see Table 4). These increases for these increases are not immediately clear, though we may assume that they are related to the disruption of the patterns of financial support and academic placement that had come to be regarded as normal in the 1950s and 1960s. But their effect has been to open even wider the gap between the time taken to earn a Ph.D. in the Biological and Physical Sciences Divisions on the one hand, and in the Humanities and Social Sciences Division on the other. As Table 5 shows, of the students who received the doctorate in 1980-81, 82 percent of those earning their degree in the Biological Sciences and 69 percent of those in the Physical Sciences had taken six years or less, as compared with only 34 percent in the Humanities and 27 percent in the Social Sciences. These increases are disturbing comparisons, all the more so in light of the data illustrated in Figure 12. This figure shows the mean length of time to degree for doctoral students graduating in each of the four Divisions in the three selected years, divided into the mean proportions of that time spent, respectively, in full-time graduate work, in the dissertation stage, and in other activity. The obligations of such positions may have slowed progress toward the degree, but they tended in exchange to provide doctoral candidates with the financial means, the intellectual and moral support, and the institutional incentive, to complete their dissertation. This is no longer the case. The doctoral candidate who finds an academic position before he or she has completed dissertation is a rarity in an increasing number of fields in the Humanities and Social Sciences. Many must now attempt to complete their research without formal status in the University and in an ill-defined position on its margins. They may have relatively little regular contact with their professors and peers, and relatively little of the intellectual and moral support that comes from such contact. It is perhaps not surprising that difficult and demanding work may lag under these conditions.

We regard it as essential, as a means of reducing the average time to earn a Ph.D. in the Humanities and Social Sciences Division, to provide a clearer and more supportive institutional environment for graduate student research at the dissertation stage. We offer the

![FIGURE 10C: Evaluation of the University as Compared with Expectations, Students in Division of Humanities](image)

![FIGURE 10D: Evaluation of the University as Compared with Expectations, Students in Division of Social Sciences](image)

<table>
<thead>
<tr>
<th>TABLE 2: MEAN NUMBER OF YEARS FROM BACHELORS DEGREE TO DOCTORATE PH.D. GRADUATES FROM TEN SELECTED UNIVERSITIES (1958-74)</th>
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<td>Yale</td>
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*145 large Ph.D. granting institutions

TABLE 3: YEARS FROM MATRICULATION TO GRADUATION, PH.D. GRADUATES, UNIVERSITY OF CHICAGO, IN THREE SELECTED YEARS

<table>
<thead>
<tr>
<th>Year</th>
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<th>Physical Sciences</th>
<th>Humanities</th>
<th>Social Sciences</th>
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<tr>
<td>1970-71</td>
<td>(48)</td>
<td>(87)</td>
<td>(77)</td>
<td>(173)</td>
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<tr>
<td>1975-76</td>
<td>(41)</td>
<td>(62)</td>
<td>(78)</td>
<td>(175)</td>
</tr>
<tr>
<td>1980-81</td>
<td>(49)</td>
<td>(61)</td>
<td>(60)</td>
<td>(144)</td>
</tr>
</tbody>
</table>

Mean 4.9  Median 4.5  Mode 4.7  Range 10.5

TABLE 4: MEDIAN NUMBER OF YEARS FROM MATRICULATION TO GRADUATION, PH.D. GRADUATES IN FOUR DIVISIONS, ENTERING WITH AND WITHOUT MASTERS DEGREES, IN THREE SELECTED YEARS

<table>
<thead>
<tr>
<th>Year</th>
<th>Biological Sciences</th>
<th>Physical Sciences</th>
<th>Humanities</th>
<th>Social Sciences</th>
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<tr>
<td>1970-71</td>
<td>(48)</td>
<td>(87)</td>
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<td>(173)</td>
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<tr>
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<td>(61)</td>
<td>(60)</td>
<td>(144)</td>
</tr>
</tbody>
</table>

Mean 4.9  Median 4.5  Mode 4.7  Range 10.5

A. By Year of Graduation

<table>
<thead>
<tr>
<th>Year</th>
<th>By Division</th>
<th>Entered with Master's</th>
<th>Entered without Master's</th>
</tr>
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<td>1970-71</td>
<td>B.S.</td>
<td>4.6</td>
<td>6.5</td>
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<tr>
<td>1975-76</td>
<td>P.S.</td>
<td>4.6</td>
<td>6.6</td>
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<td>1980-81</td>
<td>H.</td>
<td>7.9</td>
<td>8.2</td>
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B. By Division

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<tr>
<th>Division</th>
<th>By Year</th>
<th>Entered with Master's</th>
<th>Entered without Master's</th>
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<tbody>
<tr>
<td>B.S.</td>
<td>1970-71</td>
<td>4.6</td>
<td>6.5</td>
</tr>
<tr>
<td>P.S.</td>
<td>1975-76</td>
<td>4.6</td>
<td>6.6</td>
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<tr>
<td>H.</td>
<td>1980-81</td>
<td>7.9</td>
<td>8.2</td>
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The following recommendations concern student work, and could be an important factor in shortening the average length of time of degree.

The effects of such a change would be reduced by a tuition structure more sensitive to the actual rhythm of doctoral study than our current twenty-seven course requirement as the basis for calculating tuition costs.

The arrangement we recommend is as follows:

(i) Students who have satisfactorily completed six quarters in residence— and who have been formally admitted to doctoral research— may substitute a further six quarters of residency at half tuition for their remaining three quarters of residency at full tuition. Assuming a normal pattern of three quarters in residence per year, students opting for this arrangement will therefore have two years of residency at "high tuition" (roughly corresponding to two years of initial course work and/or the completion of the M.A.), followed by two years of residency at "low tuition" (in which they will be engaged in research for the dissertation).*

(ii) Students who have completed payment of full tuition for nine quarters of residency (or its equivalent under the option described in the preceding paragraph) may continue formal residency until the Ph.D. is conferred by maintaining FTC (Full Time Certification) status at a reduced fee.

(iii) Students no longer in residence who remain active candidates for the degree will be expected to maintain their official status as such by a form of continuous registration (at a nominal fee) and by regular quarterly reports on the progress of their dissertation. Unless explicit permission is granted to the contrary, students who have not submitted an acceptable dissertation within five years of their formal admission to doctoral research will be dropped from active candidacy for the degree.

* There would, of course, be a one-time cost to the University involved in introducing such an arrangement. We have secured a preliminary estimate of this cost, based on the following assumptions:

(a) Only third-year graduate students without financial aid or those receiving less than full tuition awards would be eligible to spread their tuition payments over the third and fourth years.

(b) Twenty-five percent of those eligible would choose this option.

(c) Students choosing this option who have partial tuition awards would be able to apply one-half of the award each year. On the basis of 1981-82 data, the net cost to the University of introducing this change would be $102,000.

The foregoing provisions assume that graduate students are engaged in full-time study. However, it would be relatively easy to adapt them to meet the needs and purposes of part-time students, who now represent a substantial percentage of the graduate students registered. One way of doing this would be to allow part-time students to pay a set tuition for per course until they had paid the equivalent of six quarters of residency at full tuition, after which the provisions suggested above in paragraphs (b) and (iv) would come into effect for them as for full-time students. Another way would be to regard payment of tuition for a full quarter's residency as entitlement to a stipend of a certain amount of money as he or she wished in a given quarter, or to take up to a designated number of courses in successive quarters. Again, choice of this latter option could continue until a part-time student had paid the equivalent of six quarters of residency at full tuition, after which the provisions would apply as for full-time students.

The possibility of extending their period of residence in the University while working on their dissertation is likely to be attractive to advanced graduate students, and to encourage their progress toward the Ph.D., to the extent that they are also offered a supportive and stimulating institutional context for their continued research. The need for such a context has been emphasized earlier as one of the principal weaknesses of the current organization of graduate education in the Humanities and Social Sciences Divisions, and the proposal to create a Research Institute structure to meet this need is elaborated more fully in a later chapter of this report.

Physical environment is also important in this respect. Graduate students in the Biological and Physical Sciences, few of whom have assigned office or study space of any kind, and they have no equivalent of the laboratory to provide...
a physical, as well as a social and intellectual, context for regular interchange among advanced students working in common fields. Unlike some other universities, our library does not provide carrells or specially designated room for students in particular disciplines—an arrangement which serves important intellectual and social functions—and advanced graduate students are left to compete with undergraduates (and an increasing number of Laboratory School students) for space and other facilities. It is important, however, that while the problem of providing better space for graduate student research should not be considered only in terms of the library. An alternative or complementary approach would be to find space elsewhere on campus, and that could be used to create studies and common rooms for graduate students in particular fields. Such configurations would provide a natural context for intellectual and social interaction among students with common academic interests, and could be an important factor in reducing the sense of isolation among graduate students in Humanities and Social Sciences. There may now be some space on campus that could be adapted for this purpose (the old library stacks in Ida Noyes Hall have been mentioned in this regard) and more may become available as a result of the new building that is now planned or underway. We urge that a high priority be placed on the utilization of space on campus, as it becomes available, to provide more adequate facilities for graduate student research.

A Graduate Student Center

Since the building of the new Corner Library will shortly be opening up space in Regenstein Library for other uses, this would seem to be a propitious time to consider changes. However, the problem of providing better space for graduate student research should not be considered only in terms of the library. An alternative or complementary approach would be to find space elsewhere on campus, and that could be used to create studies and common rooms for students in particular fields. Such configurations would provide a natural context for intellectual and social interaction among students with common academic interests, and could be an important factor in reducing the sense of isolation expressed by many graduate students in the Humanities and Social Sciences.

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When we asked a sample of in-residence students to compare their experience of the University with their expectations, the quality of social life on campus shared the most negative rating of all the factors the respondents were asked to consider. We expect the planned renovation of Ida Noyes Hall to provide considerably improved social and recreational facilities on campus, from which graduate students will benefit among others. However, there is—and current plans for Ida Noyes envisage—no clearly defined center for graduate student life on campus, and it seems appropriate to consider the desirability of creating one.

It is, of course, possible to argue that graduate students as a group have relatively little need for a common social center. It can be pointed out that they are older and more mature; many of them are married; some have families. However, the problem of providing better space for graduate student research should not be considered only in terms of the library. An alternative or complementary approach would be to find space elsewhere on campus, and that could be used to create studies and common rooms for students in particular fields. Such configurations would provide a natural context for intellectual and social interaction among students with common academic interests, and could be an important factor in reducing the sense of isolation expressed by many graduate students in the Humanities and Social Sciences. There may now be some space on campus that could be adapted for this purpose (the old library stacks in Ida Noyes Hall have been mentioned in this regard) and more may become available as a result of the new building that is now planned or underway. We urge that a high priority be placed on the utilization of space on campus, as it becomes available, to provide more adequate facilities for graduate student research.

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<td>Humanities</td>
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<tr>
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<td>91%</td>
<td>83%</td>
<td>62%</td>
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<td>61%</td>
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<td>71%</td>
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*At least half the students in the Physical Sciences received fellowship aid. As a result, the average aid per student enrolled is understated.*

**Aid per student enrolled is calculated as the percentage of students receiving fellowships as a result of the aid being received.**

*Social Sciences (including research assistantships)*

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<td>62%</td>
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<td>60%</td>
</tr>
<tr>
<td>Physical Sciences</td>
<td>34%</td>
<td>37%</td>
<td>20%</td>
<td>15%</td>
<td>18%</td>
<td>16%</td>
<td>16%</td>
<td>17%</td>
<td>22%</td>
<td>21%</td>
<td>16%</td>
</tr>
<tr>
<td>Humanities</td>
<td>10%</td>
<td>12%</td>
<td>6%</td>
<td>6%</td>
<td>10%</td>
<td>11%</td>
<td>12%</td>
<td>21%</td>
<td>19%</td>
<td>19%</td>
<td>15%</td>
</tr>
<tr>
<td>Total aid per student enrolled in % of tuition</td>
<td>91%</td>
<td>69%</td>
<td>65%</td>
<td>54%</td>
<td>41%</td>
<td>36%</td>
<td>43%</td>
<td>37%</td>
<td>41%</td>
<td>45%</td>
<td>50%</td>
</tr>
</tbody>
</table>

*Social Sciences (including research assistantships)*

<table>
<thead>
<tr>
<th></th>
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<td>40%</td>
<td>45%</td>
<td>32%</td>
<td>56%</td>
<td>70%</td>
<td>76%</td>
<td>72%</td>
<td>74%</td>
<td>69%</td>
<td>60%</td>
<td>76%</td>
</tr>
<tr>
<td>Physical Sciences</td>
<td>29%</td>
<td>27%</td>
<td>20%</td>
<td>19%</td>
<td>14%</td>
<td>14%</td>
<td>20%</td>
<td>16%</td>
<td>15%</td>
<td>16%</td>
<td>13%</td>
</tr>
<tr>
<td>Humanities</td>
<td>31%</td>
<td>29%</td>
<td>24%</td>
<td>22%</td>
<td>17%</td>
<td>7%</td>
<td>4%</td>
<td>12%</td>
<td>11%</td>
<td>15%</td>
<td>27%</td>
</tr>
<tr>
<td>Total aid per student enrolled in % of tuition</td>
<td>113%</td>
<td>101%</td>
<td>86%</td>
<td>68%</td>
<td>52%</td>
<td>48%</td>
<td>45%</td>
<td>39%</td>
<td>41%</td>
<td>45%</td>
<td>48%</td>
</tr>
</tbody>
</table>

*Notes: Figures available since 1981-82.*

**Notes:** Figures available since 1970-71 include the then-existing School of Education.

Table 6 illustrates the patterns of financial aid across different fields of study, highlighting the variability in aid distribution. The data provide insights into the relative emphasis given to different divisions, with notable trends indicating a shift over time toward more consistent support in certain fields.
post at this University compared with others, and to con-
consider some of the important trends that have occurred
over the past decade.

We can begin with comparative data for the year
1979-80, recently gathered from seventeen institutions
participating in a study of the financing of graduate
education, under the auspices of the Consortium on the
Financing of Higher Education (COFHE). According to
this study, the University of Chicago is the sixth highest
among these seventeen institutions in average cost of
attendance and the sixth lowest in the proportion of
average financial requirements covered by fellowship or
other institutional support (excluding loans). In each of
the five universities lower than Chicago in this latter
category, average financial requirements are significantly
smaller than our own. Graduate students at Chicago pay
a larger proportion of average financial requirements
from personal and loan funds than do graduate students
at most other private universities participating in the
COFHE study.* However, The University of Chicago
may suffer in this comparison as a result of the way
average tuition requirements are calculated: since
students here are not required to maintain a continuous
registration status until completion of their degree,
average tuition requirements (the average tuition paid
by all students registered, whatever their status) may appear
higher elsewhere.

We can consider some of the principal trends in finan-
cial aid at the University of Chicago by turning to Table
6, which shows fellowship support by Division from 1970
to 1981. In analyzing this table it is important to note
that it has some serious limitations owing to the
nature of the data. First, it does not include research
assistantship salaries paid to students from federal
funding grants to their faculty sponsors: since this is
a major source of support in the Physical Sciences
Division, the level of support in that Division (and the
proportion of support from federal funds) is seriously
understated. Second, figures available since 1979-80
include funds received via "agency billings" not previous­
ly recorded in this form. To standardize the basis of
comparison with earlier years, these sums have been
omitted: as a result, there is a slight tendency to overstate
the proportion of fellowship aid contributed from
University sources.

Despite these difficulties in interpreting the available
data, Table 6 indicates some fairly clear long-term
trends in financial aid patterns since 1970. It is first im-
portant to emphasize that the structure of financial sup-
port in the natural sciences at the national level, and the
trends of competition for the best students in these sci-
ces, are such that the patterns of financial aid in the
Biological and Physical Sciences Divisions are quite
different from those in the Humanities and Social Sci-
ences Divisions. For most purposes, we must regard
the University as operating with two quite different fi-
nancial aid policies rather than one. The summary of
aid in the Divisions for 1981-82 (Table 7) makes this
quite clear. Virtually all (97 percent) of the students in
the Biological Sciences Division, and all of the students
in the Physical Sciences Division, receive financial aid,
with the average aid package (including research asis-
tantship salaries) amounting to about 150 percent of
current tuition. The national conditions of graduate
study in the biological and physical sciences on the one
hand, and the humanities and social sciences on the
other, seem to make this disparity unavoidable.

Nevertheless, Table 6 suggests a decline for all Divi-
sions in the average amount of fellowship aid per stu-
dent enrolled (expressed as a percentage of the cost of
tuition) which reached its nadir in 1979-80. Since that
date, there has been a recovery largely attributable to
increased allocation of University resources to financial
aid, but the average amount in 1981-82 is still signifi-
cantly lower in proportion to tuition than it was in
1970-71. The pattern is particularly clear in the Hu-
manities and Social Sciences Divisions, where the
average fellowship awards are lower and there are few
federal funds for research assistantships to supplement
them. In the Humanities Division, average fellowship
aid per student enrolled expressed as a percentage of

tuition fell from 91 percent in 1970-71 to 48 percent
in 1981-82. In the Social Sciences Division, it fell from
113 percent in 1970-71 to 52 percent in 1980-81.

The data showing the percentage of fellowship aid in
each of the Divisions received from various sources must be
considered. Of this amount, the share held by the
Humanities and Social Sciences Divisions is
relatively low, that in the Humanities and Social Sci-
ences Divisions is already substantial. In 1980-81, 49
percent of the students eligible in the Humanities Divi-
sion and 47 percent of those eligible in the Social Sci-
ences Division received awards averaging over $3,000
(65 percent of tuition for that academic year).

We have no reliable evidence regarding cumulative
aid in the Biological and Physical Sciences Divisions
is an urgent need for the University to find renewed
support of students in the natural sciences
in fellowship aid to support graduate study.

TABLE 8: GRADUATE STUDENT LOANS (1975-81)* BY DIVISION

<table>
<thead>
<tr>
<th></th>
<th>Biological Sciences</th>
<th>Physical Sciences</th>
<th>Humanities</th>
<th>Social Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average loan amount</strong></td>
<td>$2,001 ($67%)</td>
<td>$1,622 ($54%)</td>
<td>$2,300 ($71%)</td>
<td>$2,418 ($71%)</td>
</tr>
<tr>
<td>(As % of tuition)</td>
<td>24%</td>
<td>35%</td>
<td>34%</td>
<td>36%</td>
</tr>
<tr>
<td><strong>Percentage of eligible borrowers</strong></td>
<td>10%</td>
<td>7%</td>
<td>47%</td>
<td>38%</td>
</tr>
<tr>
<td><strong>Average loan amount</strong></td>
<td>$2,443 ($67%)</td>
<td>$2,128 ($71%)</td>
<td>$2,839 ($72%)</td>
<td>$2,572 ($71%)</td>
</tr>
<tr>
<td>(As % of tuition)</td>
<td>32%</td>
<td>36%</td>
<td>32%</td>
<td>36%</td>
</tr>
<tr>
<td><strong>Percentage of eligible borrowers</strong></td>
<td>14%</td>
<td>10%</td>
<td>47%</td>
<td>36%</td>
</tr>
</tbody>
</table>

**Note:** Includes borrowing under federal and state programs, from the University, and from private sources housed in the Office of Student Financial Counseling. The number of students borrowing, and the average amount borrowed, are subject to the restrictions established by individual loan pro-

* In addition to the University of Chicago, other participating institu-

1. Includes borrowing under federal and state programs, from the University, and from private sources housed in the Office of Student Financial Counseling. The number of students borrowing, and the average amount borrowed, are subject to the restrictions established by individual loan pro-

2. Basis for calculating the percentage of eligible borrowers is slightly smaller than in other years.

3. As of this date, short-term emergency loans were no longer included in the available data. These omission reduces the percentage of borrowers and increases the average loan amount awarded in comparison with previous years.

4. The Biological and Physical Sciences Divisions

5. In what follows, we shall be largely concerned with current

6. The Biological and Physical Sciences Divisions

7. In what follows, we shall be largely concerned with financial aid policies as they relate to the Humanities and Social Sciences Divisions. This is not because we regard financial aid in the Biological and Physical Sciences Divisions as any less important, but because the policy issues in these two Divisions seem less problematic. The University is, in effect, almost compelled to a policy of ensuring full support for students in the natural sciences and draws on a variety of methods and sources of sup-

8. We see two principal concerns relating to financial aid in these Divisions. The first concern is that the University must continue to make financial awards as competitive as possible in order to attract the very best students. Without trying to "buy" the best students in the natural sciences, it should be the aim to make awards that will ensure that their
TABLE 9: OFFERS AND ACCEPTANCES OF FINANCIAL AWARDS TO INCOMING STUDENTS

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td>Offers</td>
<td>Awards</td>
<td>Accepted</td>
<td>%</td>
<td>Offers</td>
<td>Awards</td>
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<td>Humanities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuition &amp; Stipend</td>
<td>15</td>
<td>6</td>
<td>(40%)</td>
<td></td>
<td>31</td>
<td>9</td>
</tr>
<tr>
<td>Full Tuition</td>
<td>59</td>
<td>12</td>
<td>(20%)</td>
<td></td>
<td>54</td>
<td>12</td>
</tr>
<tr>
<td>Partial Tuition</td>
<td>80</td>
<td>37</td>
<td>(46%)</td>
<td></td>
<td>73</td>
<td>24</td>
</tr>
<tr>
<td>Social Sciences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuition &amp; Stipend</td>
<td>41</td>
<td>7</td>
<td>(17%)</td>
<td></td>
<td>66</td>
<td>20</td>
</tr>
<tr>
<td>Full Tuition</td>
<td>113</td>
<td>36</td>
<td>(36%)</td>
<td></td>
<td>106</td>
<td>38</td>
</tr>
<tr>
<td>Partial Tuition</td>
<td>126</td>
<td>60</td>
<td>(48%)</td>
<td></td>
<td>82</td>
<td>30</td>
</tr>
</tbody>
</table>

decision regarding the University of Chicago is made on academic rather than financial grounds. The second con­ cern is that the University is dependent for much of the financial support of its students in the Biological and Physical Sciences Divisions on federal funds that may be threatened by current trends in national policy. It is im­ pertinent to work with other Universities in emphasizing the importance of public support for scientific research as a matter of the highest national priority, and to seek from other sources that will mitigate as far as possible the effects of any sudden changes in federal policy.

(iii). The Humanities and Social Sciences

Recruitment

In 1981, the University made an important change in financial aid policy for the Humanities and Social Sciences. The change was brought about by guaranteeing continuation of the support offered to incoming students for three years at the same level, subject to satisfactory academic perfor­ mance. That decision seems to have been a major factor in the increase in students matriculating in the academic year 1981-82 as compared with the previous year, par­ ticularly in the Humanities Division.

Table 9 gives a comparison of offers and acceptances of financial support for students applying to enter the Humanities and Social Sciences Divisions in the academic years 1979-80, 1980-81, and 1981-82. In the Humanities Division, where the overall number of new students increased by 18 percent between 1980-81 and 1981-82, acceptances of tuition plus stipend awards in­ creased from 29 percent in 1980-81 to 31 percent in 1981-82. In the Social Sciences Division, where the number of new students increased overall between 1980-81 and 1982-82 by 14 percent, the effect of guaranteeing financial aid for three years is also clear, though somewhat less strong. While acceptances of the most substantial awards (tuition plus stipend) remained con­ stant at 31 percent in 1981-82 as compared with 1980-81, despite the new assurance of continued aid for three years, acceptances of full tuition awards in­ creased from 36 percent to 41 percent and acceptances of partial tuition awards increased from 37 percent to 44 percent. In contrast, increasing the amount of aid without assurance of renewal for successive years (as was done in 1980-81) seems to have had some effect on acceptances of tuition and stipend awards (which fell from 48 percent to 37 percent). These data suggest that while the level of the award may be crucial in competing with other universities for the top students in the social sciences, assurance of continued aid may be less important in encouraging us to remain as a major financial aid source for students entering with none (or with relatively little) who achieve the standards of superior work established for this pur­ pose.

A policy of guaranteeing financial aid for three years would be consistent with our competitive priorities. If it meant a reduction in the relative amount of aid available to sup­ port dissertation research, which already appears to be inadequate, allowing students an option to spread their third-year’s tuition over two years, and providing them with fellowship aid to make up the lost FTC registration for a further period, as proposed in this report, should en­ courage them to remain in residence and complete their dissertation more expeditiously. This goal should be advanced by increasing the financial support available to students at the dissertation-writing stage. Since these students have reached a point in their academic careers at which the faculty is best able to judge their intellec­ tual capacities and scholarly potential, and at which the fruits of their long-term investment by the students and the University remain to be harvested, dissertation fellowships supporting the most able represent a par­ ticularly important and effective use of financial aid.

We recommend continuation of the policy of guaranteeing financial aid offered to incoming students in the Humanities and Social Sciences Divisions at the same level for three years, subject to appropriate per­ formance. In doing so, we wish to emphasize the impor­ tance of maintaining sufficient flexibility in financial aid policy to allow individual departments to deter­ mine the strategy in making initial award offers that seems most appropriate to their competitive situation. (vi). We recommend that “appropriate performance” be defined in advance in a way that will make clear that students receiving fellowship aid are expected to meet the standards of superior rather than minimally satisfac­ tory work. These standards should be established in ab­ solute terms, not as the result of a process of competi­ tion between students with aid and without.

(iv). We regard it as particularly appropriate to insist on clearly superior performance as a condition of con­ tinued financial aid after completion of the second year of graduate study, by which time a student’s potential for outstanding work at the research stage can be more reliably assessed.

(v). We emphasize the importance of sufficient flex­ ibility in financial aid policy to allow for the awarding of new (or increased) fellowship support to students entering with none (or with relatively little) who achieve the standards of superior work established for this pur­ pose.

(vi). We reiterate in this context our recommendation that students who have satisfactorily completed six quarters of residency at full tuition—and who have been formally admitted to doctoral research—be per­ mitted to substitute a further six quarters of residency at half-tuition for their remaining three quarters of residence at full tuition. Students awarded fellowship aid of less than full tuition who opt for this arrangement would then be required to spread their use of financial aid over two years in the same manner.

We also recommend that, where the cost of FTC regis­ tration is not borne by financial aid from external sources, the University make available tuition support to defray this cost for students who have not completed more than fifteen quarters residency.

(vii). We recommend that particular emphasis be placed on the importance of providing adequate financial support for students at the dissertation stage of their graduate work. We urge that the creation of dissertation fellowships be given a high priority in the forth­ coming campaign for financial support of the arts and sciences.

(viii). We recommend that appropriate steps be taken to prevent students from accumulating an impossibly large debt. Students who are not fully supported by grants and fellowships should be expected to work part­ time during the academic year and full-time during the summer. The University should provide an aggressive job service to help students find part-time work, which
might often be combined with the internships discussed earlier in another context. Registration requirements for work-study positions should also be revised in a way that would not eliminate the eligibility of graduate students who have completed their period of full registration to be eligible for research assistantships funded in this way. More advanced students are likely to benefit most from this kind of work experience (which can often be closely related to their own intellectual interests) while also fulfilling the most valuable research assistance to faculty members.

(iii) The University must consider alternatives to existing loan arrangements, in the event that current federal loan programs are modified in ways reducing or eliminating the eligibility of graduate students at a time when commercial loan rates are prohibitive. We recommend consideration of the feasibility of offering deferred partial tuition loans to students meeting strict criteria of need.

(2) Post-Doctoral Fellowships. The period immediately following completion of the dissertation is often crucial in translating promising ideas into mature, significant scholarship. We cannot afford to see the potential contributions of the most accomplished young scholars in difficult fields of inquiry lost at this stage. It is an important institution of our university standing to make every effort to support young scholars whose doctoral research shows unusual promise of shaping their field of inquiry in fundamental ways. We therefore recommend that the University seek foundation support for a program of post-doctoral fellowships for outstanding young scholars in the arts and sciences.

D. A Note on Foreign Students

It has been one of the traditional strengths of this University that it has attracted graduate students from throughout the world. Its continuing ability to do so is both an expression and a source of its intellectual leadership. The recruitment of foreign students, and the maintenance of an environment responsive to their individual needs, presents special issues to which this Commission has been unable to devote systematic attention. We recommend the creation of a committee for that purpose.

CHAPTER 5: THE FOUR DIVISIONS

The Divisional structure has been one of the most distinctive features of the organization of graduate education and scholarly research at the University of Chicago since its introduction some fifty years ago. Every organizational arrangement has its own particular rigidity, and this one has proved no exception. In this chapter of our report, we offer a brief review of which lines might be drawn between departmental areas, there would be no significant advantage from defining them as differently at present. However, a periodic review and, when suitable, reorganization of departments might be a regular procedure. A merger of all the basic science departments would be possible but administratively cumbersome. Chairman generally felt that a core faculty of about twelve to fifteen persons was desirable; the chairman could continue scientific work despite the potential difficulty of departmental administration. The Department of Biology, with about twenty-one faculty members currently involved, approaches the upper limit of the size. The Department of Pathology has a still larger faculty, but it serves as both a basic and clinical department, with some faculty members specializing in one or the other.

Most graduate education in the basic biological sciences at this University is supported by National Research Services Awards (still better known, and hereafter referred to, as "training grants") from the National Institutes of Health. The areas of study supported by training grants, such as molecular and cell biology, genetics and regulatory biology, and developmental biology, do not usually correspond to particular departments in the Division. There are in some cases interdepartmental committees that bring together faculty members from several of the basic science departments to make up the Post-Doctoral School of Medicine. Our concern here is with the basic sciences, but we cannot avoid discussing the entire Division in many matters. Moreover, some departments include both basic and clinical research and teaching, and several of the most important interdepartmental committees are made up of faculty members from both areas of scientific investigation.

Divisional Organization

The present organization of the biological sciences throughout the world is largely a result of the disappearance of old disciplinary boundaries since the advent of molecular biology. The distinction between zoology was resolved at the level of the cell, while the distinction between physiology and anatomy was resolved at the level of biotechnology. The present departmental organization of the biological sciences at this University was created in 1973 after an extensive study and report by the "Graduate Committee." The basic science departments are Anatomy, Biochemistry, Biology, Biophysics, and Theoretical Biology, Microbiology, Pathology, and Pharmacology. A number of the Divisional faculty who spoke of this matter said that while there were other obvious ways in...
entering medical school with the objective of insuring others against uncertain and unexpected prospects for academic employment. The University of Chicago enjoys a particular advantage in relation to this group of students through the integration of the clinical and the basic science departments in the Division. There are continuous thirty students pursuing joint M.D. and Ph.D. degrees at this University, more than any other American institution. There are special six-year training programs under the Medical Sciences Training Program that support students in joint degree programs through both clinical and research training. There are only eight vacancies each year under this particular program, for a total of thirty students in the Division, so it cannot enroll all of the joint degree students. A similar but smaller program in Child Development is operated through the Pedanics Department. It is generally thought that trainees selected under these programs are the most uniformly promising scientific investigators among graduate students in the Division.

It will be obvious that there are differences between basic and clinical science departments, and these appear most striking in the area of graduate instruction. There are very few courses offered at an advanced graduate level anywhere in the Division, yet those that are offered seem to be given at times when senior medical students cannot take them because of schedule conflicts. Scheduling a small number of advanced program, for a total of fifty students in the Division, so enjoys a particular advantage in relation to this group of entering medical school with the objective of insuring the best graduate students are drawn to institutions on the coasts. Harvard, M.I.T., Yale, Stanford, and Berkeley are heard commonly in all of the Divisions of this University as leading competitors. In the biological sciences, leading positions are also occupied by the small and specialized programs at Caltech and Rockefeller University, where research on recombinant DNA and cloning attract graduate students of the highest caliber. But when graduate programs at Chicago are ranked below those at Duke, the University of Wisconsin, and the University of Illinois, it becomes painfully clear that it is more than the guarantee of full financial support that draws good graduate students to these other institutions.

The faculty of the basic science departments in the Division is not large, and, even if the universe were large, statistical measures would not be very revealing of the subtleties of quality. However, in the process of the experience of the last decade has been one of realignment by senior faculty members and appointment of beginning assistant professors. Most departments report that their attempts to attract senior scientists from elsewhere have been delayed so early in discussions that no formal offer was ever made. The usual reasons given for abrupt expressions of lack of interest concern the difficulty of moving a laboratory and a major research operation, the unattractiveness of Hyde Park, and the Chicago winter. Obviously, such factors figure in any decision to move, but the experience of departments in other Divisions of the University suggests that they do not figure as heavily as does the area of research and research excellence of the department. In other words, a faculty member will move to Chicago if he or she regards it as a move "up" in the profession.

Most departments have not tried to make senior appointments, but most of them are very pleased with the excellence of the junior appointments they have been able to make recently. Chicago is particularly attractive to an assistant professor because it offers the prospect of indefinite tenure rather than the "revolving door" of some other prominent institutions. Eighty-two percent of the tenure appointments made in the Biological Sciences Division in the period 1972-80 were made from within, a proportion higher than that in any other Division (See Table 1). In fact, if there is a grapevine in such matters, it might carry the group that tenure is rather easy to get in the Division of Biological Sciences. It is surely the case that great care has been exercised in the selection of every junior appointment in the Division, so that the number of persons found unsuitable for tenure at the time of review would be expected to be very small. However, review procedures seem to be conceived to provide only positive outcomes. The candidate's department usually votes on the question of tenure on the basis of recommendations made by external referees without a formal internal report or evaluation of the candidate's research. In one department, even unnamed members of the faculty have a vote in tenure recommendations. After the vote is taken, the department chairman writes a memorandum reporting the vote and his recommendation to the Divisional Tenure Committee.

Unlike the practice in the other Divisions, the Dean of Biological Sciences does not take personal responsibility for the assessment of each recommendation for tenure of appointments, a procedure widely regarded as this University's foremost method of insuring continued faculty quality. Moreover, the Tenure Committee, because of its own composition, must normally appoint ad hoc committee members to review cases of candidates for tenures from the basic sciences. Thus the difficulty of maintaining a uniform standard of research achievement as a minimum prerequisite for promotion to tenure is exacerbated. Realistic and, where it is necessary, critical appraisals of the faculties of the departments and principal interdepartmental committees of the Division seem essential. Without the sting of peer evaluation, there is a perpetual danger that faculties will settle into a state of mediocrity, while mediocrity, will cease to be genuinely aggressive in recruiting the most excellent faculty, and will accept "the best possible under the circumstances" in its place. Most of the departments and committees in the Division are capable of providing self-evaluations that would likely be in close agreement with opinions in the field at large. However, as a check on these evaluations, and as a guard against inertia, periodic evaluations of departments and committees should be made by visiting committees consisting of respected research scientists in the appropriate fields.

Faculty recruitment in the biological sciences requires major expenditures for establishing new laboratories. There is only a limited faculty space for the tenure appointees as well as graduate students and post-doctoral research fellows. In the Hull Court biology

<p>| TABLE 1: PROPORTION OF TENURE APPOINTMENTS MADE FROM WITHIN, BY DIVISION AND DEPARTMENT (1972-80) |
|-------------------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|</p>
<table>
<thead>
<tr>
<th>Divisions</th>
<th>在外比例 (%)</th>
<th>在外比例 (%)</th>
<th>在外比例 (%)</th>
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<th>在外比例 (%)</th>
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<tr>
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<td>67%</td>
<td>66%</td>
<td>65%</td>
<td>64%</td>
<td>63%</td>
<td>62%</td>
<td>61%</td>
</tr>
<tr>
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<td>67%</td>
<td>66%</td>
<td>65%</td>
<td>64%</td>
<td>63%</td>
<td>62%</td>
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</tr>
<tr>
<td>SOCIAL SCIENCES DIVISION</td>
<td>42%</td>
<td>36%</td>
<td>35%</td>
<td>34%</td>
<td>33%</td>
<td>32%</td>
<td>31%</td>
<td>30%</td>
</tr>
</tbody>
</table>

- **SOCIAL SCIENCES DIVISION**: 42%
- **BIOLOGICAL SCIENCES DIVISION**: 82%
- **PHYSICAL SCIENCES DIVISION**: 70%
- **SCIENCE DIVISION**: 62%
- **DIVISION**: 82%
- **DEPARTMENT**: 82%
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However, they are not characteristics of the University of Chicago, and they distinguished the Division of Biological Sciences from the other graduate Divisions. In the recent past, the Division has had an office of Associate Dean for the Basic Sciences, which was in some respects comparable to that of Dean in the other Division. The office of Associate Dean was not filled when the present administrative organization was created, apparently in large part due to the absence of an obvious candidate for the position. An Associate Dean for Academic Affairs has been named, but it is not certain that, in the context of this University, any office less than Dean is perceived as carrying sufficient authority to provide critical oversight of faculty excellence. Since our report appears while the search for the next Dean is underway, the time is especially propitious for an administrative arrangement attuned to the improvement of the quality of basic research in the biological sciences. It is not now clear what administrative organization might most effectively focus on the problems of the basic sciences, and it may be impossible to define it until the particular background and interests of the new Dean are known. Any organization that fosters a cleavage between the clinical and basic science departments is contrary to the best interests of both the branches. However, a pattern that includes an Associate Dean for Basic Sciences is lacking wide authority, and it has no budgetary autonomy, has proved itself ineffective in building a strong basic faculty at the University of Chicago. It is our view that the present low status of the basic science departments of the Biological Sciences Division is one of the most pressing problems facing the entire University and should receive its urgent attention.

B. The Division of Physical Sciences
The Division of Physical Sciences is a strong Division, proud of a history of distinguished achievements. Its faculty is slightly larger than the basic sciences component of the Biological Sciences Division and its departmental structure is far more clearly defined. In all, the Division is comprised of six departments. Mathematics and Physics are the largest, with about forty faculty members; Chemistry and Geophysical Sciences are moderately large, with approximately twenty-five; Astronomy/Astrophysics and Statistics are relatively small, with about a dozen. The rigidities that might otherwise result from a strongly defined departmental structure are mitigated by the central role played in the research activity of the Division by the James Franck Institute and the Enrico Fermi Institute, soon to be joined by a proposed third Institute for Bio-Organic and Bio-Inorganic Chemistry (to be shared with the Division of Biological Sciences). The interdisciplinary flexibilities offered by the Research Institutes have been fundamental for the intellectual creativity of the Division. In addition to the Research Institutes, the University also maintains the Yerkes Observatory in Williams Bay, Wisconsin, which has been its center for observational astronomy since 1897. It operates an extensive use of the McDonald Observatory of the University of Texas, which observatory it helped to found.

Although there is no overwhelming sense of crisis in the Division of the Physical Sciences, there is an apprehension about the future. Among the concerns our committee heard most frequently voiced are the fear that the decline in number of graduate students will continue to a point below the critical mass necessary for research purposes in certain fields; the tendency for scientific research to become increasingly dependent on the existence of national facilities, a factor which makes the University of Chicago more attractive to outstanding faculty in some fields but less attractive in others; the exacerbation of laboratory start-up costs, which increases the difficulty of recruiting leading researchers, especially at the senior level; the erosion of salary levels within the University and the enhanced appeal of research positions in industry as a result. There is also a common perception in the Physical Sciences Division that it has in the past been expected to "pay its own way" to an extent that has resulted in consistent underfunding of University resources for essential support services. Whether or not this perception is accurate, grants and contracts for scientific research depend so heavily on federal funding that a significant shift in science policy in Washington could seriously affect the Division. There is fear that the Division will be unable to remain competitive at the highest intellectual level without the infusion of University venture capital in significant amounts. This money is particularly needed in two areas: the renovation of existing space for teaching and research; and the provision of an "opportunity fund" to support important research needs. Considerable progress toward these goals is now being made. But there remains a perception that competing universities have gained an edge in recruiting faculty, and perhaps in securing national science facilities, because of a greater ability to commit university funds.

One of the most important problems facing the Division is a perception on the part of many in the Division and its faculty that the University has not been making adequate research expenditures. The Division has commanding strength in a number of fields of scientific inquiry; in some, its traditional leadership is in danger of erosion; in a few others, it has become weak. It must be prepared to make difficult choices about priorities: allocating resources to strengthen those key fields now threatened by erosion, without risking the leadership already achieved in areas where the Division is outstanding; distinguishing, among the fields now weak, those that can reasonably be left uncultivated (at least for some period of time), those that are essential to the scientific enterprise of the Division and must be improved as soon as possible, those that are scientifically strengths and potentials that might be developed by new faculty groupings. The future of the Physical Sciences Division as a center of scientific research and teaching will depend critically upon the decisions made in this decade regarding such priorities, and upon the judgment and determination exercised in translating those decisions into strong faculty appointments.

Graduate Student Recruitment
As we have already seen, there has been a dramatic decline in graduate student enrollment in the Physical Sciences Division in the past decade. In the Division as a whole, total enrollment is now fifty-four percent of what it was in 1968-69. Among the larger departments, Mathematics has declined to forty-three percent of its 1968-69 enrollment, Physics to fifty percent, and Chemistry to sixty percent. Among the smaller departments, Geophysical Sciences has declined to seventy-five percent of its 1968-69 enrollment; Statistics to fifty-four percent; Astronomy/Astrophysics, after almost halving its small enrollment in mid-decade, has now returned to approximately its 1968-69 size. This overall decline in the number of graduate students in the physical sciences is not, of course, unique to the University of Chicago. We are participating in a general trend which has serious implications for the nation's future intellectual life and productivity. Nevertheless, there is a concern that the decline in graduate student numbers at this University may be reaching a critical point in Mathematics, in some experimental areas of Chemistry, and perhaps in some fields of Physics. Statistics and Astronomy/Astrophysics have fewer students than they regard as desirable. The Division appears to be approaching a situation in which the vitality of teaching and research in the physical sciences will be seriously affected unless the decline in the number of students can be halted or reversed.

Since the Division faces intense competition at the national level for the best students, it will need to make particularly energetic efforts to secure well qualified students in adequate numbers. We have considered graduate student recruitment procedures from this point of view at some length in the preceding chapter of this report. Our colleagues in the Physical Sciences Division have made difficult choices about priorities: allocating resources to strengthen those key fields now threatened by erosion, including the fields now weak, those that can reasonably be left uncultivated (at least for some period of time), those that are essential to the scientific enterprise of the Division and must be improved as soon as possible, those that are scientifically strengths and potentials that might be developed by new faculty groupings. The future of the Physical Sciences Division as a center of scientific research and teaching will depend critically upon the decisions made in this decade regarding such priorities, and upon the judgment and determination exercised in translating those decisions into strong faculty appointments.
them effectively for creative scientific work, must ultimately depend on the quality of its faculty. Thus the Division must make every effort to retain the distinction it now enjoys in many areas of scientific inquiry, and to define opportunities to add creativity to its strength in fields that may have been less distinguished in the past. Furthermore, the challenge they offer to identify the most promising fields and the most creative individuals among the next generation of outstanding scientists, will be critical in the next decade. They will require the University to ensure its continued distinction in such fields as mathematics, theoretical astrophysics, cosmochemistry, chemical physics, and experimental particle physics. They will offer opportunities for it to reassert its strength in other areas of scientific research.

Among the fields in which the Division now seems weaker than it should be are inorganic chemistry, meteorology, observational astronomy, and atomic and molecular physics. Many of these fields, despite the presence of outstanding individuals, are below the threshold for excellence and are considered externally to be so weak that it has become difficult or impossible to attract strong candidates for appointment at the senior level. As a result, it is likely that the University will be able to bring all of these areas up to the appropriate strength simultaneously. Difficult choices will have to be made. However, it is plausible that over a five-year period an average of three top-quality senior appointments a year, and an equal number of excellent junior appointments, carefully selected in the light of the needs of the whole Division and judged to be so by the appropriate departments, would considerably enhance the overall quality of the Division of the Physical Sciences.

Such appointments are unlikely to be made effectively in a number of fields unless the University is able to undertake the start-up costs necessary to provide the laboratories required for the most advanced scientific work. In some areas of research, start-up costs range from $250,000 to $500,000. The University is often at a serious disadvantage in recruiting faculty (both senior and junior) if it cannot commit the resources to cover them. The existence of a strong contingency fund for this purpose, which is now being established, is essential.

Preserving academic strength, however, is not simply a matter of faculty recruitment. It would be a mistake to beggar Peter in order to receive Paul. There is a perception in several departments that salaries have been eroding in recent years in a way that may make the most promising faculty members unacceptable to the attractions of other institutions or to other academic positions. The Department of Physics, for example, recently lost nine faculty members within a two-year period. Some of these losses were more serious than others. Nevertheless, there is a feeling in the department that the University has not been able to retain all of its outstanding scientists (both junior and senior) adequately, with the result that they have been particularly responsive to handsome offers from elsewhere. Intellectually, losses of outstanding junior faculty at the present rate may mean that they become most productive in especially damaging to the Division in the long run. Financially, these losses represent a drain on resources produced by "turnover costs" that may be significantly higher than amounts saved on faculty salaries. Important losses at the most senior level may have also been explained by higher salaries and more attractive research conditions offered by industry or other universities.

Apart from salaries and research support, there may be other initiatives which the University may be able to take to improve its ability to recruit or retain faculty of the highest quality in the Physical Sciences Division and in others. In the case of junior faculty, the issue of housing was frequently raised in our discussions. The willingness of the University to make loans for second mortgages is highly critical, particularly for junior faculty members. With mortgage rates now so high, fewer junior faculty members can now afford to take advantage of this policy, and even so, many who might otherwise be attracted to the University must find it difficult to move. One suggestion we heard is that the University make loans for second mortgages at below market rates, on condition that any capital gains realized on eventual sale of the house be shared between the University and the faculty member. Obviously, the attractiveness of such a possibility to prospective faculty would not be limited to the Division of Physical Sciences.

Relationship to National Facilities

One of the principal difficulties facing any major university in pursuit of scientific excellence concerns the increasing dependence of scientific research in many fields on the resources of national scientific facilities. The strength and attractiveness of a particular university in particular fields is therefore critically affected by the nature of its association with facilities of this kind. Most of the major research universities in the U.S. now have important externally funded scientific laboratories which support the scholarly work of the faculty in certain fields. For example, the Smithsonian Astrophysical Observatory in Cambridge is associated with the Department of Astronomy at Harvard; the Lawrence Radiation Laboratory at Berkeley shares many faculty members with scientific departments of the University of California at Berkeley; Stanford operates "on campus" a linear accelerator facility (SLAC) whose staff and visitors enhance the strength of physics and chemistry at that university; and so forth.

While this University has an important relationship with Argonne National Laboratory, the structure of that relationship has not always provided either the kind of intellectual stimulation that our science has had at other universities, or the kind of scientific integration that exists at Berkeley. As an example, the benefits of appropriate relationships with nearby national facilities, we can cite the importance of the Fermi National Accelerator Laboratory in Batavia, which has enabled the University to build first-rate strength in experimental high-energy physics. The lack of other scientific co-facilities on this campus now presents serious difficulties for the maintenance of state-of-the-art research in a number of fields. Proper arrangements with Argonne would create an enhanced environment for scientific activity in many areas. However, maximal exploitation of opportunities in intellectual interaction with national co-facilities will usually require funds for joint appointments.

One particularly difficult problem results from a recent decision of the National Science Foundation to create a Mathematical Sciences Research Institute on the Berkeley campus of the University of California. A smaller national institute, concerned particularly with the application of mathematics to other disciplines, is also to be created at the University of Minnesota. The Mathematics Department at the University of Chicago (which was a serious contender as a home for an NSF-funded Mathematics Research Institute, but found itself eliminated in the final stages of selection) is now the only one among the four or five leading departments which must compete for scholars and conduct research activity without the advantages conferred by the presence of a complementary concentration of first-rate mathematicians. It therefore seems essential, in order to maintain the traditional strength of the University in mathematics, to create a Mathematics Research Institute here in Chicago. This is not a new suggestion: it was first put forward in 1958 and has been repeated several times since that date. We recommend that a new proposal be developed along these lines in order to clarify the various possibilities regarding the size, scope, structure, and functions of such an institute.

The need for such a center for mathematical activity in Chicago, and the record of achievement in mathematics at the University, suggest that the creation of an endowment for a Mathematics Research Institute could well attract generous financial support from prospective donors.

A similar problem also exists in the case of the Department of Astronomy and Astrophysics, which is now one among major departments in the country in not being affiliated with a large co-facility.

The future of the experimental laboratory astrophotography carried out in its Laboratory for Astrophysics and Space Research will depend on that laboratory's ability to survive the vicissitudes of federal funding for NASA. The future of its work in theoretical and observational astronomy is likely to depend on the creation of effective links with the Space Telescope Data Center to be established at Johns Hopkins, or with a regional Space Telescope Center that might be set up after the launching of the space telescope in the middle of the decade. It is important that energetic efforts be made to bring such a regional center to this campus.

At the same time, the Department of Astronomy will need to watch with care the plans now being made to create the next generation of optical telescopes. At some point in the near future, it will also be necessary to decide whether to modernize Yerkes Observatory or abandon it as a center for research in observational astronomy.

Divisional Organization

There seems to be relatively little interest within the Division of Physical Sciences in structural reorganization. When asked, most faculty members found it difficult to identify institutional obstacles that stood in the way of the development of their intellectual interests. Although some faculty members were willing to speculate about conceivable new arrangements, they did not do so with any sense of urgency.

There is a general feeling, which we attribute to the interdisciplinary nature of the Division, that institutional boundaries are flexible enough for faculty members to pursue common research interests without difficulty. The recent decision to create a new Institute for Bio-Organic and Bio-Inorganic Research offers a confirmation of the flexibility of the Division in providing for changing research interests. It also suggests the wisdom of a policy that would permit the University to assess the adequacy of the opportunities to realize changing research strategies within the framework of the existing institutes. It is thirty-five years since the creation of the Research Institutes revolutionized the capacity for intellectual interaction in the practice of science at this University. It is possible that changes in the scientific environment in the next few years may now make recon­figurations of disciplinary contacts desirable.

There is also one respect in which we think it imp­tive that the issue of structural reorganization be considered. In 1973, it was decided to dissolve the exist­ing Committee on Information Sciences and to replace it with a program in computer science within the Department of Mathematics. We believe that it is essential for the University to reconsider its needs in this area, and to examine the desirability and feasibility...
of creating a separate Department of Computer Science. However, we think that the issues relating to the future of computer science at this University go beyond the needs and interests of the Physical Sciences Division alone. We therefore return to this subject later, in a separate section of this chapter.

Library, Teaching, and Research Facilities
In our conversations with faculty members throughout the Division, we heard many complaints about the inadequacies of Eckhart Library, in terms of its facilities, personnel, and collections. The announcement of the merger of the Science Library with the University of Chicago, and of the plan to construct a new science library on campus in connection with that merger, has therefore elicited a cautiously positive response from the faculty. However, there is still considerable apprehension that the new library arrangements will not be sufficiently sensitive to the needs of working scientists. It must be recognized that natural scientists use research libraries in a manner quite different from most humanities and social scientists: laboratory research tends to be punctuated by frequent, short visits to the library, while more sustained periods of library research are relatively rare. For this reason, twenty-four hour per day access to the library, seven days a week, is regarded as essential; and there is substantial concern that the weatherproof access to the new Cermak Library might not be provided.

There is also considerable dissatisfaction with the space and other facilities available in Kent, Ryerson, and Eckhart Halls, and with the physical dispersion of members of some departments in ways that inhibit their intellectual interaction. The decision to upgrade facilities for undergraduate laboratory instruction in the Physics Department and the rebuiding of the interior of the Kent Laboratory, which has been greeted with considerable enthusiasm, will provide an opportunity to solve some of the pressing space problems of the Division. However, the space difficulties of the Department of Astronomy will remain particularly severe until a decision is made to move the Computer Center.

Some Administrative Issues
In its conversations with faculty in the Division of Social Sciences, our committee encountered some feeling that the Division had been neglected and misunderstood by the administration in past years. This is not equally, or at all, the case in all departments; and it is difficult to gauge how strong the feeling is in the Division as a whole. However, several departments expressed the sense that the administration had in the past been unwilling or unable to appreciate their needs and interests; in some cases, delays in appointment decisions had seemed to take on symbolic importance as an indication that they were not valued as serious departmants.

The role of an Associate Provost with special interest in and knowledge of the sciences is an important one from this point of view.

Regarding faculty appointments, several departments also complained that opportunities had in the past been lost by administrative delays and apparent unwillingness to commit University funds to guarantee the start-up research costs necessary to attract distinguished scholars in many fields. Given the willingness of Divisional faculty to provide a clear framework of goals, needs, and priorities for long-range planning of recruitment activities, and the availability of a Divisional research fund adequate to the research costs involved, we think that difficulties of this kind can be avoided in the future.

Finally, in our conversations with departments, the matter of University policy regarding "indirect costs" was frequently raised as a problem. This is clearly a complex issue with many dimensions. The University depends on funds generated through "indirect costs" to defray the real expenses of supporting scientific research and providing the facilities necessary for individual researchers, who often feel inadequately informed about the procedures used in determining overhead rates, frequently find themselves caught in the middle between government agencies and the University advocating conflicting positions, and are victimized by unanticipated changes in the "indirect costs," which unexpectedly reduce the value of existing grants. At the same time, "indirect costs" appear to become a focus for other feelings. One such feeling seems to be that the University expects the sciences to "pay their way" through research grants without committing adequate resources of its own in support of the scientific enterprise. Another seems to be the suspicion that the sciences are subsidizing other parts of the University in various ways. We do not know how widespread these feelings are. But, given the influence of the University on federal funding, we think it important to confront them. It is our perception that the Sachs Committee Report has not received the attention it deserves among members of the faculty in the Physical Sciences Division and should be redenominated.

C. The Division of Social Sciences
The Division of Social Sciences comprises the departments of Anthropology, Behavioral Sciences, Economics, Education, Geography, History, Philosophy, Political Science, Sociology, and the Committee on Social Thought. In addition it has programs of its own, such as the Divisional Masters Program, and it contributes largely to the work of the Committee on Public Policy Studies, NORC, and other centers and institutes on campus. With over a thousand graduate students registered, it is by far the largest of the four Divisions.

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The Division of Social Sciences has an extraordinarily distinguished history as a center of work in the understanding of human life in society, characterized not only by the excellence of work done within particular fields, but by the.redirection (and in some cases the invention) of fields of inquiry themselves. The departments in the Division for the most part continue to maintain a very high level of distinction, but over the years the character of their relation with each other seems to have changed. At one time, we are told, the departments felt themselves very much to be parts of a larger whole, but today they seem more isolated from each other. Each department seems to have its own characteristic, its own problems, and its own achievements. Their dispersal is indeed reflected geographically: while once most of the departments were housed within the same building, today they are spread over the campus, for the most part in discrete departmental units. Of course many individuals within the Division have productive relations across departmental lines, and there are several cross-departmental organizations, such as NORC. But the Division itself seems to exist only as an organizational structure mediating between the departments and the central administration.

This state of affairs contrasts markedly with a remembered past in which the Division itself was a community with its own life. The key word usually used to describe the earlier state of affairs is "inter-disciplinary." Although it is often wholly clear what is meant by this word, the general point is plain: there was a time when the Division was the place of collective and cross-departmental conversation on topics that raised fundamental questions about the nature and future of social science. There were cross-departmental seminars organized at the Dean's office; collective work on common problems from differing disciplinary perspectives (as in the New Nations Committee); some elements of a Divisional curriculum; and perhaps more important even than these, a remembered sense of shared repression and challenge. It is important that one forum in which cross-departmental conversations occurred in a structured and continuing way was the College, where departments to some degree competed for the shaping of the social sciences curriculum.

While there is no doubt an element of nostalgia in all this, and perhaps error in detail, there also seems to be much truth in the general picture. And while the picture is necessarily somewhat vague, it presents issues of the first importance for the Division and the University.

Two preliminary points should be made. First, the word "inter-disciplinary" carries with it the term "inter," and what is asked of it. The application of the tools of different disciplines to the understanding of a common phenomenon, or (even more restrictively) to the solution of a common problem, is very different from an attempt to work out the foundations of a discipline or the nature of social science itself (although, of course, the first may lead to the second, or the second inform the first). Second, there is now a great deal of inter-disciplinary work being done within the Division, through formal and informal structures other than the Division itself. But with these qualifications, the following central questions emerged from our conversations with members of the Division as topics of real concern to many of them. What should be meant by a "discipline" in the social sciences? What should be the character and function of a Division that—does what units? contains? combines? mixes? challenges? combines?—these several disciplines?

One view, which has its roots in the Structure of the Division, is that the present state of affairs is healthy and good. The expansion and growth of academic fields leads necessarily to the specialization and compartmentalization of knowledge. This is the way the self and knowledge is advanced. While the specialist may be called upon to lend his services in work of a more comprehensive character, the main arena of pursuit of excellence is in depth and focus, and leaves little time or energy for other things.

An opposing view, also expressed within the Divi-
tion, is that the compartmentalization of disciplines is neither necessary nor good. It is not, in fact, self-defining, nor is it sufficient that this any ld a field requires continual reexamination in and our opinion this is the reason for their in-
vestigation and resolution now exists.

One commonly heard kind of remark does much to sum up the situation we wish to describe. "Yes, I know we must be fundamentals of our disciplines and engaging in conversation with others on this campus to that end, and I actually do nothing better myself-why else did I become an academic?" but I simply have no time." Implicit in such a statement is a set of priorities by which time is committed to other matters first, and in our view those priorities should themselves be examined.

The sense of a dividing line is at least to some extent associated with a pattern of outward orientation that is a common and somewhat disturbing feature of modern academic life. To the degree that people regard themselves as members of a larger professional community their energies and talents are naturally directed toward the life of the University. But the question of balance is an important one, and at the moment it seems to us inadequately addressed within the Divi-
sion.

Some members of the Division complain that a d- ministerative burdens and teaching loads, and therefore with their capacity to pursue fundamental questions in the way they would wish. We are not in a position to evaluate either claim comprehensively, but we learned that at least some junior faculty they bear an unfair-
ly large burden of departmental and administrative tasks. Since it is often they who teach in the College, they are asked to serve on College Committees in ad-
tion to departmental ones. In some instances, junior faculty may do more than their share of advising and graduate teaching as well. For such people, the burden of teaching appears necessarily greater, for relatively junior faculty to be burdened disproportionately. In our view each depart-
ment should be asked to report to the Dean its alloca-
tion of departmental and collegiate tasks, with a view to uncovering and correcting any imbalances that may exist.

The complaint that teaching interferes with funda-
mental work seems to us to suggest that something is wrong with the conception of teaching implied in the remark. One would think that teaching would be con-
sidered an opportunity for shared exploration of fundamental themes. One of the merits of the Research Institute proposal detailed elsewhere in this report is that it would provide an institutional context and stimulus to that sort of teaching.

Finally, the departmentalization of the Division is perhaps partly the result of policy and structure. Unlike the Dean of the Humanities Division, the Dean of the Social Sciences Division has no general policy commit-
ted to the Division in departmental terms. To some degree indeed budgetary pressures support the outward orientation of which we speak, for the Division depends substantially upon external support, and the faculty are encouraged to be active in obtaining it. But the foregoing can be taken as an impressionistic picture of life in the Division of the Social Sciences, what might it be to someone else? We have both general and specific responses. At the general level, it seems important to us to encourage the faculty of the Social Sciences Division to rethink the nature of their departmental enterprises, including the relation of one to another. Questions asked should in-
clude the following. To what degree is research and education in our field at Chicago properly or improper-
ly specialized? Do our course structures and degree re-
quirements make sense, as they are considered either by the Division or the rest of the Division? Should we, for example, require our students to take courses in other departments? Does our conception of the dissertation make sense, as a way of training those who will lead our faculty in twenty years? What might be done to improve things?

A modification of the two foregoing proposals, which would supplement and support them, is the idea that certain faculty be invited to organize themselves into a community to examine the core problems of social science. This would be a way of engaging in funda-
mental intellectual work that would be both internal and external to each department; it would also be a way of mining in concrete form whether we do or can have a meaningful Division of Social Sciences. The start would be a seminar, or internal conference; if that seemed fruitful, perhaps the natural next step would be a conference organized here, including others. This could lead to the establishment of a summer workshop, a permanent institute, and perhaps ultimately a degree program.

A Divisional Ph.D. A Divisional Ph.D. obviously can work only if it has faculty support of the strongest kind, and it has obvious dangers, but we think it is worth at least suggesting as a topic for discussion. The central idea of a divisional Ph.D. would be that the graduate in this field would have a kind of cross-disciplinary literacy and fluency that would enable him or her to move in various kinds of academic, governmental, and private positions where comprehension of economics, social data, his-
torical material, political and social structure, and the like are all important. Not that such a graduate would be a mere generalist - he would be a graduate of a single field with expertise to another; he or she must be equipped to challenge and understand at the most basic level. The doctoral work would be designed with that end in view, and would naturally be cross-disciplinary and fundamental in character.

In this connection it is our view that the Division ought to consider afresh the nature and purpose of its
TABLE 3: NATIONAL RANKING OF SOCIAL SCIENCES DEPARTMENTS IN THE UNIVERSITY OF CHICAGO*

Department** 1925 1937 1964 1969 1979 1980
Anthropology NA 1 1 NA 1 NA
Economics 2 2 2 2 2 2
Geography 1 1 1 1 1 1
History 3 3 3 3 3 3
Political Science 2 2 4 4 6 6
Psychology 4 4 6 4 NA NA
Sociology 1 3 4 3 1 2


The Departments

In the present Divisional Masters program. While conceived of as providing a kind of core graduate education that it has become a degree for students not admitted to professional teaching, but at present the program lacks the faculty support required to realize them adequately.

Table 3 sets forth the "rankings" of most of the departments in the Division, and while we cast caution against inappropriate reliance on such figures, or such judgments, they do establish a general picture.

Any judgments we may have about the departments are of necessity extremely tentative, based as they are upon our own impressions, institutional surveys, and general reputation. But despite this uncertainty, we do wish to recommend that the structure of Behavioral Sciences be reexamined, including consideration of a clinical component. It has been suggested to us that the new arrangements might properly be designed to reflect existing strengths, such as child development. In addition, it seems to us that the History department lacks a sufficient sense of common purpose and identity, and we recommend that that Department consider ways in which the efforts of its members can be integrated with one another more effectively.

One possibility would be to organize in groups that cut across temporal and geographic categories. We also wish to observe that three of the strongest departments—Anthropology, Economics, and Sociology—have a distinctive set of orientations and a distinctive character. These features may be positively related to their strengths, and indeed warrant emulation in other departments. They provide the linguistic and stylistic focus, the very nature and degree of the professional component. We also wish to observe that the departments themselves) .

The contrasts suggest the importance of a pronounced effort to modify the "workshop" model used in the Department of Economics to super-

The importance of maintaining faculty quality where it is strong, and improving it elsewhere, cannot be emphasized too strongly, for it is upon the quality of the faculty that our enterprise ultimately depends. We think it essential that each department undertake a thorough external peer review, of the kind recommended in Chapter 3 with respect both to the scholarship presently being performed and the quality of the graduate education programs offered. The issues raised in this report should be included among those examined by such review committees (and of course by the departments themselves).

FACTOR-STUDENT RELATIONS

In addition to the matters discussed above, the central matters raised by members of the one hand, the importance of maintaining what is worthy of protection on the other. Balancing the defense of cherished goals against adaptation to necessity in a delicate game. In such a situation, we will document a sense of crisis in many Humanities departments; one that is labeled "Ethnography," we will delineate the elements of the crisis, as well as the Division's strengths. When we reach the section entitled "Institutions and Recommendations," we will try to avoid mere adaptation on the other hand and ineffective defense on the other. Instead, we will try to suggest ways in which the crisis and decline can be turned to advantage in the occasion for re-evaluation and positive reformulation.

Throughout the country, the humanities have been disproportionately affected by the rampant voluntarism and vocationalism that struck higher education in the 1970s. Many colleges and universities granted students greater freedom in their programs of study. Required courses in the humanities were abandoned, language was declared a low priority for Americans. At the same time, an uncertain economy diverted students from liberal curricula to professional programs. Preprofes-

It is a national sense of malaise that has painful local repercussions. Morale in the Division of Humanities is low. When faculty members talk freely, they seem inclined to complain about their lot: about falling enrollments, about inadequate salaries, about overwork, about inadequate or non-existing funding for research and conference expenses, about inability to make appointments, about the lack of contact among the Divisions or among departments, about favoritism. Not all departments speak with an equally gloomy voice, but we have sought to enter a time when a perception of general woes risks turning the Division against itself.

Because the humanities are fundamental to learning, and because they play an essential role in sustaining other areas of learning and the general intellectual tone of the community, the University cannot afford to let such malaise persist. The critical role of philosophy and the access to meaning afforded by the humanities and the arts are further augmented by the role the humanities play in the intellectual life of other areas of learning. They provide the linguistic and stylistic focus, the very medium of discourse, that enable the expression in other disciplines. Whatever all the humanities, and weaken their excellence and morale, will weaken other areas of the University. Because it is not possible to sustain a major university without first-rate perfor-
mance in the humanities, the Humanities Division requires the collective support of the University in time of troubles.

In what follows, we will propose a series of initiatives more radical than those suggested by the internal committees the Division has constituted in recent years. They have shown a distinct propensity to let external curricular and departmental arrangements muddle themselves, while noting the University's sins of omission with respect to the quality of Divisional and faculty life. We hope to suggest that curricular and departmental arrangements could profit from a more innovative approach on the part of the faculty and that the quality of student and faculty life could profit from Divisional and University attention.

Ethnography*

The Humanities Division is the second largest of the four graduate Divisions, with over five hundred students and some one hundred faculty members. It is also the most complex. It contains twenty-two to twenty-four units depending on how one counts thirteen departments plus the part of the History Department considered humanistic, seven committees recommending degrees, and two programs. The biggest departments are English with about 100 registered students; Art, about eighty; Near Eastern Languages and Civilization (NELC) and Philosophy, each about fifty. Music and Linguistics, each about forty. It provides many services to persons outside the Division who want a humanistic education and languages. In 1973 (the most recent year for which figures are available), it taught 27,476 undergraduate person-units in 1,664 courses, and 18,133 graduate person-units in 2,684 courses. It teaches forty-five different languages, thirty-two to thirteen percent of the total teaching commitment of Art and Design, of Germanics, Romance, Slavic, English (Figure 4). Classics, Ideas and Methods, and General Studies also experienced precipitous declines (Figures 4 and 5). Among these, the modern languages, victims of the shrinking language requirements of the American school system, were conspicuous: Germanics, Romance, Slavic, English (Figure 4). Classics, Ideas and Methods, and General Studies also experienced precipitous declines (Figure 5), while Far East and New Testament experienced lesser losses (Figure 3). (We do not here account for some units founded after 1968.)

There may be some lessons in the pattern of the losses, although readers are warned to inspect the attached representations of enrollment curves with some caution to get a sense for variability over time, and recent recuperations and declines. We have encountered many hypotheses about why differences are so great. Exotic languages have held up better than modern European ones. Whether that is because they are all language and civilization rather than language and literature programs, that is, more broadly gauged in disciplinary terms, or because they are exotic, is unclear. The fact that they receive federal funding and can provide substantial fellowships surely helps account for their greater stability in recruitment. Some departments have buttressed or increased enrollments by lowering the activity in admission at the M.A. level (see Table 7 and discussion). But the hypothesis that bread gauge programs hold up better than narrow gauge may be borne out by the fact that Comparative Literature and History of Culture, as well as the language and civilizations programs, have held up.

* Ethnography is based, in varying proportions, on participant observation, research in the brochures and reports published by the three departments and the Division, and systematic inquiries. We interviewed all chairmen of programs and departments and convened meetings of senior faculty, junior faculty, and graduate students to discuss education and research in the Division.

**

we have that the Division's "due" in the number of faculty it has on its roster. This measure, too, is difficult to apply. Presumably, the appropriate size of the faculty should be measured in light of the diverse functions it is expected to perform, and the proper diversity is hard to specify. By a simpler measure—number of faculty in proportion to number of graduate students—the Division appears to compete favorably with the Social Sciences, and less favorably with the Physical Sciences and Biological Sciences Divisions (see Table 4). This measure may be insufficient. If we had comparative figures for Division of undergraduate and graduate person-units taught, we might discover that the teaching burden in the Division of the Humanities is heavier than the graduate student figure shows.

We have been able to gather some data on whether the Humanities Division receives its "due" in appointments, if the measure of "due" is the proportion of new tenure appointments to total faculty size in the 1972-80 period. Are departments given plentiful scope to make new high-level appointments? By that measure, the Division appears to receive more attention than any other. New tenure appointments in eight years were 61 percent of faculty strength in 1980, while the nearest comparable Division, Social Sciences, appointed only 44 percent of faculty strength.

We are not quite sure how to account for this figure. Since many of the appointments are from the ranks of assistant professors, it does not necessarily imply a high turnover rate. In any case, it suggests the University is not unwilling to make new appointments in the humanities.

The Scarcity of Extras

Money can flow from the greatest historical crisis or from the most banal of micro-misarrangements. Many members of the Humanities Division felt they were being nickel-and-dimed to death, that many of the little supports and benefits that ease the flow of daily academic activity were missing. Some faculty considered the Division niggardly. They were right to imagine that some Divisions—nobly in the natural sciences, but in a more generous financial environment, in which serox and typing expenses, research assistants, long-distance phone calls, and travel expenses do not loom as major obstacles to daily life. Even in the Social Sciences Division the quality of faculty life is comparable, and secretaries, food and travel money are often scarce, some departments and individuals have independent funding and a steady flow of research grants enjoy academic overheads that ease writing and research. More generous funding of small overheads would make a lot of difference in the Humanities Division, as would better information about the equity with which they are dispensed.

The Quality of Faculty and Programs

The same variation that marks this Division in other respects characterizes departmental faculty. We have not found it easy to determine the competitive standing of different departments, but there are clearly a few

TABLE 4: NUMBER OF FACULTY AND NUMBER OF STUDENTS BY DIVISION, 1980

<table>
<thead>
<tr>
<th>Division</th>
<th>Number of Faculty</th>
<th>Number of Students</th>
<th>Student/Faculty Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Sciences</td>
<td>119</td>
<td>564</td>
<td>4.7</td>
</tr>
<tr>
<td>Biological Sciences</td>
<td>75</td>
<td>45</td>
<td>6.1</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>151</td>
<td>28</td>
<td>18.6</td>
</tr>
<tr>
<td>Humanities</td>
<td>100</td>
<td>67</td>
<td>6.7</td>
</tr>
</tbody>
</table>

TABLE 5: NEW TENURED APPOINTMENTS AS A PROPORTION OF FACULTY SIZE (1972-73 to 1980-81)

<table>
<thead>
<tr>
<th>Faculty Size (1980)</th>
<th>Number of New Tenured Appointments</th>
<th>Percent Appointments to Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Sciences</td>
<td>119</td>
<td>39%</td>
</tr>
<tr>
<td>Biological Sciences</td>
<td>75</td>
<td>37%</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>151</td>
<td>28%</td>
</tr>
<tr>
<td>Humanities</td>
<td>100</td>
<td>67%</td>
</tr>
</tbody>
</table>

*The ethnography is based, in varying proportions, on participant observation, research in the brochures and reports published by the three departments and the Division, and systematic inquiries. We interviewed all chairmen of programs and departments and convened meetings of senior faculty, junior faculty, and graduate students to discuss education and research in the Division.

** Does the Division Get its "Due"?

Members of the Humanities Division have been heard to wonder whether the Division is disadvantaged by comparison with other units of the University in—

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that feel themselves well up in the national leagues, and some that do not. We are given to believe that several departments include a fair number of senior faculty who feel no incentive to continue publishing. The term "dead wood" crops up now and then. An aggressive, quality appointments policy can obviously make a difference and improve a department's attractiveness. This seems to have been the case with Music over the last ten years. But there are limits on such a remedy. The effect of the extension of retirement age on tenure patterns makes it particularly difficult to introduce new faculty into weaker departments. In such cases, encouragement to early retirement is an available remedy.

With some trepidation, we include Table 6 as a rough indicator of the perceived quality in a few departments. It is drawn from a series of surveys conducted since 1925, surveys of varying degrees of competence and reliability. We recognize that there are problems in regarding these surveys as accurate at any given time, but they do have a cumulative force.

The over-time comparisons, which show Chicago Humanities leading the nation in most ranked departments in the 1920s and declining thereafter, reflect the increased competition from high quality public education in the post World War II period. Thus most of Berkeley's ranked Humanities departments have, since the 1950s, occupied first through fifth position, and the University of Michigan's departments occupy ratings competitive with many of ours. The strongest competitors in the Humanities, however, remain Yale, Princeton, and Harvard.

These surveys fail to capture Chicago's virtues; they do not include interdisciplinary programs and committees which are a distinguishing feature of Chicago education and which, as our earlier figures show, have continued to attract students when other department enrollments have declined. The surveys do not capture the "exotics" among language departments, where large and stable departments such as Near Eastern Languages and Civilizations, with long and distinguished traditions in archaeology and ancient languages, constitute much of the action in our Division; and a small department such as South Asian Languages and Civilizations regularly contributes to first or second national ranking in the competitions for South Asia centers. None of the ACE surveys paid attention to Art and Music. When Ladd and Lipsset in 1980 prepared a survey, this effort by two distinguished social scientists virtually ignored the humanities. Its review of music departments compared incomparables—the Juilliard School of Music, with its practical orientation, bears little relationship to a musicological department like ours. Its report on a general category denoted "foreign languages" suggests that to some social scientists all non-American languages look alike.

Nevertheless, Table 6 gives some sense for variations, and does not depart too far from what we could gather in our inquiries. The trends over time suggest that in an expanding universe of graduate departments, the Division as a whole has not held its own as it should. The Table suggests that movement among nationally ranked departments has been as often down as up. In a few cases, current low national standings have long precedent. Better and more discriminating measurement that gave data over time, and which included our "exotic" fields as well as interdisciplinary programs would probably have presented a stronger overall picture.

The disparity between the categories that national ranking schemes have the wit to report, and what we excel at—interdisciplinary programs, non-Western area programs—points to the need for a strategy of making our strengths known nationally.

The Commission also approached the problem of quality by assembling data patterns of tenure (see Table 1). These statistics suggest the degree to which departments look to national recruitment pools for their tenure appointments or confine themselves to recruitment from within.

The guiding hypothesis was that national recruitment created a competitive and demanding context, and served as possible protection against self-serving in-suitability. The hypothesis may be too restrictive: when a department with very strong national standing recruits internally, a different interpretation may be warranted than if a weak department does the same. When a department that is one of very few of its kind recruits internally, again a different interpretation may be warranted than otherwise. The data above should be viewed in the light of these various possibilities, and perhaps others we have not conceived of. We also note that the Humanities Division, as a whole, with 62 percent inside recruitment, performs better on this measure than Biological Sciences (82 percent) and Physical Sciences (70 percent) but worse than Social Sciences (82 percent).
hope to advertise attractive programs if we have few
real programs to advertise.
Program requirements can also be an obstacle to
quality. Some departments hang on to requirements
that prevent them from using faculty in new ways
because they perceive nationally ranked competitions as
having such requirements. The dilemma is a classic ex­ample of collective goods (or collective bads) calcula­
tion: language departments all across the country find
themselves in deep trouble in part because, despite
changing support bases and demand structures, each is
determined to preserve the full proliferation of conven­
tional requirements which it perceives competitive
departments maintaining, even while all are staggering
under the shared overload that each is forced to main­
tain. The implication is that maintaining quality hu­
manities departments may well call for imaginative and
even radical thinking about which requirements make
sense for various constituencies: for students who will
reach in liberal arts colleges, for students going on to
non-academic careers, and for students going into ad­
vanced research. Can the world of required and op­
tional courses be structured in ways that encourage
more common courses across language departments?
That vary requirements depending on course goals? Reevaluation of programs can adddress the problem of
quality in a changing environment.
Quality of Students
We have tried to reflect on the quality of the students
who now enter the Division; our reflections have been
added to the Commission's systematic survey of enter­
ning graduate students and of those who declined admi­sion, reported in Chapter 4. As we have no data over
time, we cannot speak to the question of whether stan­
dards of performance are stable or declining, but we
can say a few things about quality at the moment. As
we noted in the earlier chapter, Divisional applications
have declined more than Divisional enrollments, which
means that departments are taking the same number or
somewhat fewer from a shrinking pool. In 1981-82,
applicants were 53 percent less than in 1968, but
enrollments were only 35 percent less than in 1968.
This fact does not necessarily suggest that departments
have been maintaining enrollments by lowering stan­
dards, though the opinion that they do is widespread.
Those who would choose to go into humanities
graduate programs in the 1980s, despite declining job
prospects, may be more highly self-selective, and
multiple applications seem to have declined.
As Table 7 shows, departments respond differen­
tially to the problems of keeping up enrollments. The data
on GRE and GPA scores of students admitted in 1980
in some cases reflect different strategies, especially
between departments that strongly emphasise the M.A.
and those who do not. In some cases, the data reflect
problems.
Art and Near Eastern Languages and Civilizations,
which have unusually high acceptance rates by com­
parison with the Divisional average, also admit a
higher percentage of lower GPAs and GREs. There
may be nothing particularly threatening to a depart­
ment's standards in such a strategy, provided it has
good internal gatekeeping at the end of the first year or
the M.A. level. Nor need such gatekeeping raise
morale problems if students enter with the wish and ex­
pectation of a terminal M.A.—as do those students in
Near Eastern Languages and Civilizations who want a
Mid-East specialty in order to enter government service
on the one hand, Music (which has in­
creased its enrollments since 1968) attributed its rising
fortunes to a growth in national reputation related to
good appointments and promotions. On the other hand,
high standing in the national ranking did not prevent
degining enrollments in the English department.
Money and Recruitment
How about money? Several departments thought par­
ticular competitors offered higher aid packages. Philo­sophy believed Harvard, Yale, and Pittsburgh did so.
Near Eastern Languages and Civilizations mentioned
large grants at Yale. Slavic believed that competition
which achieves a higher than average acceptance rate
while minimizing the low GREs and GPAs, illustrates an
outcome most departments would prefer. The fact
that Comparative Literature gets more migrants from
other departments than do most departments may help
account for the high acceptance rate. Those depart­
ments that have low acceptance rates despite the
generous reach of their admissions policy have prob­
lems.
Recruiting and Retaining Students
Many faculty worry that in recruiting we do not get our
share of the national pool. There is a good deal of
worry about the Division's capacity to attract enough
students and the best of them. In Chapter 4, we con­sidered a rough measure of the University's ability to
attract the best students in the national pool by asking
what proportion of those students admitted to Chicago
and seven other distinguished graduate schools
(selected for comparison by Division) chose to come
here rather than go to one of the others. By this
measure the Humanities Division as a whole, like all
other graduate Divisions except Social Sciences, was
somewhat less competitive for the most attractive pro­
spective students than might be expected.
What attracts students to Chicago? What keeps them
here? It is improbable that they come for the lovely
weather. The Commission's survey confirmed what the
common sense of the graduate faculty would assume,
that students make their decisions mainly on the quality
of the faculty, the reputation of the program, and the
overall quality of the institution (Chapter 4, Figure
4D). Yet there is a certain fickleness in the operation of
criterion. On the one hand, Music (which has in­creased its enrollments since 1968) attributed its rising
fortunes to a growth in national reputation related to
good appointments and promotions. On the other hand,
high standing in the national ranking did not prevent
degining enrollments in the English department.

Figure 3: Humanities Departments with Declining Enrollments (1968-82)
Base: 100 - Department's 14-Year Average Enrollment

Figure 4: Humanities Departments with Precipitously Declining Enrollments (1968-82)
Modern Languages
Base: 100 - Department's 14-Year Average Enrollment
Figure 5: Humanities Departments with Precipitously Declining Enrollments (1968-82): Other

Base: 100 = Department's 14-Year Average Enrollment

from Illinois/Urbana, which has a National Resource Center in Slavic, and can afford to give substantial support to graduate students. Grant and fellowship opportunities have increased by 18 percent over 1979-80 (see Chapter 4, Table 5).

Teaching Experience, Recruitment, and Retention

We were often told that both recruitment and placement were affected by the lack of teaching opportunities for graduate students. Lack of prospects for teaching was ranked high as a criterion of decision by those who declined admission to the Humanities Division (Appendix B, Table 11). Yet we found the factual situation rather rich. The Commission's survey of students shows that 42 percent of respondents among graduate students in the humanities have had some teaching experience. But as the survey does not specify whether we must surmise that some teaching experience occurs despite rather than because of the University's efforts. There are now teaching opportunities in the College, and these are likely to increase modestly. Where there are few opportunities within the University, some departments have been inventive in supplying teaching experience and training through internal apprenticeships and external opportunities in cooperating colleges. These opportunities need to be enhanced and made more visible, especially in our recruitment literature.

In 1979-80, eighteen graduate students in the humanities were involved in regular college teaching. They taught, or taught in, forty-six quarter courses as lecturers (ten), course assistants (two), tutors (five), and graders (four). The Slavic and Romance Languages Departments have generally selected from their own advanced graduate students for elementary language teaching positions, while Germanic has been reluctant, on the problematic presumption that such selection is more risky for the College. While national competition is a valuable check on local favoritism, the quality of several departments has had similar offers that have not been pursued for lack of student interest or faculty push.

In so far as graduate departments want to increase teaching opportunities to meet the competition of the T.A. stipends at state universities, they are doomed to disappointment. We see only marginal prospects for increase in paid teaching opportunities within the University.

Morale and the Quality of Life

Morale among students surely affects retention rates. It is related to the recruitment factors we have already considered: program reputation, money, and teaching opportunities. But once a student is here, levels of intellectual stimulation, companionship, support and attention from faculty, services, the neighborhood, all play a role. According to the Commission's survey, the dominant mood of graduate students in the humanities, when they are asked to summarize their perception of the University's programs and services, is one of moderate satisfaction, as it is in all other Divisions (Appendix B, Table 27). Yet in our conversations, we encountered widespread complaints about the sense of neglect felt by students at all levels. This of course varied greatly from program to program. We suspect, but cannot prove, that the programs that are least troubled by declining retention tend to be those that pay most attention to students, from the time of application until the (sometimes bitter) end. We would be surprised if findings were markedly different among students at our equally high-achieving, froshbait campuses. But that is no reason for accepting the existing situation.

Student graduates in the humanities "use" the University less than do other students; they use the community resources, food services, transportation, Student Health, orientation, Student Housing, less than do other students. They use the athletics facilities strikingly less than do other students. Financial aid is the one facility they use strikingly more (see Appendix B, Table 40). Are they less integrated into the community? Is this a matter of taste and style?

Sixty-two percent of our graduate student respondents in the Humanities Division work, slightly less than those in the Social Sciences (67 percent), but many more than those in the Biological or Physical Sciences Divisions, of whom only 25 to 29 percent works through two regularly scheduled courses. In English 504: Problems of College Teaching, students are associated with a professor teaching an undergraduate course, and have opportunity to take a number of class periods and receive criticism. Students in English 503: Teaching Composition, receive experience through small composition-discussion groups and a large lecture course in advanced composition. The Slavic model is relevant for other foreign language departments, and indeed Germanics and Comparative Literature have aspects of an internship program. In Slavic, students are given supervised experience in handling drill sessions and other features of teaching for language courses. The internship, as in English, is part of the educational program, not a job, but interns are the minority by which Slavic forms a trained pool from which lecturers can be selected.

Finally, several departments have developed lines to colleges in the Chicago area that can use the skills of advanced graduate students on a temporary basis. The English Department can count on a limited number of predictable slots in city colleges where its students teach freshmen composition under supervision for pay. Several departments have had similar offers that have not been pursued for lack of student interest or faculty push.

In so far as graduate departments want to increase teaching opportunities to meet the competition of the T.A. stipends at state universities, they are doomed to disappointment. We see only marginal prospects for increase in paid teaching opportunities within the University.

TABLE 6: PUBLISHED RANKINGS OF HUMANITIES DEPARTMENTS OVER TIME

<table>
<thead>
<tr>
<th>Year</th>
<th>Art</th>
<th>Classics</th>
<th>English</th>
<th>French</th>
<th>German</th>
<th>History</th>
<th>Linguistics</th>
<th>Music</th>
<th>Philosophy</th>
<th>Russian</th>
</tr>
</thead>
<tbody>
<tr>
<td>1925</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
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<tr>
<td>1957</td>
<td>12</td>
<td>7</td>
<td>12</td>
<td>12</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>1964</td>
<td>NA</td>
<td>NA</td>
<td>8</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>1969</td>
<td>8</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>1979</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>1980</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

TABLE 7: DEPARTMENTS GROUPED BY PERCENT OF ADMITTEES UNDER 600 VERBAL GRE OR UNDER 3.5 GPA (1980-81)

<table>
<thead>
<tr>
<th>Department</th>
<th>Percent Under 600 Verbal GRE**</th>
<th>Percent Under 3.5 GPA***</th>
<th>Percent of Admits who Accepted</th>
</tr>
</thead>
<tbody>
<tr>
<td>FELC (12)</td>
<td>67</td>
<td>55</td>
<td>25</td>
</tr>
<tr>
<td>Romance (14)</td>
<td>55</td>
<td>57</td>
<td>29</td>
</tr>
<tr>
<td>Art (53)</td>
<td>49</td>
<td>55</td>
<td>40</td>
</tr>
<tr>
<td>General Studies (20)</td>
<td>55</td>
<td>55</td>
<td>50</td>
</tr>
<tr>
<td>SADC (8)</td>
<td>36</td>
<td>33</td>
<td>25</td>
</tr>
<tr>
<td>Group II</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Music (28)</td>
<td>28</td>
<td>46</td>
<td>28</td>
</tr>
<tr>
<td>Slavic (9)</td>
<td>90</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>German (5)</td>
<td>50</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>History (Hum) (29)</td>
<td>54</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td>Classics (14)</td>
<td>17</td>
<td>43</td>
<td>0</td>
</tr>
<tr>
<td>Group III</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Philosophy (39)</td>
<td>21</td>
<td>26</td>
<td>30</td>
</tr>
<tr>
<td>English</td>
<td>16</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>German (171)</td>
<td>17</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>History of Culture (5)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ideas &amp; Methods (5)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*This figure is the same as the figure of total admits reporting Grade Point Averages GREs. The number reporting GRE scores is lower, so not all students take the Graduate Record Examination. The percentages have to be treated with skepticism where the total admitted is a parenthesis, so very small.

**As a percent of admits reporting GREs.

***As a percent of admits reporting GPA.

work (see Appendix B, Table 34). Work obviously adds to the sense of overburden—more than half the students who work complained that the work conflicted with their studies. Another source of discontent may be the fact, discussed in Chapter 4, that the road to the Ph.D. in the Humanities is uncommonly long. This is true nationally and locally: an average of ten years for the examination. Some of our distinguished competitors are by three to six years: Cornell, Harvard, Princeton, Yale, Massachusetts Institute of Technology (Chapter 4, Table 1). Why? Money may be part of the answer, but shorter graduate programs and different requirements may be another. The Commission's urgent recommendations for revised tuition and residency requirements are responsive to this question (See Chapter 4, Section B).

In our discussion of the proposal to create a Research Institute in the Humanities and Social Sciences Division (Chapter 6), we address the anxiety that students receive declining attention from their research-oriented faculty at precisely that moment when they begin serious research. Admission at the end of the second year to the Research Institute and its problem-oriented workshops would provide a systematic context in which students could carry on advanced work among peers and elders engaged in a similar enterprise. A Graduate Student Center would enhance opportunities for collegial interaction.

Our ethnography has suggested areas of strength and of weakness, and prepared the ground for prescription. Our recommendations will be locally oriented. Their impact and effect could be significantly influenced by changes in national trends which are not, however, clearly discernible.

**Solutions and Recommendations**

We shall organize our discussion of solutions and recommendations around six subjects:

(i) The re-evaluation and reformulation of curriculum and organizational forms in the Division, in the light of the various goals of graduate education as we have articulated them.

(ii) The establishment of a Research Institute in the Humanities and Social Sciences.

(iii) The prospects for a Language Institute.

(iv) The M.A. in a "multiple exit" Divisional education.

(v) An aggressive policy of high quality new appointments in faculty areas.

(vi) A serious reconsideration of the way the Division presents itself to the outside world.

The Multiple Goals of Graduate Education

In Chapter 3, we emphasized that graduate education at the University of Chicago prepares three overlapping groups: research-oriented graduate faculty for advanced teaching and research; teachers for liberal arts colleges; humanistically oriented non-academic professionals. Typically, the Division of the Humanities has given very different emphasis to each of these goals. It has been itself as providing education principally (if not exclusively) for future research scholars and graduate teachers.

Yet the distribution of our students across college teaching, advanced teaching and research, and professional roles has changed by comparison with earlier times. The proportion of our Ph.D.s in the humanities who go into teaching and research has been declining in the last ten years, from 93 percent in 1970-71 to 69 percent in 1979-80 (Chapter 2, Table 4). The relative emphasis on Chicago at advanced teaching, and research is appropriate. It represents our comparative advantage and our special vocation. But this emphasis need not preclude the faculty from more imaginative attention to other goals. When in some departments six professors are reduced to practicing their comparative advantage on no more than the same number of graduate students, related goals can legitimately claim more attention.

It is reasonable to imagine a graduate education in the humanities, or possibly in humanities and social sciences, which would educate graduate students, or some of them, more liberally and less narrowly than we have so far done; which would explicitly envision an education with multiple outcomes—graduate teaching and research; undergraduate teaching; research and prescription in profit, not-for-profit, and government institutions; professional and policy jobs? One can imagine a variety of possibilities in addition to broadening within the specialized Ph.D.: wide Ph.D programs in, say, European studies at a cross-Divisional level; a Divisional Ph.D. in the humanities oriented to cross-departmental subject matter; joint programs with professional Schools with double counting encouraging humanities and law or business; M.A. programs in policy and economics for humanists who want to add a professional capacity to their humanities preparation. Such a conception means we should also envision a new breed of humanistic professionals aiming for richer lives and wider capabilities.

Reformulating, Reorganizing—Warrants and Possibilities

It is not self-evident that the present curriculum of each department, the present departmental boundaries or even the organizational structure of the Humanities Division, are the most rational and beneficial that could be imagined. We have encountered frequent suggestions concerning different forms of program or unit organization, most frequently in connection with modern language programs. Curricular innovation does not necessarily require redrawning unit lines, although some would argue that without such organizational change, units do not look beyond their boundaries. Suggestions for reconsidering programs and for reorganization arise in part out of urgent problems, such as the low enrollments of some departments and the problematic quality of some faculties. They arise also out of a sense that for some departments it is not a self-conscious and reasoned set of priorities that dictates curricular choices, but unexamined convention or mutually destructive adherence to traditional sequences and requirements by nationally ranked departments, all of whom are in trouble.

Suggestions for reconsidering programs also arise out of positive considerations: concern with the chang-
ing pattern of job requests ("German, with capacity to teach French first semester"). It is clear that to teach Modern European Literature), concern with the changing nature of the intellectual interest of persons who teach and study the humanities; interest in common problems for example the criticism— or in possible collaboration across humanities-social science lines: Medieval Studies, American and European Studies. The latter also arise out of a concern, mentioned above, for ways in which the Division can respond to the needs of graduate students who face a variety of options.

The problem of interdisciplinary relations in the Humanities Division differs from that in Social Sciences. In many respects it is easier. Social Science departments are distinguished from each other, if not by the phenomena they treat, by the conceptual and methodological traditions they follow. Some methods, to be sure, overlap. Sociology, Political Science, Behavioral Sciences, Economics all use some of the same statistical methods and most use some mathematics. Some conceptual traditions also overlap. History, Anthropology, Political Science, Sociology all draw on certain common macro-sociological traditions that preceded the fragmentation of the social sciences into philosophy, psychology, anthropology, sociology, and history. But departments are distinguished by sufficiently different theoretical and methodological and conceptual frameworks to account for, if not justify, separate organizational forms. The matter is otherwise in the Humanities Division. While some departments are indeed distinguished by subject matter, medium and conceptual traditions—Music, Philosophy, Art—are far less so. The language departments, which account for about one third of the humanities students who face a variety of options.

The Humanities Division has some advantages over the Social Sciences Division for co-ordinating Divisional affairs and creating intradivisional communications. Its Divisional affairs executive committee has a certain solidarity and unity, while the Social Sciences Division’s equivalent organ has more of a bazaar character, to which each principal sends its bargaining representatives. While it is not clear to us what is the appropriate unit or agency whose science definition and programs should issue, the Divisional executive committee seems a possible starting point.

We have tried to imagine what kind of curricular and organizational reform would make sense in the context of the multiple goals of graduate education. Theorically, interdisciplinary, problem-oriented programs which recruit more of the students, perhaps also beyond the Division, appear to be the most appropriate response. In that case, why shouldn’t students simply select the Committee on Social Thought? The Committee on Ideas and Methods? Or the History of Culture? Because many students wish to choose a dominant identity of the sort national languages, or a more specific interest, but would like to take advantage of the sort of avant-garde independent that is the mark of Chicago education. One would hope that the approach of such committees would inflitrate more widely. Each committee has an appropriately innovative all-purpose store, Design Research, most successful as a unique marketing venture at the moment it went bankrupt, driven out by competition from the traditional department stores that it has already infiltrated with its sophisticated conception of convenient products. The various imaginative committees now developing within the Humanities Division may not appreciate the analogy and the prospect it evokes for them. But why should students in the department of English, who generally do not share in the new wide-ranging intellectual combinations on which the University prides itself?

If increased emphasis on thematic and problem-oriented programs appears to be an appropriate response, they do not necessarily depend upon departmental reorganization. The route, for example, of a unified modern language and literatures department at some institutions, has many drawbacks: it may not have a distinguishable intellectual mission; at Chicago, it would be so large as to swamp federal sub-units that would probably defeat the purpose. The Divisional conversation in which members of the Comparative Literature department and the Dean have engaged in recent times illustrates the point as well as the resistance to more thematic approaches. The circumstance that enrollment in committees is holding up better than in some traditional language departments, the idea that departments of languages and literature seem to survive better than departmenst of languages and literature, are also relevant to these concerns. Having spoken enthusiastically to the issue of reach and breadth, we would like to emphasize its reverse, the virtues of narrowness, and assert that appropriate graduate education can accommodate both. Within broader programs, these graduate specialists who

achieve excellence by focusing rather than widening the lens must find the opportunities to continue to do so. Most faculty "double-track" their teaching as it is, between specialized seminars that reflect their research interests and broader courses that allow them to meet with others in their field and in related fields. The right kinds of curricular innovation need not be utopian.

The precise response to the question of appropriate programs and organizations is a problem only the Division and departments can answer. It seems evident to us that such questions need to be more urgently addressed than they were some years ago by the Northcott Committee (Committee on the Present Organization of the Division of the Humanities, 1973), which wrote at a less exigent moment in history. Some would argue that, given the existing departmental structure, no progress can be made. And indeed, departments have often taken a parochial view. As one of our colleagues put it: "An administrative unit inevitably becomes a political unit that preaches for its own interests, as it sees them, perhaps without sufficient regard for the interests and purposes of the larger university." On the other hand, it may be possible to innovate without departmental reorganization. One can imagine, for example, a well-considered program that would include a component of courses stressing themes and problems, and in which drawing together students and faculty from several departments for common work, and another component of courses focused on the several departments. Such a program would award Ph.D.s in the departments, but work out requirements cooperatively. Such a program would address problems of intellectual significance, recognizing that national literatures, especially those in Europe and America, are not self-contained organizations, but participate in general issues in the creation of literatures. But to launch it, mechanisms and intellectual sub-communities (super-institutions?) would be needed that can suggest new perspectives on what is dispensable and what indispensable, and imagine new combinations of meaningful intellectual issues.

Research Institute and the Humanities

The Commission's proposals for a Research Institute in the Humanities and Social Sciences (see Chapter 6) is intended to place greater emphasis on research as the essential component of graduate education, and less emphasis on course work. It develops our earlier recommendation that required work for the Ph.D. be reduced to six quarters, as it is in most of our sister institutions; that students in their third year be admitted—or not admitted—to the Research Institute; and that their work be continued in the context of a series of seminars and workshops. Such workshops would be offered

by small groups of faculty sharing common interests and preoccupations, from a number of related disciplines, and would provide a context in which students and faculty would discuss their ongoing work. Students would attach themselves to one or more of such workshops. The idea is to create a context for the study of graduate education which we profess to value highly, but which we support and structure most modestly, and to encourage research and for research apprenticships of the sort that have always been com-

mon in the natural sciences. The Commission's position is that workshops would frequently, though not necessarily, have a Divi-

sional of cross-Divisional ambition. The Institute, in this fashion, could provide the kind of flexibility which might otherwise be achieved only by departmental or curricular reorganization. One can imagine a Ph.D. level student in Romance Languages who intends to work on Chanson de Roland, or a student in political Class who is working on Homer, participating in a common workshop on the epic and bullfight, including faculty from South Asia, Classics, and Romance Languages. One could imagine a workshop in English history, literature, and civilization attracting students from the English component of the History department, from historical Sociology, from the English department, and from Comparative Literature.

Such an institutional innovation has several implications. It would oblige departments to scrutinize most sharply their present requirement of formal course work (for example, fourth-year Sanskrit) but this would become a matter of developing intellectual competence, not fulfilling course requirements. (2) It would oblige the University to reconsider the use of faculty time, as the mounting of Institutes and workshops took the place of other faculty obligations. The workshops, it might be observed, would make a different kind of demand on faculty time than do courses. Instead of preparing lectures or discussions based on secondary or primary sources, faculty would be expected to discuss such aspects of their own research—or perhaps of that of outsiders—as it relevant to the interests of the workshop, and read and re-

spond to ongoing student reports, papers, and proposals. (3) It would encourage faculty to enter into intellectual coalitions and alliances with colleagues in and out of departments, as such workshops would create more associative intellectual environment at the faculty level.

Prospects for a Language Institute

A leading source of professional discontent and program inflexibility in the language departments of the Division is the attention faculty believe they have to ex-

pend on teaching bread-and-butter courses. Using ad-
two would have the flexibility to accommodate experienced research and teaching.

The forms such an institute could take are several, whether they be conceptualized as a Language Institute, which has often been proposed and as frequently discarded, deserves to be considered yet again. A Language Institute is essentially a device for decoupling the personnel requirements of elementary teaching from the faculty requirements of advanced programs; for creating non-competing and non-comparable teaching hierarchies, one appropriate to first- and second-year courses, and one appropriate to literary analysis, criticism, advanced linguistic skills, research, and writing. By not decoupling these two forms of teaching, everyone is disadvantaged: (1) advanced faculty who find elementary teaching tedious; (2) advanced graduate students and non-academic language specialists who would like to teach but do not find a predictable structure of opportunity; (3) students who find their faculty unwilling to perform drills and other repetitive exercises, and who encounter graduate students and others who are not trained for the function they in fact perform though they have not been acknowledged as performing them.

Some of the components of a Language Institute are already in place in the Humanities Division. A distinguishable teaching sector staffed by tenured and tenured-track teachers has come into being. The survey prepared by the Committee Concerning the Use of Graduate Students in the College (Strier Committee) noted that eight graduate students taught language courses in Romance Languages and Slavic in 1970-80. The Slavic Department has created internship and training arrangements in which graduate students acquire teaching experience and learn how to conduct drill sessions under supervision before being given independent charge of a class. Spanish is working on similar training arrangements. Such a sector, to function properly, would have to come under the training and recruitment guidelines that are being developed in the College, to protect teachers from the dangers of personalized appointment patterns and students and from amateurism. It would have the flexibility to accommodate experienced native speakers who do not mean to perform advanced research and teaching.

The forms such an institute could take are several, and it turns out that language teaching should be or can be integrated with the study of the great literatures. In one mode, highly developed at the University of Michigan, the focus is on intensity of skills, drilling, etc. Other models pair specific language skills with a comparative language and literature emphasis—the University of California at La Jolla is an example. Both envision some separation of skill functions from general literary concerns, a separation that is a source of controversy, and we do not wish here to take a position in that matter. We urge that the Division once more tackle the proposal to create a Language Institute duly constituted for that purpose. We see the flexibility that can be provided by a Language Institute as part of a package of measures that could make less necessary other types of Divisional restructuring, that would encourage curriculum re-evaluation and re-creation in the Division, and would free faculty for more wide-ranging thematic and interdepartmental combinations.

The M.A. in a "Multiple-Exit" Divisional Education

One element in a "multiple-exit" view of Divisional programs is the M.A. level. Such programs have a variety of meanings. But there is wide agreement that they could be more vigorously employed to utilize faculty energies not now being used at the Ph.D. level. Earlier efforts to consider the matter of enrollments in the University (for example, the 1970 Continuing General Education plan) also stressed the potential significance of such programs.

We urge you to lay stress on the possibilities of M.A. programs, but we would like to begin with the proposition that they need to be conceptualized more seriously than hitherto, intellectually and in terms of their relation to other programs. There is some tendency, when thinking about M.A. programs, to take a trash basket point of view, to treat them as residual outcomes, to presume that they are going to be intellectually underprivileged areas, populated by scholarly underachievers, and to allocate to them the residual energy of faculties after they have expended their best selves on Ph.D. efforts. They are treated in financially stingy fashion.

The Master of Fine Arts and the M.A. in Public Policy are examples of M.A. programs shaped by distinctive educational and intellectual missions. These examples differ from the M.A. as a consolation prize for disconsoolate and unsuccessful Ph.D. candidates, or as M.A. programs conceived of as a reception center for plenty of warm bodies that will raise a Division's body count. It is useful to reflect on the fact that one of Harvard's nationally most conspicuous programs, that offered by the Kennedy School of Government, is a well-funded, well-conceived M.A. program. Some departments, notably English, have traditionally made a sharp distinction between admission to the M.A. program and later admission to the Ph.D. program. Like Economics, they admit all who they think can profit from master's level course work. Then, on the basis of one year's evidence, including a final departmental examination, they admit a select group to the Ph.D. program. Though there have always been some reservations about such programs, on the grounds that they diffuse departmental effort and disappoint many students who originally think they have a better chance for candidacy than they do, it has been defended and maintained on the good grounds that many students do in fact want, for various reasons, only the M.A.; that we make better selection after students have been a year with us than we could after they receive their B.A.; that we in fact discover a great deal of fine talent among those who would be rejected if we went simply on the quality of undergraduate college achievements and recommendations; and that we perform, in short, a public service and a service to ourselves with the program.

If we want to strengthen M.A. programs, we must do so in ways which are compatible with the talents and preferences of our faculty and the traditions of the University. M.A. programs that have a significant intellectual content, that have structural means to attract faculty talent and commitment, that fit into some meaningful general educational goals and purposes, that have plenty of resources both ideal and material, could attract both new candidates and faculty enthusiasm.

Appointments

We propose an aggressive policy of high quality new appointments for facilitating programs, possibly at several levels, visible enough to make a difference in how such departments are viewed nationally. Such appointments should be coupled with some definition of how the department fits into the larger Divisional context and a wider definition of curricula—which will pose some delicate problems. They could be facilitated by encouragement of early retirement by faculty whose interest in their field is waning. Where low morale or a vested interest in failure makes it impossible for a department to weight itself, one can imagine the creation of a temporary committee drawn on Divisional faculty to support the recruitment and appointment process.

Addressing the Image of the Division

Everyone is aware that Humanities has an "image" problem. No departments are clearly ranked among the top two or three nationally when measured by the more obvious measures of reputation. But everyone who knows much about our program knows that such measures inevitably overlook some of the most important of our qualities. As we said earlier, no national survey can "give us credit" for our interdisciplinary programs, because our titles do not fall on their charts: there are no "we" in "we are not at all" for "General Studies in the Humanities," for our distinctive B.A. and M.A. programs; for our Ph.D. programs in "Ideas and Methods" and "History of Culture." More generally, there are no ways in which reputation studies can reflect very well the contributions to Divisional life of certain fine teachers whose research is employed primarily in supervising dissertations and classroom teaching. We urge that the Division once more tackle the proposal to create a Language Institute duly constituted for that purpose. We see the flexibility that can be provided by a Language Institute as part of a package of measures that could make less necessary other types of Divisional restructuring, that would encourage curriculum re-evaluation and re-creation in the Division, and would free faculty for more wide-ranging thematic and interdepartmental combinations.
desirability and feasibility of establishing a separate committee or department for teaching and research in computer science.

We have not reached full consensus regarding the merits of the case for creating a Department of Computer Science. Many members of the Commission are in favor of such an arrangement, but some are opposed, or feel inadequately informed regarding the intellectual and financial implications of the matter. All agree, however, that this is a question of fundamental importance to the University as a whole and that it must be seriously addressed. In what follows, we state some of the arguments for and against the creation of a separate Department of Computer Science. We conclude by recommending the creation of a committee to study this matter further.

As a field of study, computer science has grown considerably in the past decade; its subject matter is more clearly defined and its relationship (actual and potential) to other intellectual disciplines more easily discernible. The national demand for research and instruction within this field—indeed, for highly qualified research scientists and teachers to carry them out—is evident. This existence as a separate and distinct discipline has long been recognized by the National Science Foundation, which has offered extensive support for research in all areas of computer science. Furthermore, this University is now virtually alone among major research universities in not having a separate computer science department. While this fact in itself does not dictate that the University should fall into line with other institutions, it does suggest the advisability of thinking critically about the relevant issues.

The most relevant issue for the University as a whole is the degree to which the theory and practice of computer science merit a department. This question is probably more important for those engaged in state-of-the-art research in a variety of disciplines within the natural sciences, the social sciences, and even the humanities. In all of these fields, the development of computer science is changing the ways in which research is being conducted; in some, it is changing the world we study in a manner that must and will affect our educational system. The extent to which computer science is simply one discipline among many, we might reasonably conclude that it need not be cultivated here. On the other hand, we think of computer science as merely the practical skill to use the computer is a tool usable in many different areas of inquiry than creating a separate computer science group. Appropriately conceived and developed, moreover, the challenge of building an academic program in computer science at this University might well provide attractive to a number of distinguished computer scientists. A second objection to the idea of creating a separate computer science department argues that, since the computer is a tool usable in many different areas of research, the appointment of good researchers able to use the computer with sophistication in any field may be far more effective in developing its research potential than creating a separate computer science group. This is perhaps the most interesting objection to discuss since it brings us to the most basic question: the nature of computer science in its relationship to other disciplines. If we think of the computer as merely a tool and computer science merely a practical skill to use it—rather like typing—then we might reasonably expect faculty and students to acquire this skill as necessary by some means or another. If, on the other hand, we think of computer science as a conceptual instrument—one likely to play a role in the development of a number of modern disciplines analogous to that played by the calculus in the development of classical physics—then we must take an entirely different view of the matter. We must ask whether scholars interested in making the most sophisticated use of computers in their own research are likely to be attracted to a university which values research using computers but not research into computers. (There is already some evidence to suggest that they will not.) We must ask how these research-consumers will keep abreast of the advances in computing necessary to make their research the most sophisticated in the field. We must ask where they will find the intellectual resources necessary for the development of innovative methods, languages, and systems to advance their research. We must ask why computer science as a discipline is likely to influence the development of the theory and practice of computer science. In response to the concerns raised in that report, and to increasing student demand, the Department of Mathematics and Physical Sciences has developed a more comprehensive sequence of courses in computer science, adding to its existing courses in mathematical logic, the theory of computation, and computer science and the inadequacies of the existing computer science department argues that, since the computer is a tool usable in many different areas of inquiry than creating a separate computer science group. Appropriately conceived and developed, moreover, the challenge of building an academic program in computer science at this University might well provide attractive to a number of distinguished computer scientists.
From this point of view, a relative latecomer enjoys some compensating advantages. The institutions in this field and to avoid proving counterproductive elsewhere. It is in a to offer outstanding computer scientists who may new directions.

ment of Mathematics already receives each year a

ing a graduate program in computer science. At

more intensive program. Excellent students have been

even though any realistic plan would probably need to

program in computer science would be substantial, in
time, we must be prepared to weigh the costs of not

significant problems in a variety of fields

would be costly to the University to find itself a

follower, rather than a leader, in those disciplines in

which the nature of research is likely to be transformed

by sophisticated applications of computer

search of better training in the theory and

Chapter 6: A Research Institute Structure in the Humanities and Social Sciences

Our work on this report has repeatedly drawn our atten-
tion to a striking contrast in the pattern of graduate
ducation in the different Divisions. Throughout their
time here, graduate students in the Physical and

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From this point of view, a relative latecomer may also enjoy some compensating advantages. The University is in a position to learn from the mistakes of other institutions in this field and to avoid organizational rigidity and strategic ininitiatives that may already be proving counterproductive elsewhere. It is in a position to offer outstanding computer scientists who may recognize such mistakes the opportunity to move in new directions. The University could also expect to attract top-quality graduate students in this field. The Department of Computer Science already receives each year a number of inquiries from prospective students concerning a graduate program in computer science. At the same time, current graduate students who become interested in computer science are now obliged to change their options and those in the humanities and social sciences who are in the planning stages of graduate programs may be able to offer outstanding computer scientists who may choose to enter the field as graduate students. The University should establish a Department of Computer Science.
ment of the intellectual discipline required for creative research in the humanities and social sciences, which is by its nature solitary and individualistic. But the image of the solitary scholar is surely an oversimplified one, even in those fields where it seems most natural. Individual scholars define their own research interests and relationship to those of others; the questions they ask take on significance within a structure of arguments and assertions, problems and assumptions, that constitutes the present state of the disciplines they seek to advance. Students are more likely to understand this process, and to enter into it effectively, if they see it in action and participate in it directly with other students and faculty members in regular, continuing seminars or workshops, in which individual research ideas are elaborated and tested against critical consideration, and issues of common concern are defined and explored. We need to provide more effective institutional expression, in the humanities and social sciences Divisions, of a fundamental principle of this University expressed by President Levi: "we do not regard the learning process as having ended for anyone, and this is one of the reasons, regarding face faculty and students as involved in the same search for understanding, where the joint reformulation of questions is so important, [that] we have to emphasize a continuing dialog."2

Apart from these strictly academic considerations, there are additional reasons which make it appropriate and desirable in current circumstances to emphasize and institutionalize understanding of the collegial dimensions of scholarly research. Our claim is that the skills and abilities developed in the course of dissertation research and writing are by no means limited in their applicability to our scholarly enterprise. They are invaluable in any complex human endeavor which relies upon the capacity to define the essential question of an argument, engage the views and opinions of others, and to clear demonstration of their research promise. The Research Institute would then provide an institutional arrangement of this kind would strengthen the intellectual life of the two Divisions more generally, stimulating and directing renewed energies in a manner consistent with our strongest traditions and aspirations, and responding creatively to the intellectual and practical challenges these Divisions now face.

The University is renowned for its commitment to basic research and its institutional flexibility. Disciplines have not been simply cultivated here, but created; not simply accepted as given, but on occasion dismantled and transformed. The liveliness and creativity that the University has depended upon the maintenance of a longstanding tension between the urge to advance disciplinary claims as far and as rigorously as possible, and the contrary urge to subject these claims to critical scrutiny and transdisciplinary considerations. We have recognized that administratively separated disciplines in the humanities and social sciences are not intellectually separable, either in their objects or their methods. They share (and compete for) a common terrain; they draw on a common inventory of postulates and approaches that do not correspond to disciplinary divisions; they proceed by way of research strategies that constantly threaten to undermine departmental boundaries. For this reason, there has been a carefully fostered tradition of institutional flexibility at this University, expressed in part in the terms of joint appointment and the readiness to create interdisciplinary committees and centers responsive to the changing research interests and needs of the faculty. The strength and liveliness of the University, its reputation as a center of intellectual creativity, have depended upon a healthy disrespect for conventional boundaries.

Such intellectual and institutional flexibility has perhaps never been more important than it is now. There seems to be a growing sense among humanists and social scientists that the customary disciplinary boundaries and a reorientation of intellectual interests come to parable to that which created the principal disciplines as we know them scarcely a century ago. Such a situation offers a challenge which the University of Chicago, by temperament and tradition, should be particularly well suited to meet. But are we in the best possible condition to do so?

Many members of the Division of the Social Sciences appear to think that we are not. A recurrent theme in our committee's conversations with faculty members in the Social Sciences Division involved the sense that the interdisciplinary impulse within the Division was fainter than it had once been. It would seem from these discussions that one of the long-term effects of the expansionary era of the 1960s has been a strengthening of conventionally defined departments. Some have perceived disciplinary seminars organized by the Dean to address topics of fundamental interest for the social sciences as a whole, where collective explorations of common problems from differing disciplinary perspectives were more emphatically supported; while there was a greater sense of openness and challenge.

It must be emphasized that we found no unanimity in the Social Sciences Division regarding such developments. Some faculty members described a decline of interdisciplinary concerns with a sense of considerable loss; others denied that decline, or common intellectual life of the Division as a whole. Many faculty members look back to a time when the Social Sciences Division was smaller and departmental faculties were less scattered; when there were fewer disciplinary seminars organized by the Dean to address topics of fundamental interest for the social sciences as a whole; when collective explorations of common problems from differing disciplinary perspectives were more emphatically supported; while there was a greater sense of openness and challenge.

Social sciences, on the one hand, while realigning their component disciplines on the other. Clifford Geertz has described these developments as "a phenomenon greater and distinctively American than what we are seeing is not just another drawing of the cultural map—the drawing of a few disputed borders, the marking of some picturesque mountains in lakes—but an alteration of the principles of mapping."3 We may well be experiencing a sea change in the human sciences, a transformation of intellectual boundaries and a reorientation of intellectual interests come to parable to that which created the principal disciplines as we know them scarcely a century ago. Such a situation offers a challenge which the University of Chicago, by temperament and tradition, should be particularly well suited to meet. But are we in the best possible condition to do so? Many members of the Division of the Social Sciences appear to think that we are not. A recurrent theme in our committee's conversations with faculty members in the Social Sciences Division involved the sense that the interdisciplinary

3
As a Center of Intellectual Leadership
Finally, an effective and vigorous Research Institute would not only wish to support the most promising young scholars in the social sciences and humanities until they are able to find appropriate academic employment. It would serve as the appropriate home for the post-doctoral appointments desirable to support the most promising young scholars in the social sciences and humanities until they are able to find appropriate academic employment. It would serve as the appropriate intellectual center for the increasing number of Ph.D.s who will be seeking to maintain their scholarly research interests while pursuing occupations outside academic life. (The example of the Institute for Historical Research in New York offers a fascinating challenge to universities in this respect. Created to meet the needs of historians without academic employment who could find no intellectual home within the conventional university structure, it has developed into a very successful intellectual center. But this is a proper function for universities: they cannot guarantee academic employment, but they can undertake to remain responsive to the intellectual interests they stimulate.) A Research Institute would also serve as a vehicle for the exercise of the University's intellectual leadership, regionally, nationally, and internationally: by organizing conferences on topics of fundamental importance for research in a variety of fields (the seminars organized by the Center for Continuing Education for faculty of midwest colleges offer a fruitful model here); by developing summer or other seminars; by creating opportunities for university researchers and non-academic leaders to share perspectives on issues of government, industry, and the general public. These are only examples. The essential point is that a Research Institute structure should be developed in a way that would extend the University's intellectual influence in the humanities and social sciences and make its resources available more effectively to the larger academic and non-academic world.

B. Organization and Implementation
How might such a Research Institute structure be organized in the Humanities and Social Sciences Divisions? How might it be implemented? What should be its relationship to other institutional arrangements for organized seminars, workshops, or research projects appropriate to their intellectual interests and research goals? Students might be expected to participate in the regular work of one or more organized seminars, workshops, or research projects appropriate to their intellectual interests and research goals.

1. Students would be admitted to the Research Institute after the completion of six-quarters' full-time study (or their part-time equivalent), during which time, they would be expected to complete the required course work for the Ph.D. (reduced to eighteen courses from the current twenty-seven courses) and demonstrate capacity for advanced research. The admission to the Research Institute, which would be subject to the necessary reinforcement for such admission by the faculty of their department or program, would coincide with their formal admission to doctoral research.

2. Within the context of the Research Institute, students would pursue the research and writing leading to the completion of the Ph.D. dissertation under appropriate faculty supervision, as determined by their department or program. They would be expected to continue acquiring the specialized knowledge and skills necessary for the achievement of their scholarly goals. They would be expected to participate in the regular work of one or more organized seminars, workshops, or research projects appropriate to their intellectual interests and research goals.

3. Students would be expected to maintain formal membership in the Research Institute until they had completed their dissertation. Tuition arrangements would be those proposed earlier in this report (see Chapter 4, section 2).

4. All faculty members of the Humanities and Social Sciences Divisions would be members of the Research Institute, which would be an integral part of the University's intellectual endeavors already disregard that dichotomy, or suggest that it is being overcome in any new arrangement. It would be desirable to overcome it in any new arrangement.

5. Groups of faculty members would be invited to form standing seminars or workshops to investigate fundamental problems of mutual intellectual interest, and to provide an appropriate framework for the continued research training of advanced graduate students. While they would be encouraged to do so without limitation by departmental or Divisional boundaries, there would be no institutional exclusion or separation from them.

6. Faculty members would participate most responsibly in the seminars and workshops, and use them most effectively as teaching instruments, if they received adequate credit for this activity as part of their obligations to the University. They would be not only to devote themselves to this enterprise if it were simply to become an additional task or above and above their current responsibilities. Creation of a Research Institute structure would therefore require a reconsideration of existing course offerings, requirements, and teaching patterns. Departmental course requirements might need to be reduced and reshaped, if only to prepare students effectively, within the initial two years of graduate study, for admission to the Research Institute. Assuming the attractiveness of the Research Institute idea to a large enough body of the faculty members in the Humanities and Social Sciences Divisions, this reconsideration might encourage broader interest in identifying or creating courses that could assist in meeting the needs of those programs.

7. Since we envisage Research Institute membership as belonging to all regular, full-time faculty members in the Humanities and Social Sciences Divisions, we must ask how these arrangements for Research Institute structure would most appropriately have to be rearranged. There are several alternative possibilities in this respect: (i) A separate Research Institute might be created for each Division. In this case, each Research Institute would then represent a clearer institutional expression of the life of the relevant Division. The Dean of the Division could then be both the Director of the Research Institute and the Director of the Research Institute for the University, with an Executive Committee to advise him on general matters of policy. This would be the most straightforward way of implementing the Research Institute idea, but it has one important drawback. It would replicate in the structure of the two Institutes a dichotomy between the humanities and social sciences that seems now to be growing increasingly problematic, and that itself requires re-examination by scholars in a variety of disciplines. Many of our most interesting intellectual endeavors already disregard that dichotomy, or suggest that it is being overcome in any new arrangement. It would be desirable to overcome it in any new arrangement.

(ii) The immediate alternative to separate Research Institutes in the Humanities and Social Sciences would be
to create a single Research Institute in the Human Sciences embracing the entire range of intellectual interests in the Humanities and Social Sciences Divisions. In that case, it would presumably be necessary to appoint a Director of the Research Institute who would work closely with the two Divisional Deans. Such an arrangement would maximize the flexibility possible in the Research Institute, but it is open to the objection that it might create an organization that would be too large to be really effective.

A third, and perhaps potentially the best, option would be to have a single Research Institute in the Human Sciences divided into several sub-units—or possibly several separate Research Institutes—organized along lines of intellectual interest that would cut across the existing institutional demarcations between the two Divisions of Humanities and Social Sciences. We regard it as premature to offer any definite proposal for the intellectual remappings that this kind of organization would require, but we look forward to the challenge of debating its principles with our colleagues.

C. Some Objections Considered

In discussing the idea of creating a Research Institute structure in the Humanities and Social Sciences Divisions, the Commission has anticipated a number of considerations and objections. We believe it is important to consider some of these objections here as a means of clarifying our position and the possible outcomes.

One objection is that the proposed Research Institute structure might reduce the independence of individual faculty members, for the corporate responsibilities of departments and the organizational structure for the autonomy of individual faculty members. For the corporate responsibilities of departmental, and for the administrative clarity of the present Divisional arrangements, and to the degree to which its essential goals could be achieved by less dramatic changes.

Faculty Autonomy

One possible objection is that the proposed Research Institute would institutionalize a certain style of intellectual work which may not accord with the tastes and interests of many faculty members in the Humanities and Social Sciences Divisions; either because they may prefer to work in their own seminars, or individually with students, rather than in a common seminar or workshop; or because their research interests do not tend to themselves to collective exploration of common themes and problems in concert with other faculty members and their students.

Another possible objection is that we expect the joint workshops or seminars to be the defining feature of the Research Institute, we do not expect them to comprise the exclusive activity of its members. Individually taught research seminars would, of course, continue to be given: they would remain an essential dimension of the preparation for research of students in the two divisions; they would continue to be open to graduate students in continued pursuit of the knowledge and skills necessary for the achievement of their scholarly goals in the future. Similarly, the close personal interaction between individual faculty members and individual students engaged in dissertation research under their direction would, of course, continue to be an essential feature of our graduate education, to be complemented rather than supplanted by the more public interaction of the joint seminars and workshops.

Individual research activity in its turn—whether it be carried out by faculty or students—would, of course, remain the dominant mode of inquiry in many fields. The intention of this proposal is not to diminish the private, individual dimensions of intellectual work, but to enhance its public dimension in ways that would strengthen graduate education in the two divisions and make it more attractive to the best students, stimulate individual creativity, and foster intellectual advances through shared attention to fundamental problems of common interest. We doubt that there are many of our colleagues who do not share such problems with their fellows, or would shrink from the intellectual challenge of articulating and exploring them in common seminars and workshops. This kind of intellectual inquiry was envisaged as an important goal of the Research Institute structure at the University of Chicago when the Divisions were first created. It may, therefore, be appropriate to reiterate in a new context the claim then offered by President Hutchins: "Any program that attempts to coerce investigators into such research will fail. Any program that does not provide the fullest possible opportunities for such research is reactionary." 1

Economy of Innovation

There is also one respect in which a Research Institute structure might reduce tendencies towards administrative complexity in the Humanities and Social Sciences Divisions by offering a flexible framework for interdisciplinary problems and concerns. It is important to emphasize, from this point of view, that the most powerful institutional model for the seminars and workshops we envisage as the distinctive activity of a Research Institute in a departmental structure is one in which the Department of Economics and Social Sciences Divisions would express that commitment and supply the resources necessary for its administration.

The appeal to institutional economy must always be a powerful one, but in this case we do not regard it as convincing. First, there are forces of inertia at work in many departments that make it unlikely that the kind of seminars and workshops we regard as important could be set up separately on a departmental basis in the absence of the strong encouragement implied in a more general commitment to the idea at the University and Divisional level. The creation of a Research Institute structure in the Humanities and Social Sciences Divisions would express that commitment and supply the resources necessary for its administration.

A Research Institute structure would provide faculty and students the opportunity to come together to explore common intellectual interests for as long as that seemed necessary and desirable, without the costs involved in special Committee arrangements.

Economy of Innovation

Consideration of administrative costs suggests a final objection to the creation of a Research Institute structure: the proposal is that it would complicate the organizational structure of the Humanities and Social Sciences Divisions; and it is therefore unnecessary to create an additional administrative burden of the two Divisions. The answer to this objection would vary somewhat depending on the nature and scope of the alternative administrative arrangements considered in section B of this chapter were chosen. But the important consideration is that the Research Institute would represent an effort to solve the present conflict between the divisional life and purposes of the two Divisions—and to strengthen the achievement of their essential goals—rather than the imposition of an entirely separate structure upon them. If a separate Research Institute were established in each Division, either the Dean, or an Associate Dean might be able to supervise subordinate responsibility.
less significant. A supra-departmental and cross-Departmental form of organization would be necessary to support the development of these latter. Fourth, the Research Institute structure would provide a more clearly defined environment for graduate students throughout the two Divisions who had completed their coursework and were embarking on their dissertation research, in a way that would make advanced graduate work at the University of Chicago both more attractive and more stimulating. Fifth, the establishment of a Research Institute would not only effect the changes we propose, thereby strengthening the quality of graduate education at the University at a critical moment in its history. It would also give bold institutional expression to the conception of graduate work for which the University stands, symbolize its commitment to maintaining the essential tension between disciplinary and interdisciplinary work, and testify to the continued strength of its determination to continue a powerful tradition of intellectual leadership in the field of graduate education.

We urge faculty in the Humanities and Social Sciences Divisions to consider the arguments for the Research Institute structure proposed here, and to weigh its prospective benefits against other possible means of responding to the problems to which it is addressed. We have offered an effective focus for such discussion, and to translate it into appropriate action, we also recommend the creation of a committee charged to gather and examine faculty views regarding this proposal and to prepare more detailed recommendations for its implementation.

Chapter 7: CONCLUSION

In the course of the preceding discussion, we have offered a relatively large number of recommendations, some more wide-ranging in their implications than others. An index of these recommendations follows this conclusion, in which we present a brief recapitulation of the principal themes of our report. We have insisted in general upon the national importance of maintaining vigorous programs of graduate education at the highest level of creativity; and we have emphasized, in particular, the distinctive vision of that enterprise to which the University of Chicago stands committed. We have defended the training such a conception entails as appropriate to a number of ends—academic and non-academic—and we have offered recommendations aimed at strengthening our students' ability to define and pursue these ends effectively.

We have insisted, too, on the essential nature of the Ph.D. as a research degree. In doing so, we have argued particularly for the creation of a clearer and more supportive institutional environment than now exists in the Humanities and Social Sciences Divisions for the research phase of graduate work. Our recommendations in this respect are intended to shorten the time during which principal emphasis is placed on course work and coursework requirements (which now consume the greater part of the student's period of formal registration in these two Divisions); to encourage students to embark more directly and self-consciously upon the research phase of their work; and to permit them to remain in residence longer than is now normal the case, in order to benefit more fully from the institutional and intellectual resources of the University during their dissertation research and writing. We have also offered a proposal for a Research Institute structure in the Humanities and Social Sciences, designed to create a more attractive and challenging context for graduate study at this crucial advanced stage.

Thus our aim has been to conceive of graduate education at the University of Chicago as a whole, from matriculation to graduation. We have attempted to gauge the University's ability to recruit the most promising prospective applicants for graduate study and to offer recommendations for its improvement. But we have also argued the need for financial aid and other policies sensitive to the overall rhythm of graduate work, and appropriate to sustain the best efforts of our graduate students throughout a difficult and demanding career.

Finally, we have considered the University's traditional commitment to excellence in the pursuit of knowledge and understanding, and we have sought to identify some of the difficulties its faculty now faces in the pursuit of that goal. We do so in the conviction that this University must continue to regard itself as more than a loose assemblage of units engaged in a collective race for prestige with other universities. Its enduring greatness rests upon the distinctive wholesomeness of its vision of the tasks of an intellectual community, and on the common determination of each generation of its members to pursue that vision anew.

INDEX OF RECOMMENDATIONS

<table>
<thead>
<tr>
<th>Page</th>
<th>Recommendation</th>
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</thead>
<tbody>
<tr>
<td>3-100</td>
<td>That each department or committee initiate an evaluation of its graduate programs in response to the questions raised and the recommendations offered in this report.</td>
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<tr>
<td>3-100</td>
<td>That a regular review procedure be instituted, providing for the evaluation of each department or group of departments at least every ten years; this procedure to begin with an accelerated cycle of three to five years.</td>
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<tr>
<td>3-103</td>
<td>That an advisory committee on the use of graduate students in the College be asked to meet systematically with faculty bodies in the four Divisions in order to stimulate proposals for the creative use of graduate students in undergraduate education.</td>
</tr>
<tr>
<td>3-103</td>
<td>That other arrangements also be considered to provide opportunities for graduate students to gain experience in, or otherwise prepare for, teaching.</td>
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<td>3-105</td>
<td>That the role of the Career Counseling and Placement Office be expanded to provide fuller counseling and assistance to graduate students in relationship to non-academic work at the University.</td>
</tr>
<tr>
<td>3-106</td>
<td>That the faculty identify opportunities to create more general programs of graduate study linking particular fields and disciplines in ways that would offer a broad preparation for academic and non-academic careers alike.</td>
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<td>3-106</td>
<td>That individual students be allowed greater flexibility to cross the lines between the graduate Divisions and the professional schools.</td>
</tr>
<tr>
<td>3-107</td>
<td>That a committee be appointed, including appropriate Deans, to create the arrangements necessary to establish joint graduate/professional school programs.</td>
</tr>
<tr>
<td>3-107</td>
<td>That each department examine its requirements and offerings, with a view to avoiding premature specialization in introductory graduate work.</td>
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<td>3-108</td>
<td>That Deans assume greater responsibility for common curricular matters at the Divisional level.</td>
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<tr>
<td>3-108</td>
<td>That M.A. programs be clarified where necessary to represent demanding programs of study, completion of which should provide clear evidence regarding a student's potential for advanced research; and that they be complemented with a minimum of six quarters of full-time study (or its part-time equivalent).</td>
</tr>
<tr>
<td>3-108</td>
<td>That faculty seek to identify opportunities to create new M.A. programs that might provide a broad context for intellectual training appropriate for non-academic as well as academic careers.</td>
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<tr>
<td>3-108</td>
<td>That the current twenty-seven course requirement for the Ph.D. be replaced with an equivalent residency requirement of nine quarters.</td>
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<tr>
<td>3-108</td>
<td>That formal course work for the Ph.D. normally not extend beyond a period equivalent to six quarters at the University, yet provide the normal load of three courses per quarter. At the end of this period, students should be formally admitted to doctoral research on the basis of demonstrated achievement and clear promise of research ability. Unless explicit permission is granted to the contrary, students denied formal admission to doctoral research should be expected to terminate their graduate study at this point.</td>
</tr>
<tr>
<td>3-109</td>
<td>That a clearer context be created in the Humanities and Social Sciences Divisions for the dissertation writing and research that constitute the essence of Ph.D. training at the University of Chicago.</td>
</tr>
<tr>
<td>4-119</td>
<td>That there be a thorough review of recruitment policies at the level of the four Divisions.</td>
</tr>
<tr>
<td>4-121</td>
<td>That an up-to-date catalogue describing Hyde Park be published and included with every offer of admission to the University.</td>
</tr>
<tr>
<td>4-121</td>
<td>That there be energetic experimentation with campus visits for applicants admitted to graduate study; in departments where these do not now occur.</td>
</tr>
<tr>
<td>4-121</td>
<td>That the statistical function of the office of the Dean of Students be enlarged to include maintenance of records of indicators of the academic quality of applicants and matriculants for graduate study; and that a regular survey of applicants be conducted on a biennial basis.</td>
</tr>
<tr>
<td>4-126</td>
<td>That students who have satisfactorily completed six quarters in residence (or its part-time equivalent), and who have been formally admitted to doctoral research, be allowed to substitute a further six quarters of residency at half tuition for their remaining three quarters of residency at full tuition.</td>
</tr>
<tr>
<td>4-127</td>
<td>That students who have completed payment of full tuition for nine quarters in residence be permitted to continue formal residency until the Ph.D. is conferred by maintaining FTC (Full Time Certification) status at a reduced fee.</td>
</tr>
<tr>
<td>4-127</td>
<td>That students no longer in residence who remain active candidates for the degree be ex-</td>
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</tbody>
</table>
4-127
4-135
4-136
4-136
4-136
4-136
176
119x743
120x719
121x695
122x636
124x588
125x562
126x528
127x516
128x480
129x465
130x408
131x384
132x359
133x313
134x289
135x276
136x241
138x144
138x133
140x106
144x433
147x309
148x284
149x224
153x725
155x715
157x697
158x681
159x663
160x649
161x637
162x625
163x613
164x566
165x540
166x584
167x594
168x584
169x540
170x590
171x241
172x207
718x172
728x195
734x188
735x757
744x224
745x207
746x279
753x279
758x374
767x141
771x279
784x721
785x721
812x207
814x207
30-34
Table 4.

Trends in other relevant age groups (20-21, 25-29, 30-34) are in almost the same proportion. A recent article in the Chronicle of Higher Education noted this surprising increase, calling it an "Enrollment boom among older Americans." (4 May 1981).

When we look at the relationship between individual university enrollments and national figures, we must become even more pessimistic about the possibility of forecasts that will be useful for individual institutions. Many major universities have experienced enrollment decreases over the past decade (despite national and demographic increases). This lack of a strong (or even positive) relationship between these series, and the variation within individual institutions, among schools, divisions, and departments, belies the existence of a predictable general national pattern.

There remains the possibility that a university's own data can, by itself, provide sufficient information for useful predictions. We have pursued this question with data from our own institution, the University of Chicago, and find that they do not, at least without incorporating strong subjective judgments about the detailed persistence of social and economic trends, a persistence that does not seem warranted by the limited data available. When the enrollments are viewed alone, they behave very much like "random walk," a mathematical model that describes the behavior of stock prices and other economic series where future changes are unrelated to the past.

APPENDIX A
The Reliability of Enrollment Projections

The confidence with which demographic or econometric projections of enrollments are announced reflects the analyst's conviction that the model employed is theoretically correct and the input data reasonably accurate. These assumptions are often (perhaps usually) justified, but it does not follow that the resulting projections are sufficiently accurate to be useful. Indeed, this seems to be implicitly acknowledged by the forecasters themselves in that they make no attempt to specify precisely "error bounds" for the projections, relying instead on vague (and unverifiable) statements of anticipated accuracy. A true assessment of projection accuracy would seem to require a retrospective empirical evaluation of past forecasts. Such a study is made difficult by a variety of circumstances surrounding past projections, and the fact that most have tended to be "one-shot" affairs. Without replication, the assessment of accuracy is a vexed question.

One notable exception to this lack of replication of projections is the long-running series published by the National Center for Education Statistics (NCES). Since 1965, NCES has published annual volumes, Projections of Education Statistics to 1975-76, which in each case contain (among many other things) forecasts of the October enrollments at both public and private institutions of higher education. Because national aggregates for a large group of institutions are being forecast, we might expect greater accuracy (in percentage terms) in such predictions than could be realized if only graduate enrollment or only University of Chicago enrollments were being forecast. The NCES predictions of college enrollments have a demographic basis—essentially, they take, for each of the next ten years, the best available estimate of that year's population aged eighteen to twenty-four and multiply it by an estimate of the enrollment rate. (This latter estimate is based on the assumption that recent trends in the enrollment rate continue; see the NCES reports for details.) The predictions are updated each year.

5-166 That a committee be created to study whether the University should establish a Department of Computer Science.

5-174 That a committee be established to gather and examine faculty views regarding the proposal to create a Research Institute structure in the Humanities and Social Sciences, and to prepare more detailed recommendations for its implementation.

Tables 1 and 2 were compiled from several years' volumes of the NCES Projections. For each year they show, for both public and private institutions, the actual enrollments and the NCES predictions of that year's enrollment that had been made one year before, two years before, and three, four, five, six, eight, ten years before. For example, the actual October enrollment in public institutions in 1976 was (in thousands) 8,653. One year before 1976 it had been predicted this enrollment would be 9,298; three years before it had been predicted the 1976 enrollment would be 7,910; five years before the prediction had been 8,754; six years before it was 9,560; ten years before it was 7,390. These predictions for 1976 ranged from 7,390 to 9,560. This range is comparable to that for the public enrollment series itself for the seven years from 1970-76.

The prediction errors themselves are tabulated in Table 3. For purposes of comparison, the enrollments were also forecast by a naive method that did not disaggregate by type of institution or sex (as the NCES does), and that ignored census figures. This naive method simply predicted that the future would be like the past: in any given year it forecast that the change in enrollment over the next year would be the same as the change over the past year, that the change over the next five years would be the same as the change over the past five years, etc. What is remarkable is that the two methods give comparable results; in fact, the naive method does somewhat better. Where one might expect that forecasts made on a demographic basis would have a decisive edge, it instead appears that they operate at a slight disadvantage. Of course, there is no guarantee that the same will remain true in the future under different demographic conditions, but the comparison is not encouraging.

A similar table was constructed from NCES projections of graduate enrollments alone. However, the interpretation of these figures is complicated by a lack of uniformity in the series: apparently accurate enrollment counts before 1970 are not available (the figures given are estimated from surveys), and from 1972 on extension enrollments have been included in both actual and projected figures.

The lesson we draw from these tables is that such predictions can be very unstable, and that predictions made as far as ten years in the future tend to be far from accurate. Forecasts for private institutions have tended to be more accurate than those for public institutions, but only because the private enrollments have changed less. And even for the private institutions the eight- and ten-year-ahead predictions have missed the major patterns by a large margin (1976 was an exception here; in that year it was the short-term projections that were off by amounts comparable to several years' variation in the series.)

These projections do not do well because they fail to incorporate changes that are more influential than the factors they do include, that is, unexpected changes in economic and social conditions. One of the latter is the dramatic increase in the number of women and older Americans in higher education. For example, the following table illustrates the magnitude of the change in one age bracket.

<table>
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<tr>
<th>Year</th>
<th>Men</th>
<th>Women</th>
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<td>20.5</td>
<td>15.8</td>
</tr>
<tr>
<td>1978</td>
<td>20.5</td>
<td>19.1</td>
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</table>

3.6

### TABLE 1: NATIONAL CENTER OF EDUCATION STATISTICS PROJECTIONS FOR U.S. PUBLIC INSTITUTIONS OF HIGHER EDUCATION

<table>
<thead>
<tr>
<th>YEAR</th>
<th>ACTUAL</th>
<th>1 YR</th>
<th>2 YR</th>
<th>3 YR</th>
<th>4 YR</th>
<th>5 YR</th>
<th>6 YR</th>
<th>8 YR</th>
<th>10 YR</th>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1962</td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>1963</td>
<td>3,066</td>
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<td></td>
<td></td>
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<tr>
<td>1964</td>
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<tr>
<td>1965</td>
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<td></td>
<td></td>
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<td>1966</td>
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<td>4,775</td>
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<td>5,463</td>
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<td>5,623</td>
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<td>5,708</td>
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<td>6,988</td>
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<td>6,270</td>
<td>5,951</td>
<td>5,797</td>
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<tr>
<td>1971</td>
<td>6,071</td>
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<td>7,001</td>
<td>6,668</td>
<td>6,319</td>
<td>6,134</td>
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<td>1972</td>
<td>6,720</td>
<td>7,235</td>
<td>7,503</td>
<td>8,012</td>
<td>7,450</td>
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<td>6,699</td>
<td>6,337</td>
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<tr>
<td>1973</td>
<td>7,988</td>
<td>8,359</td>
<td>7,707</td>
<td>7,615</td>
<td>8,353</td>
<td>7,881</td>
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* a. The first column after the year gives the actual October enrollment (in thousands): "projections" of that year's enrollment made one to ten years before are given to the right.
* b. In 1971 Edition the 1969 Actual Public was reported as 5,907, this figure then appeared in subsequent volumes.
* d. Represents intermediate projections; also published were high and low projections.

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*Projection errors in NCES forecasts of U.S. higher education enrollment, computed as observed minus projected. Average errors (without regard to sign) are also shown. Figures in parentheses are corresponding errors made by the naive method which does not disaggregate and predicts that future changes will be identical to past changes over the most recent period of the same length.*