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ABSTRACT

This paper sets forth an explicit framework--comparing the "costs" of meeting the language requirement with the "benefits" produced by it--within which university facilities can evaluate their position toward this requirement and other requirements and activities. The study draws upon an extensive survey of the University of Wisconsin faculty members who were asked about the extent of their foreign language knowledge, its acquisition, and their actual use of it. Principal sections discuss: (1) a brief history of the language requirement; (2) procedures employed in this study in the evaluation of the requirement; (3) results of the survey; (4) an analysis of the "costs" and "benefits" of the requirement; and (5) conclusions, recommendations, and suggested research agenda. (RL)

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The Foreign Language Imbroglia in Graduate Education

by

W. Lee Hansen and Robert H. Graham

Workshop on Human Resources

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ERRATA SHEET

- Page 1. Add to note of acknowledgement (*) the following: "and to Felicity Skidmore for her editorial assistance."
- Page 10, paragraph 2, last sentence. " ... in at least one foreign language."
- Page 11, paragraph 1, sentence 1: "fall of 1966" (lower case).
sentence 2: Delete "weighted." " ... this reflected percentage response rates of 57 in the biological sciences, 42 in the physical sciences, 71 in the social sciences, and 36 in the humanities."
- Page 19a. "Percent Total" and "Number of Respondents" figures should be moved to right so as to fall under figures which are underlined.
- Page 22, paragraph 1, last sentence. " ... -- it would be more difficult to predict what the outcomes might be."
- Page 23. Underline "other than" in line 3.
- Page 31, footnote 34. " ... given in Table 5."
- Page 42, paragraph 2, sentence 1. " ... like primitive peoples and ..."
- Page 42, footnote 50. "(April, 1959), p. 122."
- Page 43, paragraph 1, sentence 1. " ... themselves reappraise ..."

The Foreign Language Imbroglia in Graduate Education

W. Lee Hansen and Robert H. Graham*

I. Introduction

The student unrest which has captured innumerable headlines in recent months is usually accompanied by manifestos, condemning the structure and functions of the contemporary university, and demanding changes in priorities to accord with particular moral and ideological positions. Another kind of student unrest, overshadowed by the more spectacular current protests, is reflected in the perennial criticism of university curricula. This criticism, which appears to be growing more vocal and articulate, is seen in demands (or pleas) to do away with arbitrary rules and procedures and all kinds of pretense and "unreality" in students' educational programs.

The graduate schools have long been accustomed to criticism, as much from within as from "outside." The recently-published Jencks and Reisman volume,¹ the Cartter report,² and the Berelson study³ all reflect in their

* Professor of Economics and of Educational Policy Studies, and Graduate Student in Educational Policy Studies, respectively. We are indebted to a number of our colleagues and to members of the Workshop on the Economics of Human Resources for their helpful comments and criticisms. In particular, we wish to mention Merle Borrowman and Burton A. Weisbrod. And, finally, our thanks go to Donna Beutel, Beverly Meek, and Sharon Schlough for their assistance in the survey and the typing of successive drafts of the paper.

¹ Christopher Jencks and David Reisman, The Academic Revolution (New York: Doubleday, 1968), especially Chapter 12, "Reforming the Graduate Schools."

² Allan M. Cartter, An Assessment of the Quality of Graduate Education (Washington, D. C.: American Council on Education, 1966).

³ Bernard Berelson, Graduate Education in the United States (New York: McGraw-Hill, 1960).

own individual ways a heightened concern about the development of the scholarly and intellectual resources of the nation, and about the rôle of universities in facilitating this development. In addition, both within and outside of the universities there is an increasing belief that the universities must help directly to resolve many of our society's long-standing social and economic problems.

The graduate schools, then, are faced with increasing pressure to make changes.⁴ The question as yet unanswered is whether they can succeed in the Herculean task of coping with these mounting pressures, without sacrificing quality. A variety of adjustments have been made, but ultimately graduate faculties will be forced to reconsider their traditional goals and the means by which these goals have been pursued.

Among the many issues crying out for re-evaluation is the old and highly controversial Ph. D. foreign language requirement. This requirement -- traditionally a reading knowledge of two foreign languages -- is a paradigm of a requirement which has not been subjected to rational investigation. It has usually been justified on "professional" and "cultural" grounds -- and attacked on much the same bases. It has, in fact, received increasing assaults over the past two or three decades. Rapid changes in the pattern of knowledge production raise new questions regarding the professional justification; and shifts in attitudes toward the meaning of the Ph. D. raise new questions regarding the cultural justification.

This paper sets forth an explicit framework -- comparing the "costs" of meeting the requirement with the "benefits" produced by it -- within which

⁴The challenges confronting the graduate schools are heightened and complicated by the tidal wave of undergraduates now entering them and by the exponential growth in knowledge production.

university faculties can evaluate their foreign language requirement, and, for that matter, other requirements and activities as well. The study draws upon an extensive survey of University of Wisconsin faculty members who were asked about the extent of their foreign language knowledge, its acquisition, and their use of it. From these data it is possible to compare the benefits, as reflected in professional uses, with the costs, as reflected by the longer time required to obtain a degree, that result from the non-discriminating nature of the traditional foreign language requirement. Based on this analysis, the results of which would apply to most other major universities as well, we offer a number of conclusions and recommendations about the requirement.

Part II reviews some of the history of the requirement; Part III sketches our general approach; Part IV introduces the survey results; Part V presents the analysis of costs and benefits; and Part VI offers our conclusions, recommendations, and suggested research agenda. Part VII is a brief concluding section.

II. Background

Most American universities have traditionally required a doctoral candidate to provide evidence of a reading knowledge of two foreign languages, usually French and German. Latin and Greek, the universal languages of the educated man for centuries, had given way to the modern languages in America during the second half of the 19th Century. In this period American scholars were traveling to Europe for their graduate education,⁵ and

⁵ A substantial number traveled to England, France, and other European countries, the most popular being Germany. Jurgen Herbst estimates that about 9,000 Americans studied in German universities between 1820-1920.

returning to make up the faculties of America's developing graduate institutions. It was evident to them that their students must know German and French if they were to have access to the fruits of the European centers of learning, and if their institutions were to gain international acceptance and recognition. So it came about that U. S. graduate students were required to master German and French, and a new tradition was born in academia. The immediate benefits of this requirement were great, since a free and close exchange of new ideas and research findings ensued and laid the basis for the rapid development of American scholarship soon to come.

While for a number of decades a working knowledge of French and German could continue to be justified on the same basis as was the origin of the requirement itself, a growing dissatisfaction with the foreign language requirement began to develop after World War I. And with accelerating changes in the realms of scholarship and politics during the post World War II period, doubts about the requirement have grown more sharply than ever before.

What has been the nature of the changes implicit in the arguments of those seeking reform of the traditional requirement? (1) Since World War I, France has suffered a comparative decline as a producer of new scientific and literary work. (2) The German scientific establishment has continued to lead the world in several fields, but the Russians and the Japanese have made increasingly substantial contributions to scholarly literature. (3) A tardy but growing awareness of the importance of Latin America has increased the utility of and demand for Spanish and Portuguese linguistic skills.

(Footnote cont.) Jurgen Herbst, The German Historical School in American Scholarship: A Study in the Transfer of Culture (Ithaca: Cornell University Press, 1965), p. 1.

(4) Possibly even more important, American scholarship has come into its own, and now sets the pace for the entire world in a great many academic disciplines -- including many entirely new fields of study. (5) The nation's new political involvements over the past decade or two have spurred interest in many languages formerly considered too esoteric or too insignificant to be worth studying. (6) And finally, translation services, often under the aegis of the federal government, are making large quantities of foreign literature readily available to the non-linguist.

Under the impact of these changes, the traditional requirement has been slowly giving way; often being modified to allow: (a) the substitution of other languages for German and French, (b) the establishment of two categories of language proficiency, and (c) the occasional substitution of other study for one of the languages. The types of requirements found most frequently are the following: two languages, whether specified or not; one language, whether specified or not; and one language plus additional study in another field. In each case, the level of proficiency may be stipulated as "high" or "thorough knowledge," or more frequently, "adequate" or "minimal competence."

Some indication of the wide variation in the Ph. D. foreign language requirements at major universities, and the way in which the requirements have changed over the 1957-67 decade, is shown in Table 1. The changes have usually been minor, although a number of graduate schools are in the process of altering their requirements -- if they have not already done so -- by either lowering them or providing additional options to students.⁶

⁶This statement is based upon correspondence with graduate deans at many of the institutions listed in table 1. It is further corroborated

TABLE 1

Ph. D. Foreign Language Requirements at 12 Major Universities
1957 and 1967

University	Number of Languages Required ^a							
	1957		1967					
	2,S	None ^b	2,S	2,U	1, ^c S	1+ ^d	1,U	None ^b
Berkeley	S		X		X			
Chicago		X						Divisional
Columbia		X						Departmental
Cornell	X							By Fields
Harvard		X						Divisional
Illinois	X		X					
Michigan	X		X					
Minnesota		X		X		X		
Princeton	X		X					
Stanford	X						X	
Wisconsin	X						X	
Yale	X		X					

^aUniversities are classified by their minimum requirements. "S": at least one language is specified. "U": selection of the languages is unspecified. Data for 1957 from Claude Viens and Philip Wadsworth, "Foreign Language Entrance and Degree Requirements for the M. A., M. S., and Ph. D. Degrees," Publications of the Modern Language Association of America, LXXII, (September, 1957), pp. 22-32. Data for 1967 from the respective graduate school announcements.

^bNo all-university requirement, but rather departmental or divisional requirements.

^cHigher level of proficiency; an "exceptionally thorough reading knowledge."

^dOne language plus non-language work.

Apparently no major university has yet seen fit to do away entirely with language requirements, nor does this appear to be a likely development in the near future. Instead the burden has been shifted, in some cases, from the university faculty as a whole to the divisions or departments.⁷ Harvard, Chicago, Columbia, and Cornell are among the universities which have eliminated university-wide language requirements and transferred the responsibility to smaller faculty units.

III. Evaluation of the Requirement

How is one to evaluate these various requirements? One may ask of a requirement, as he would of a law, what its purpose is and whether that purpose can be achieved effectively and equitably by means of the requirement. The traditional two-language requirement, originally established for professional purposes, has come to be regarded as culturally necessary. This development has greatly complicated discussions of the requirement. For example, the refusal of graduate school deans to agree on a single purpose has led to interminable quibbling over the types of language skills needed, the acceptability of some languages, the means of certifying competence, the standards to be maintained, and so on.⁸ The duality of purpose

(Footnote cont.) by Richard L. Admussen, "Trends in the Ph. D. Language Requirement," Modern Language Journal, LI (October, 1967), pp. 346-349.

⁷For example, the Harvard bulletin states, "The student must satisfy any language requirement laid down by his Division, Department, or Committee; see Language Requirements (p. 34). There is no general language requirement." (On page 34 we learn, however, that most, though not all, divisions, departments, and committees do require knowledge of two foreign languages for the Ph. D. degree).

⁸See committee reports, addresses, and discussions published in the Proceedings of the annual conferences of the Association of Graduate Schools, 1949 to date.

has thus made considerations of effectiveness and fairness confused if not impossible.

In order to assess these two aspects of the foreign language requirement, we propose to assume a unitary purpose -- the development of foreign language competence for use in scholarly endeavors. The choice of this objective is not arbitrary, but is based upon several considerations. For one thing, Bernard Berelson, in his study of American graduate education, found that among graduate faculty the professional justification was considered more important, though a sizable fraction of respondents gave equal weight to the two justifications (Table 2). Not unexpectedly, physical and biological scientists were less often enamored with the cultural justification than social scientists, people in the humanities, or graduate deans. But also of interest are the responses classified by type of university; the more prestigious the university the stronger is the weight given to professional over cultural objectives of the language requirement. Attitudes such as these presumably reflect not only the utility which language skills provide for the possessor but also what the Ph. D. signifies for him. Of course, to say that one justification "seems more important" than another does not entail acceptance of either.

But more significant than the leaning toward the professional over the cultural objective is the fact that we are only considering the purpose of the graduate foreign language requirement, not all of the wide variety of requirements in graduate education. If the cultural justification were accepted, one would have to scrutinize the entire graduate program, for surely there are other requirements which could be considered means to the end of producing cultured men; the question would then be one of deciding which of these means best serve the desired end. Moreover, this objective

TABLE 2

Percentage Responses of Graduate Deans and Faculty
Regarding Purpose of Graduate Foreign Language Requirement

<u>Type of Respondents</u>	<u>Professional</u>	<u>Cultural</u>	<u>Both Equally</u>	<u>Can't Say</u>
Graduate deans	31	14	51	4
Graduate faculty	43	17	35	5
Physical sciences	58	6	34	2
Biological sciences	50	6	42	2
Social sciences	37	24	31	8
Humanities	30	17	51	2
Top 12 universities	51	14	30	5
Other AGS universities, plus	43	16	37	4
Other universities	36	20	36	8

Note: The deans and graduate faculty were asked: "Two justifications are usually given for the foreign language requirement for the doctorate: (1) the cultural justification that foreign languages are needed as a mark of the educated man; and (2) the professional justification that the languages are needed as a tool for research in the discipline. Which justification seems more important to you?"

Source: Bernard Berelson, Graduate Education in the United States (New York: McGraw-Hill, 1960), pp. 196-197.

would have to be specified much more exactly such that (1) its desirability could be agreed upon, (2) the selection of requirements could be made, and (3) the results could somehow be measured so as to determine whether or not the requirement did in fact produce the desired outcome.

Whatever the connection is between being cultured and knowing foreign languages, we shall not attempt to elucidate it here. We agree with a past president of the Association of Graduate Schools, that "any serious educational program will indirectly contribute to a student's cultural growth -- however we define this elusive quality."⁹ Moreover we believe that the cultural argument is both wrong and inappropriate. It is wrong, as Berelson has claimed, "because meeting the requirement is typically not a matter of cultural growth at all;" and it is inappropriate because "the 'cultured man' should not be the primary object of graduate training."¹⁰

There is still another reason for limiting our analysis to the professional objective. Since the Ph. D. is generally viewed as a professional degree -- one that is designed to enhance the productivity of the recipient -- we want to know whether, and, if so, how effectively, this particular requirement contributes to that objective. While being cultured or more cultured may bring significant increases in personal satisfaction, we are inclined to view these increased satisfactions as adding to individual "consumption," with little or no effect on professional productivity.

⁹Moody Prior, "The Doctor of Philosophy Degree," in Everett Walters, ed., Graduate Education Today (Washington, D. C.: American Council on Education, 1965), p. 57.

¹⁰Berelson, op. cit., pp. 240-241.

What a Ph. D. program requires of all students must be directly related to its primary aim. We base our whole inquiry on the premise that graduate schools consider the primary aim of their Ph. D. programs to be the production of scholars capable of research. They therefore should be asking, "Which research tools must our doctoral candidates possess?" If language skills are likely to be an essential part of a student's and scholar's intellectual arsenal, he must possess them; if they are not, he should not be forced to acquire them belatedly in graduate school.¹¹

If language skills are viewed as a research tool, one can then ask "What utility or benefit does this tool provide?" The results of several studies show a wide range of answers. Elder asked recent Harvard Ph. D.'s about their use of languages: 31 percent of the natural scientists, 50 percent of the social scientists, and 29 percent of the humanists reported that they had used their first foreign language "rarely" or "not at all."¹² Berelson asked a national sample of recent Ph. D.'s whether they had used their foreign languages in preparing the dissertation or in subsequent professional work; the proportion of respondents answering "No" ranged from under 20 percent in chemistry and zoology to over 80 percent in economics,

¹¹We wish to make it clear that we are not opposed to language training for those who desire it, whether before, during, or after the Ph. D. program. Indeed, each of us has acquaintanceship with at least four foreign languages, only some of which was acquired during graduate school.

¹²J. P. Elder, as reported in his study of the Harvard Graduate School, A Criticism (Cambridge: Harvard University, 1958), pp. 38-39.

psychology, and education. Berelson concluded, "With such a range, it is no wonder that the matter is so frequently in debate within the faculty."¹³

In view of this great diversity in use of the languages required for the Ph. D., it seemed wise to obtain more specific information about the amount of language use and its acquisition by the full range of faculty members in an environment where great emphasis is placed upon research. Accordingly, we turn now to report on our survey results for the University of Wisconsin.

IV. Survey Results

Until recently, the University of Wisconsin required that all Ph. D. candidates demonstrate reading knowledge of two foreign languages (at least one being French, German, or Russian) either by accumulation of course credits or by successful completion of attainment examinations. This uniform requirement was dropped in mid-1966 and responsibility for determination of requirements was placed in each department, subject to approval by the Administrative Committee of the Graduate School. In implementing this requirement the Administrative Committee has, in fact, required that all Ph. D. candidates demonstrate at least minimal competency in at least one language.

The question as to the wisdom of even a one-language requirement remains. In an effort to explore this issue, a questionnaire was devised for all regular faculty members (i.e., faculty above the rank of instructor) to help indicate the value of foreign language proficiency as a research tool, while taking into account the time and effort required to develop such

¹³Berelson, op. cit., pp. 197-198.

proficiency. Nineteen of the approximately 100 departments were selected to participate.¹⁴ They were chosen in such a way as to provide a cross section of the university's major academic divisions and to include those departments which have large graduate programs.¹⁵ Language departments were purposely excluded since the very livelihood of their members depends upon a high level of proficiency in languages; most of the professional school departments were also excluded.

The survey was made in the late Fall of 1966, with the questionnaires distributed to individual faculty members through department chairmen. The overall weighted response rate, obtained after several reminders were sent out, was 52 percent; this reflected a response rate of 57 in the biological sciences, 42 in the physical sciences, 71 percent in the social sciences, and 36 percent in the humanities. Since we are not in a strong position to speculate on the possible biases in the survey results,¹⁶ we prefer to view the results presented below as reflecting simply the responses of representative faculty voters on this issue -- those who returned the

¹⁴ Although 22 departments were invited to participate, one refused and in two others (English and Botany) the response rates were so low that they were not included in the tabulations.

¹⁵ The 19 departments participating together awarded 47 percent (265 out of 562) of the Ph. D. degrees granted in 1966.

¹⁶ There is one known and possible downward bias in the results. Since faculty members away from campus on leave may, on average, possess greater foreign language competence than those in residence, the results are likely to understate the extent of language competence and use.

questionnaires.¹⁷ In tabulating the results the biological and physical sciences were combined, largely because the results were so similar. Hence, we present results for the physical sciences (biological and physical sciences), humanities, social sciences, and for the weighted total of the divisions.¹⁸

Four types of information from the survey are of interest and will be developed below. To provide a benchmark we must first establish the amount and level of language competence presently possessed. We then turn to "costs" of acquiring this competency, as indicated by the effort expended. Next, we examine the benefits provided by this competency, as reflected by the extent of use. Finally, we present information on the type of language skills that appear to be needed.

¹⁷It might be noted that the absolute number of questionnaires returned by members of the 19 departments (302) exceeded by over 40 percent the absolute number of all graduate faculty members (215) voting to change the previous two-language requirement at a meeting of the Graduate Faculty six months prior to the survey. And whereas the survey response was 52 percent, the percentage of the Graduate Faculty voting earlier was about 12 percent.

¹⁸Because the response rates for individual departments varied a good deal, the divisional figures are based upon departmental responses weighted by departmental size. Similarly, the university total is based upon the divisional responses weighted by divisional size.

The departments included in the study are grouped by division as follows: physical sciences -- biochemistry, chemistry, civil engineering, nuclear engineering, genetics, mathematics, physics, and zoology; social sciences -- agricultural economics, curriculum and instruction, economics, educational policy studies, political science, psychology, and sociology; and humanities -- art history, history, philosophy, and speech.

A. The Level and Extent of Language Proficiency

The reading proficiency of faculty members appears to be weak on the whole. For two-thirds of all the languages reported by faculty members, present levels of reading proficiency are rated at "fair" or "poor," as is revealed in Table 3, column 4. It should be noted, however, that the divisions show some differences in this regard (columns 1-3). While 40 percent of the languages reported by physical scientists and humanists (a term we shall use to refer to faculty in the humanities division for want of a brief substitute) are found in the top two categories of "excellent" or "good," only 22 percent of the languages reported by social scientists fall into these same categories (columns 1-3).

In passing, it is of interest to note that facility in speaking and writing in foreign languages is, not unexpectedly, found to be uncommon. Although the data are not reproduced here, approximately two-thirds of the languages are reported at a fluency level no better than "poor"; the humanists show up slightly better than the physical scientists and the latter show up somewhat better than social scientists. But it is apparent that few professors could undertake field research where fluency in the vernacular is important.

B. The Effort Expended to Acquire Language Competence

Several questions were designed to determine the effort expended, as measured in time, to reach the level of language ability attained by the respondents. Since the primary concern of this study is investigation of reading knowledge, we asked (1) what level of reading knowledge was required of the respondent for the Ph. D. language requirement, (2) how much time was invested as a graduate student in meeting this requirement, and (3) at what educational level(s) was each language studied.

TABLE 3
Percentage Distribution of Languages by Present Level
of Reading Proficiency^a

<u>Present Level of Reading Proficiency</u>	<u>University Divisions</u>			<u>All</u>
	<u>Physical</u>	<u>Social</u>	<u>Humanities</u>	<u>University Total</u>
	<u>Sciences</u>	<u>Sciences</u>		
	(1)	(2)	(3)	(4)
Excellent	10	8	17	10
Good	31	14	22	21
Fair	33	29	37	31
Poor	24	46	23	35
No Response	2	4	1	3
Percent Total	100	101	100	100
Number of Languages	252	354	96	696

^aThis table includes all languages reported, whether used to satisfy the Ph. D. requirement or not, and whenever learned.

The major results reveal that: (1) the level of knowledge required for the Ph. D. was generally "fair," (2) a majority of professors invested about 40 percent of one semester of full-time graduate study for each required language, and (3) of all languages reported, 43 percent were learned in high school or college, while 53 percent were learned in graduate school or since obtaining the doctorate. Let us consider each of these separately.

As is clear from Table 4, column 4, the level of knowledge most often required to meet the Ph. D. language requirement was in the respondent's opinion, "fair." To our surprise, for only two percent of the languages was an "excellent" level of knowledge required, while for 17 percent of the languages only a "poor" level of knowledge was sufficient to pass the language hurdle. The most interesting divisional variations (columns 1-3) are that 38 percent of the humanists recalled having stiff ("good" or "excellent") requirements, and 26 percent of the social scientists recalled "poor" requirements.

The "time costs" of gaining these varying amounts of knowledge are shown in Table 5. Faculty respondents were asked to estimate the total time, measured in semesters of 4-credit hour courses or their equivalents, invested as graduate students in fulfilling the Ph. D. requirement. A majority of languages (63 percent) were studied for at least one semester, while a quarter were studied for two or more semesters. At one extreme we note that the physical scientists in many instances, 44 percent, had had enough training prior to graduate school so that no further work was necessary at the graduate level. At the other extreme we find the humanists, 16 percent of whom had to invest at least three semesters of graduate study per language in order to fulfill the language requirement. On average,

TABLE 4

Percentage Distribution of Languages by Level of Knowledge
Required for the Ph. D. Degree

<u>Level of Knowledge Required</u>	<u>University Divisions</u>			<u>All University Total</u> (4)
	<u>Physical Sciences</u> (1)	<u>Social Sciences</u> (2)	<u>Humanities</u> (3)	
Excellent	1	1	6	2
Good	25	27	32	27
Fair	57	38	51	47
Poor	8	26	6	16
No Response	9	8	6	8
Percent Total	100	100	100	100
Number of Languages ^a	196	263	72	531

^aThe number of languages reported here is less than shown in Table 3, since not all languages were used to satisfy the language requirement.

TABLE 5

Percentage Distribution of Required Languages by Semesters
of Graduate Study Invested in Them

<u>Semesters of Course Work (Or Equivalent Study)</u>	<u>University Divisions</u>			<u>All University Total</u> (4)
	<u>Physical Sciences</u> (1)	<u>Social Sciences</u> (2)	<u>Humanities</u> (3)	
0	44	28	25	35
1	37	41	34	38
2	13	23	23	18
3	2	5	8	4
4 or More	2	2	8	3
No Response	2	2	3	3
Percent Total	100	101	101	101
Number of Languages	196	175	72	443

^aThe number of languages is 443 instead of 531 (as in the previous table) since the questionnaires sent to Economics and Agricultural Economics did not ask for this information.

then, the one semester of study per language (defined as 4-credit hours) amounted to approximately 40 percent of a semester of full-time graduate study (defined as 9-credit hours). Or if we should want to consider 12-credit hours as a full-time load, the time invested amounts to one-third of a semester of full-time work.

Why did social scientists and humanists spend a much greater amount of time in graduate school studying languages in order to satisfy the foreign language requirement? Could it be that physical scientists have greater language aptitude than their colleagues in the other divisions? Or perhaps the languages studied by the physical scientists are easier, or their language requirements less rigorous, than those of the other faculty members? Or is this result a function of the educational level at which language study is undertaken? The last interpretation seems to be the most accurate.

Physical scientists have typically been advised to study French and German (or nowadays, Russian) as undergraduates so that, in addition to any more profound reasons, they will be able to meet the foreign language requirement with little difficulty. Indeed, French and German were cited much more frequently as the Ph. D. languages by physical scientists than by either social scientists or humanists.¹⁹ Moreover, the variations in

¹⁹A social scientist or humanist, on the other hand, may study one language as an undergraduate as part of his B. A. requirement, but may be well into graduate school before it becomes clear what other language(s) he will need to know for his Ph. D. The student of philosophy, for example, may not decide to specialize in the medieval or ancient period until he reaches graduate school; hence, as a graduate student he must embark upon a study of Latin and/or Greek, unless by chance he has done so earlier. In a number of departments the same tendency would be predicted.

language requirements among graduate school physical science departments appear to be considerably less than in the other divisions. Thus, the budding physical scientist can begin language study early, secure in the knowledge that this study will be appropriate for his career needs and acceptable to the graduate school of his choice.²⁰

In general, the doctoral candidate who determines his specialty early will also study the required languages earlier and therefore invest the least amount of his precious post-graduate time in the study of languages. Where choice of a specialty or sub-specialty is delayed -- as is more likely in the humanities and social sciences -- the probability is increased that the student will have to initiate new language study in graduate school.

Some insight into this issue is provided by the distribution of all languages by the educational level of respondents when learning the languages. Based on tabulations not presented here, three interesting facts emerge. First, for all respondents, most of the languages were studied neither in high school nor in college, but were learned during or since graduate school (53 percent), or known as a native tongue (3 percent).

²⁰Direct evidence is available for the field of chemistry. Professor Nock of the German Department at Illinois noticed that "...although chemistry students constitute the biggest single group every time the (graduate reading) examination is offered at Illinois, they do not flock in large numbers to the classes for Ph. D. candidates offered by the German Department. ...The explanation is simple: the American Chemical Society and others insist strongly on foreign language study (especially German) by the undergraduate majors in chemistry." Francis J. Nock, "Foreign Languages as a Graduate Study Requirement," Modern Language Journal, XLIII (March, 1959), pp. 129-133. And Professor Walton of the Chemistry Department at the University of Colorado remarked that, "The American Chemical Society requires German for certification of chemists at the bachelor's level and above." After emphasizing the importance of French and Russian for chemists, he said, "the situation in other physical sciences is similar." But this does not justify requiring languages for Ph. D.'s in all fields." Harold F. Walton in "Symposium," Colorado Quarterly, V (Spring, 1957), pp. 426-432.

Second, 41 percent of the languages were studied while in graduate school, 34 percent specifically for the Ph. D. language requirement and 7 percent for other reasons; however, physical scientists devoted the least effort to language study while in their Ph. D. program. Third, the fact that 12 percent of the languages were studied after receiving the Ph. D. shows that a significant number of professors have continued their study. Much of this effort has been expended in learning new languages, that is, languages never before studied. Interestingly enough, physical scientists have also led the way in post-Ph. D. language learning.

On the basis of the results presented here it seems clear that the "costs" of acquiring language competence differ markedly with academic discipline. Whereas physical scientists had to meet standards of competence only slightly below those of the humanists, they required the least time in graduate school to develop their language skills. Such a result appears to be attributable to better undergraduate preparation and to the more limited range of language offerings recommended to them. In addition, they have devoted more effort to language study since their Ph. D.

C. What Benefits are Yielded by Language Competence?

Assessment of the benefits provided by a reading competence of foreign languages is admittedly more difficult, but we finally settled on two measures. Faculty members were asked (1) how much they used their language skills, and (2) what effect language competence had on their professional careers.

The first measure is the more objective one, but it necessitated estimates which are difficult to make and resulted in data which are probably more instructive on a departmental than on a divisional basis. Nonetheless,

the broad results by divisions are still of interest. To determine the amount of language use, respondents were asked to estimate (1) the number of foreign language articles read, (2) the number of footnotes to foreign language literature found in their own published writings, (3) the percentage of references to foreign language literature found in the professional papers and books read, (4) the number of foreign language lectures or professional discussions attended, and (5) the number of articles written in a foreign language. (To allow for year-to-year variations, the questions asked for language use over the past three years.)

Not surprisingly, almost no one writes articles in foreign languages, and only a negligible number attend lectures or discussions presented in a foreign language. In view of the admitted lack of fluency noted earlier, these results are not unexpected.²¹

Reading skills are used to a much greater extent. Table 6 summarizes the amount of foreign language reading done overall (column 4) and in each of the three divisions (columns 1-3). Clearly the benefits provided by language use are not equally distributed among divisions. Social scientists do, on average, no foreign language reading, while physical scientists do a substantial amount; those in the humanities engage in far less foreign

²¹Only about ten professors wrote any articles in a foreign language; these were mainly in the history, art history, and mathematics departments. While some of the most fluent professors in each division do attend lectures given in a foreign language, the median number of lectures attended is only one in the physical sciences, zero in the social sciences, and one in the humanities. These figures mask the aural use of language by a few individuals however. The median number of foreign language lectures attended over the past three years by professors having good or excellent fluency is noteworthy in some departments: genetics (25), political science (20), art history (12), zoology (5), mathematics (3), and agricultural economics (2).

TABLE 6
Average Language Use Over Past Three Years

<u>Language Use</u>	<u>University Divisions</u>			<u>All University Total</u> (4)
	<u>Physical Sciences</u> (1)	<u>Social Sciences</u> (2)	<u>Humanities</u> (3)	
Articles Read	16	0	4	3
Footnote References Cited in Own Papers	8	0	9	0
Percent of References Found in Literature Read	8	2	8	5

language reading than one might have expected. And while footnote references to foreign literature drop off sharply for physical scientists, compared with the number of articles read, they rise sharply for humanists; however, they remain at zero for social scientists. Actually, it might be argued that the percentages of footnote references to foreign language articles found in the literature ordinarily read may be of greater relevance in assessing the potential benefits of foreign language skills. But this does not really change matters, for we see that the median percentages of all references are 8 percent in both the sciences and humanities, and only 2 percent among social sciences. These results make it somewhat easier to understand the social scientists' lack of enthusiasm for foreign languages and foreign language requirements, since it appears either that little foreign language research is going on or that what is going on is not being footnoted in the journals.

We turn now to the second and more subjective body of evidence, the relationship between language benefits or use and the respondent's own evaluation of the impact of language knowledge upon his professional development. Table 7 attempts to summarize this information, classifying respondents by the extent of use and by the effect it had on their careers.

To highlight the results, we compare the amount of reading done by two different groups: those who feel that their language skills have had a moderately or seriously positive effect on their careers, and those who believe that little or no effect resulted from their language competence (or lack thereof).²² Those in the former group, though few in number (less

²²No effort was made to specify in the questionnaire what was meant by the various possible effects -- "positive," "negative," "no effect," and so on.

TABLE 7

Language Use Over Past Three Years by Effect of Language Competence
On Professional Development

<u>Effect on Professional Development and Language Use</u> ^a	<u>University Divisions</u>			<u>All University Total</u> ^b
	<u>Physical Sciences</u> (1)	<u>Social Sciences</u> (2)	<u>Humanities</u> (3)	
POSITIVE				
Articles Read	30	75	50	48
Footnote References Cited in Own Papers	17	40	50	25
Percent of References Found in Literature Read	10	10	22	11
Percent of Respondents	<u>39</u>	<u>20</u>	<u>45</u>	<u>32</u>
NO EFFECT				
Articles Read	10	0	0	1
Footnote References Cited in Own Papers	5	0	0	0
Percent of References Found in Literature Read	5	1	2	2
Percent of Respondents	<u>57</u>	<u>72</u>	<u>53</u>	<u>62</u>
NEGATIVE ^c				
Percent of Respondents	<u>2</u>	<u>6</u>	<u>0</u>	<u>3</u>
NO RESPONSE ^c				
Percent of Respondents	<u>2</u>	<u>3</u>	<u>3</u>	<u>3</u>
Percent Total	100	100	101	100
Number of Respondents	106	155	41	302

^aIn order to simplify this table, all "slight effect" cases are included in the "no effect" class here.

^bThis is a median for the values by departments rather than by individuals.

^cNo breakdowns by language use are given because of the small numbers involved.

than a third of all respondents), do the lion's share of the reading of foreign language material. These respondents read about 16 articles per year, they annually publish material containing about 8 footnotes to foreign language literature, and they find that about 11 percent of the references they come across in their reading is to foreign language literature. Almost two-thirds of the professors (62 percent), however, claim that their language competence has had little or no effect on their professional development, and these persons make little if any use of whatever reading proficiency they possess. Indeed, they read, on average, only one article in three years. Their published work makes no reference to foreign language material, perhaps because they find that only 2 percent of the references they notice in their reading are to foreign language literature.

Only three percent of the respondents reported that their language competence, or lack thereof, had restricted their professional development. Since the number was so small, the amount of language usage was not tabulated for this group; however, it was effectively zero. A few of these respondents explained that their language competence was so poor that they could not read foreign material and hence felt that their careers had been hindered by lack of competency. Others felt that the investment of any time in studying languages was wasted effort which could have been used for more productive purposes, and therefore their acquired language competence, whatever it was, had hindered their careers indirectly; many of these respondents also claimed that they would not find anything of value to read in their fields even if they were proficient in languages.

What is perhaps most significant is that the benefits of language competence do not appear to be spread evenly among the divisions. In the

humanities, 45 percent of the respondents say they have received positive benefit from their language skills, somewhat ahead of the physical scientists (30 percent) and considerably ahead of the social scientists (20 percent). Even more interesting is that within this group the humanists and social scientists appear to use their skills more intensively than do the physical scientists. But a majority of all these groups, and an especially large majority of social scientists, maintain that foreign languages have had no effect on their professional development.

We conclude, therefore, that the physical scientists are benefitting most from their language skills. And while their "language elite" may not read as much as the other divisions' "elites," the physical scientists who indicate the absence of any effect of languages on their professional development still read at a creditable rate, far more than the corresponding groups of social scientists and humanists.

D. What Language Skills Are Needed? An Assessment of the Language Requirement

What language requirement would the responding faculty members have preferred for themselves? Table 8 answers the question, given the benefit of some years of hindsight. While the all-university totals do not show a clear preference for any single requirements, the divisional totals do.

A distinct dichotomy exists between physical scientists and all other faculty members. When given a choice among four types of requirements -- two languages, one language at a higher level of proficiency, no language, and any other requirement -- 49 percent of the physical scientists would choose two languages, while only 12 percent would opt for none. But the other divisions would choose a no-language requirement over a two-language

TABLE 8

Percentage Distribution of Respondents by Type of Language Requirement Thought Desirable for Self

<u>Language Requirement Preferred</u>	<u>University Divisions</u>			<u>All University Total</u>
	<u>Physical Sciences</u> (1)	<u>Social Sciences</u> (2)	<u>Humanities</u> (3)	
2 Languages	49	15	25	28
1 Language	26	26	22	25
No Language	12	48	39	35
Other	11	10	14	11
No Response	2	1	--	1
Percent Total	100	100	100	100
Number of Respondents	106	155	41	302

requirement -- by a ratio of 3 to 1 (48 percent to 15 percent) in the social sciences and 8 to 5 (39 percent to 25 percent) in the humanities. The one-language requirement is favored by no division, receiving the support of only a quarter of all the respondents.

If faculty members are consistent in their views, preferring to impose on their graduate students the same sort of requirement they would have chosen for themselves, then a single across-the-board requirement appears to be quite unsatisfactory. While there is a slight university-wide plurality for a no-language requirement, physical scientists would retain the present two-language requirement, with social scientists strongly and humanists somewhat less strongly favoring a no-language standard. Of course, were the choices specified more narrowly -- as between two or one languages or between one and no languages -- it is more difficult to deduce what the outcomes might have been.

To determine to what extent professors now desire added competence in foreign languages, they were asked: "If you had greater language proficiency, how much more professional use would you be making of the knowledge you had?" The all-university totals are inconclusive, as shown by Table 9, column 4. Almost identical numbers replied that they would make "much more" (33 percent), "somewhat more" (31 percent) and "about the same" (32 percent) use of a new, higher level of language proficiency.

Again however we find important differences among the divisions. The largest group of physical scientists (41 percent) wrote that they would make "much more" use of greater language proficiency; the largest group of humanists (39 percent) answered "somewhat more"; and the largest group of social scientists (44 percent) would make "about the same" (generally, that is, "no") use of greater language proficiency. It should be mentioned,

TABLE 9

Percentage Distribution of Respondents by Predicted Use
of Additional Reading Proficiency

<u>Use of Additional Reading Proficiency</u>	<u>University Divisions</u>			<u>All University Total</u>
	<u>Physical Sciences</u> (1)	<u>Social Sciences</u> (2)	<u>Humanities</u> (3)	
Much More	41	21	36	33
Somewhat More	31	29	39	31
About the Same	22	44	25	32
No Response	6	5	--	5
Percent Total	100	99	100	101
Number of Respondents	106	155	41	302

however, that 60 percent of the respondents found in the "much more" category want this additional proficiency in order to read in languages other than those studied for the Ph. D. language requirement.

But when it actually comes to doing something about their need for greater reading proficiency, only a few professors indicate that they are taking steps to improve themselves -- so few, that the results were not worth tabulating. Most seem to agree with the respondent who cited "time limitations and small pay-off" as his excuse. Illustrative of the reasons given are the following:

"I work for a living." "Have been pursuing independent study as much as time allows." "I have learned Russian, but until arriving at this university I have scarcely been at a place where such courses are available."

"Actual experience has been the opposite, i.e., I have forgotten much French and German thru disuse." "Everything of major importance is now translated into English."

"The acquisition of other knowledge has taken precedence." "Too damn busy doing more important things."

"Too busy, too old and tired!" "When does one find time to even keep up with his job?"

In short, the overwhelming majority of the faculty -- and the differences among divisions were negligible -- appears unwilling to incur the costs of improving their language skills. As one philosopher summed up the problem, "Man is mortal; life is short, and there have been more crucially important things to do."

E. Conclusions

What kind of interpretations can be placed upon these results? One might interpret them as follows: those who have language competence are using it, and those who do not have any are not, and therefore if all graduate

students are forced to master foreign languages they will use them. But this conclusion is not obvious, and, indeed, seems incorrect. Potential and actual language use would appear to determine competence rather than the converse, since language skills have a very short "half-life;" if not used, they quickly atrophy. Thus, a large number of professors who reported "fair" or "good" reading proficiency as graduate students, for example, indicated that their present reading proficiency is "poor" or "nil." On the other hand, a number of professors have exercised this skill and report excellent reading proficiency today (in 10 percent of all languages reported) as compared with less than two percent during graduate study.²³ The critical factor is, it would seem, need for language skill, not necessarily the degree of competence originally possessed.

This conclusion seems borne out when we note the differences between the expressed need for more reading competence and action to remedy deficiencies in language skills. Indeed, so few reported any current efforts to improve their skills that we did not even bother to tabulate the responses. Interestingly, it was not clear that the physical scientists -- who most frequently expressed the need for more foreign language competence -- were doing much more than their colleagues in other divisions to improve their skills.

²³ While the data in Tables 3 and 4 are not strictly comparable, it is clear that there has been a shift in reading proficiency over the years toward the extremes. It has improved in some cases to the "excellent" level, due to either increased use of a language learned previously or intensive study of a new one, but dwindled away to "poor" in many cases, owing to disuse. About 70 languages are today read excellently (20 of these being native tongues), and about 265 are read only poorly or not at all.

The evidence in favor of differential need rather than differential background and preparation as an explanation for the quite different patterns of language use is certainly not demonstrated conclusively by the results presented here. Yet there is a strong suggestion that differential need is the more powerful explanatory factor. Clearly, more work needs to be done to establish the extent of differential need as among divisions and within them, among various departments.²⁴

V. Financial Benefits and Costs of the Foreign Language Requirement

From the survey results just presented, the quantitative as well as the qualitative relationships between the benefits and costs of the Ph. D. language requirement are rather clear. But to bring them into even sharper focus, we now translate the measures of time spent in meeting the requirement and of the actual foreign language use that resulted into dollar measures of costs and benefits. The objective is to determine whether, when viewed in these terms, the "investment" that graduate students are required to make yield an adequate financial payoff to them. In light of the available data, all calculations are made using 1965 income and cost figures.

A. Financial Costs and Benefits

What do we mean by the "costs" and "benefits" of the graduate foreign language requirement? Graduate education is not a free good; students pay a considerable price for their education in hopes of capturing a substantial

²⁴For one small effort in this direction, see W. Lee Hansen, "Report on Foreign Language Survey" (Department of Economics, University of Wisconsin), September 26, 1966 (ditto).

return that will be reflected in their standard of living and in the job satisfactions they derive. In addition, society encourages graduate education by providing large subsidies, on the assumption that the community, state, and nation will also benefit materially from the knowledge and skills embodied in Ph. D.'s.

But what part of the costs and benefits of graduate education can be attributed to the graduate foreign language requirement? On the cost side there is the time invested in foreign language study and the related expenses (tuition, books, etc.) which this study entails. While the time and expenses may not constitute any large fraction of the respective totals, neither are they insignificant; moreover, failure to incur these costs or to satisfy the requirement precludes receiving a Ph. D.²⁵ In addition, there is the use of university resources not paid for by graduate students through tuition payments. On the benefit side, is the amount of professional use made of the language skill developed, as might be reflected by the number of scholarly books and articles read; and the extent of use of speaking and writing skills. Hopefully, these skills will, aside from leading to richer and more probing scholarship, enhance the salaries of scholars skilled in languages.

²⁵The importance of the foreign language requirement hurdle is indicated by 1965 survey data on full-time graduate students which show that the foreign language requirement ranked third among the obstacles (after "financial problems" and "personal responsibilities," but well above "research and preparation of thesis" and "preliminary examinations") to the more rapid completion of the Ph. D. degree. See J. Scott Hunter, The Academic and Financial Status of Graduate Students, Spring 1965 (Washington, D. C.: National Center for Educational Statistics, Office of Education, 1967), p. 42.

While the various gains and losses associated with the requirement provide some insight into the cost-benefit relationship, the lack of commensurability among the various components makes it impossible to fully exploit the cost-benefit framework. One way out of this impasse is to convert the data wherever possible to a common unit, namely, dollars; this has the additional advantage of putting the cost-benefit relationship into more understandable terms, and to permit more precise comparisons. Hence, we turn now to the estimates.

The costs are estimated as follows. First, we measure the "opportunity" cost or dollar value of students' time, that is, the value of other activities they must give up to surmount the language hurdle; these other activities, which might include additional fields of study, are more easily measured in terms of the income received through earlier entry into the labor force. Given the average amount of time invested and the fact that two languages were the norm for the sample group, this means that on average about two-thirds to eight-ninths of a full semester was devoted to satisfying the requirement.²⁶ On the assumption that students could otherwise begin their professional career earlier, they might, based on 1965 data, earn anywhere between \$2,800 and \$3,700 during this time.²⁷ Offsetting this, some fellow-

²⁶The eight-ninths figure is based upon the assumption that four-credit hours of a full nine-hour credit load are devoted to the study of each foreign language; since graduate students often take a twelve credit-hour load, the allocation of two, four-credit hour courses of foreign language study yields the lower estimate of two-thirds.

²⁷For 1965-66 the average compensation scale "B" for assistant professors was \$8,440; see "The Economic Status of the Profession, 1965-66," AAUP Bulletin, LII (June, 1966); p. 151. This figure was then reduced to one-third and to four-ninths to reflect the fraction of the academic year spent in language study.

ship or other financial support might be lost; on the assumption that on average only about half of all graduate students receive such support, this offset at rates prevailing in 1965 would amount to between \$390 and \$520.²⁸ Second, there is the additional tuition, fees, and books that must be paid. The prorated amount of tuition and books would add from \$260 to \$350.²⁹ We can now total these individual costs; taken together, foregone income, minus financial aid, plus academic expenses, yields a total cost figure ranging between \$2,700 and \$3,500.

Besides these costs incurred by individuals are those incurred by society in the form of a subsidy resulting from charging below-cost graduate tuition and fees. A rough but probably not unreasonable prorated estimate of this cost ranges between \$750 and \$1,000 at major universities.³⁰ Since administrative costs connected with the language requirement are probably small, we shall simply ignore them.

The magnitude of these individual and university costs becomes much more apparent when we aggregate them. In 1966 the cost of the language requirement to the 562 Ph. D.'s can be estimated at between \$1.5 and \$2.0 million dollars. —The cost to the university, or to taxpayers, can be

²⁸Based on estimated median stipends (\$2,350) given by universities in 1965, adjusted for percentage (52 percent) of graduate students at universities receiving stipends, and then adjusted for time spent; for basic data, see Hunter, op. cit., pp. 25-29.

²⁹Based on estimated median for academic expenses at universities in 1965, and adjusted for time spent; for basic data, see Hunter, op. cit., p. 19.

³⁰Estimated by the authors, to include instructional and capital costs at major universities, less tuition and fees, in 1965, and then adjusted for time spent.

estimated at between \$425,000 and \$550,000. These resource costs together range between almost \$2.0 and \$2.5 million dollars per year!

We want next to find out how the requirement affects future income. If Ph. D. candidates did not have to "invest" in learning foreign languages, they would be ahead by the amount of the costs involved. Were they to have invested this amount, \$2,700 to \$3,500, at the prevailing market rate of interest of, say, five percent, they would have received an annual cash return of anywhere between \$135 and \$175. Thus, those people fulfilling the foreign language requirement should, in terms of the value of the resources used up in meeting the requirement, expect to earn between \$135 and \$175 more per year in annual salary than those who did not fulfill the requirement. Likewise, society should expect to profit by about another \$35 to \$50 per year, given its investment in the Ph. D.'s foreign language requirement.

Because there are no available salary data for the faculty sample, it is impossible to determine whether people with greater language competence are or are not receiving higher incomes to compensate them, belatedly, for their efforts. But we can gain some insight into the size of the benefits that would have to result, based in part on the survey data on average use of foreign language skills. Since faculty members read on average one foreign language article per year, we can infer that the value to each of them of reading this one article must be equal to between \$135 to \$175, so as to make their investment pay off. And its overall value -- to the individual as well as to society-at-large, must be equal to this plus an additional \$50-\$65 which reflects society's investment. It is hard to believe that on average the payoff is as large as this, though we have no direct salary evidence at hand to verify our suspicion.

But there is another, more indirect, test. If there were a substantial salary payoff to greater foreign language knowledge, then we would expect the level of faculty language competence to be greater than it is.³¹ Moreover, it seems reasonable to believe that knowledge of such a payoff would have seeped down to graduate students, thereby whetting their appetites for acquiring language competence. Whether society gains in some additional way -- as through better teaching or more significant research -- is even more difficult to assess; but even casual knowledge of the world of graduate faculties makes one skeptical that these returns could be very great.

We can view the benefit-cost relationship in still another way. Given that we cannot directly estimate the financial benefit from the reading of additional foreign language articles, we can ask what the scholar lacking in language competence might do to acquaint himself painlessly with non-English scholarship. As noted earlier, with the potential \$135-\$175 annual difference in income, he could hire translators, buy translation services, or even contribute to his scholarly association's efforts to keep members abreast of developments reported in the foreign language literature. Such amounts would represent a direct and sizable contribution to opening to American scholars the world of foreign scholarship.

Not taken into account in these calculations is the fact that the average amount of reading done reflects both pre-graduate and post-Ph. D. study. Were we to make a further allowance for the additional costs incurred

³¹We might also expect to see some larger fraction of faculty members scrambling to upgrade their language skills and pouring over foreign language periodicals in the libraries.

in pre-graduate study (the giving-up of other undergraduate courses, or the shortening of the time required for the undergraduate degree), the cost estimates we have presented are considerably understated.³² This understatement in individual costs would amount to at least a couple of thousand dollars, given that many respondents had already spent the equivalent of a full-time semester of their pre-graduate careers on foreign language study.

On an overall basis, then, it appears that the Ph. D. foreign language requirement gives rise to substantial costs with, on average, only negligible benefits resulting from it. These costs are incurred by individuals in the form of lost and reduced incomes. Concurrently additional costs are paid by society, in the form of a less efficient use of the resources devoted to graduate education -- leading to a reduction in the number of new Ph. D.'s who are becoming available each year to teach and carry on research.³³

There exist some interesting differences between costs and benefits to individuals by major university divisions that deserve comment. For example, while the average amount of time invested per language at the graduate level by physical scientists was about three-fourths that of all faculty members, social scientists spent about 7 percent and humanists about 35 percent more time than did the average faculty member.³⁴ The implied cost

³²Alternatively, the benefits indicated are overstated since they reflect some prior language knowledge.

³³Even this is not a full measure of the costs since some students undoubtedly drop out of Ph. D. programs because of the barrier created by the Ph. D. language requirement.

³⁴These percentages are estimated on the basis of a linear interpolation of the results given in Table 6.

to the individual ranges (based on two-thirds and eight-ninths of a semester used to satisfy the requirement) are \$2,100-\$2,800, \$3,000-\$4,000, and \$3,800-\$5,000, for physical scientists, social scientists, and humanists, respectively.³⁵ The annual income that these costs would generate if invested range, respectively, from \$105-\$140, \$150-\$200, and \$190-\$250, based upon average income data.³⁶

On the benefit side, physical scientists profited the most from their language competence, reading an average of about five articles per year, in contrast to zero articles for social scientists, and slightly over one article for humanists. For physical scientists the minimum implied value per article read is \$21-\$28. But even if we assume that this is a sufficient payoff for physical scientists, the reading benefits for those in the other two divisions would probably have to be rejected as too low to justify the cost; the value per article read for humanists comes out to between \$190 and \$250, while in the social sciences, if even one article per person were read -- which is not the case -- its implied value would have to be \$150-\$200! Although one still might be able to make a plausible argument -- based on a comparison of benefits and costs -- for the usefulness of language knowledge and the Ph. D. language requirement in the physical sciences, the evidence in its favor in the social sciences and humanities is weak, to say the least.

³⁵ We ignore any pre-graduate costs of foreign language competence.

³⁶ We ignore any possible salary differences among people in the different divisions.

From this analysis there seems to be no conclusion other than that very substantial outlays are required by individuals and society to meet a requirement whose professional and scholarly value is slight at best. Unless it can be shown that other types of benefits are exceptionally large, there are undoubtedly many other and more-productive ways to use these resources.

VI. Recommendations, Conclusions, and Needed Research

Having now completed the analysis of costs and benefits of the graduate foreign language requirement, we present our conclusions and recommendations. Since a number of important questions are still unresolved, we then indicate several prime areas for research. This is followed by a brief closing section.

A. Recommendations and Conclusions

1. There is no adequate justification for a fixed, university-wide foreign language requirement. Ideally, all graduate education would be tailor-made for each student so that he could follow his own interests to the maximum possible extent while at the same time developing his scholarly skills to their greatest potential. Thus, a criterion of any language requirement should surely be that it meets the needs of individual students, not that students meet the stipulations of an arbitrary, university-wide requirement. We therefore contend that separate divisional requirements would be an improvement over the widely-prevailing all-university requirement, and that individual departmental requirements would be still more appropriate. Even then, there should be intra-departmental flexibility, in light of the variation in backgrounds and career goals of students within

individual departments. This flexibility should make it acceptable for divisions or departments to establish requirements ranging from no language whatsoever to several, depending upon the field and upon particular student interests and needs.

2. The foreign language requirement should not be made more rigorous.

To interpret our results as supporting a crusade for stiffer Ph. D. foreign language requirements, as some will be wont to do, is to misunderstand them.³⁷ While the survey indicates that higher levels of competence and use are associated, it is not obvious that the line of causation runs from competence to use. It could just as well be the opposite, and, indeed, physical scientists had engaged in more language study subsequent to their degrees than had members of the other divisions, presumably because of the potential use that would result. Moreover, we note that while humanists and social scientists apparently faced more stringent Ph. D. language requirements, it is the physical scientists who have made most use of their foreign language skills, again, because of need. Thus, the necessity of a stiffer degree is not apparent. Also, it has sometimes been argued that if stiffer Ph. D. language requirements were imposed the high schools and colleges would be forced to upgrade their foreign language training, and that, as a long-run result, fewer students would enter graduate school with insufficient foreign language preparation. The crucial flaw in this argument is that unless a student knows by the time of high school or

³⁷ Harvard Dean J. P. Elder, for example, reasoned "Either we must improve or abolish (the requirement), and since the second course is unthinkable. . . the standards of proficiency should be sharply raised to make the requirement yet more worthwhile." Elder, op. cit., pp. 11, 20.

college what his eventual specialty will be, rigorous foreign language training at these levels, however commendable on other grounds, may be largely irrelevant to his particular career needs. This is especially true given the extent to which foreign scholarship differs in quantity and quality among various disciplines.

3. The languages approved for satisfying the requirement should neither be narrowly specified nor completely unspecified. The most rational procedure would call for the student and his major professor and/or committee to determine which language(s), if any, would be appropriate for his needs. In this way two evils would be avoided: (1) the student would not be forced to learn some particular language for no better reason than that some regulation says that he must, and (2) the student would not be able to offer a language having no relation to his career needs, for no better reason than that he happens to know it. Such an approach would no doubt remove German and French from their privileged positions, and in the process broaden rather than restrict the scholarly horizons of Ph. D. candidates. ³⁸

4. There should be no substitution of one arbitrary requirement for another. If a student is exempted from meeting any language requirement, no other artificial hurdle should be imposed to take the place of the one removed. The student and his committee should be free to construct the most rational doctoral program possible, without having to meet an excess of arbitrary requirements. If statistics, or nine hours of communications

³⁸ For some interesting evidence on this very point, see Henry Weitz, Robert Ballantyne, and Robert Colver, "Foreign-Language Fluency, The Ornament of a Scholar," Journal of Higher Education, XXXIV (November, 1963), p. 446.

theory, or computer science, or some other field of study has a rightful place in a student's program, it should be there on that account, not for the sake of meeting some paper requirement.³⁹

B. Suggested Research

1. How much significant scholarly work is being published in foreign languages? Although a very tedious task, a survey of the world's scholarly journals to see how much important work is being published in the various languages might be instructive. Is the proportion of important scholarly work in other languages increasing or decreasing? Or are the trends so obvious that no documentation is needed?⁴⁰ Is the significant foreign literature being discovered by American scholars, given their apparently deficient language skills? How long are the delays? Are these delays long enough to really impede the search for new knowledge?

³⁹ At one major university the traditional requirement may in some cases be satisfied by "reading knowledge of one foreign language and the option of a collateral field of knowledge or a research technique." Its bulletin devotes eight paragraphs to the "options," after describing the various and sundry ways in which the language part of the language requirement can be met. The former option entails 15 credits of work and the latter at least 9 credits, but "in no case may (either option) be one that has regularly or traditionally been included in the major or minor fields of study of similar candidates in the past." Hence it would appear that if the student invests considerable time in a subject not essential to his degree program, he shall have satisfied the graduate "language" requirement. See University of Minnesota, Bulletin, 1966-68, pp. 19-21.

⁴⁰ In a rejoinder to the Weitz, Ballantyne, and Colver study cited above, a MIT language professor argued that the "increasing importance of foreign literature, especially Russian, is too well known to need arguing." He produced figures to show that the percentage of English language articles represented in Chemical Abstracts declined gradually from 57 percent in 1947 to 41 percent in 1960, and contended that "for most of the fields which the authors studied, I should imagine the importance of foreign literature would be rising." (See William N. Locke, in Letters to the Editor, Journal of Higher Education, XXXV (June, 1964), pp. 342-343.

2. How effective are the existing translation services? We attempted to learn the answer to this by means of our questionnaire, but since so many contradictory responses on this question were received, we were forced to conclude that professors are not uniformly aware of the existence of such services.⁴¹ We should know a variety of things. For example, which fields are now served by translation services? How broadly and in what depth is each field covered? How accurately and how quickly is the material translated and made available? Are there economical ways of enlarging and improving these services? Can the efforts of the various professional societies be intensified?⁴²

3. How much is the task of learning a language lessened by virtue of having learned other languages? This is a question for those in educational psychology or the language fields. An illustration may help define the problem. Presumably, it is more difficult for an individual to learn his first foreign language than to learn his fifth or sixth. But is the marginal decrease in difficulty of learning each new language after the first the same? How is it related to the family groupings of languages? How is it related to the time lapse between study and use of the last language and the next one? How is it related to the method of instruction?

⁴¹ Respondents were asked to indicate the effectiveness of translation services, by language, in their field.

⁴² One example of a large and relatively new service is the United States Joint Publications Research Service. We do not know how satisfactory this service is, although its own advertising is fairly impressive: "The JPRS is a government organization which was established in March 1957 to service government agencies with translation of unclassified foreign documents, scholarly works, research reports" and other selected source materials not

Most graduate students are working on only their second or third foreign language. How much does the previous study of different languages aid them in learning whatever language they may be studying presently, and how much will their present efforts contribute to making it easier to learn other languages, say, 5, 10, or 20 years from now? That is; what is the "carry-over value" of language instruction, and how is it related to the age of the student, the number of languages studied, and so on?

Answers to these questions are crucial, for they have far-reaching implications for the Ph. D. language requirement. They bear directly on the number of languages that should be learned, how well they should be learned, and at what educational level they should be studied. The Modern Language Association of America summarizes the problem, but its answer seems a bit facile.

About 3,500 languages are spoken in the world today, and more than 140 of them have over a million speakers each... The trouble is that no one can predict today which of these many languages you will need to know ten or twenty years from now... Your present foreign-language course therefore serves a double purpose, teaching you the language you are now studying and also teaching you techniques of foreign-language study so that you can apply them to later study of other languages. ...if, in learning your first foreign language, you have also learned how to study languages in general, you will be able to apply this skill to the study of any other language at any time or place.⁴³

(Footnote cont.) available in English... The total annual production at present is around 250,000 pages." See Thomas E. Kyriak, ed., Bibliography-Index to U. S. JPRS Research Translations, V (July, 1966-June, 1967), Research and Microfilm Publications, Inc., Washington, D. C., "Introduction."

⁴³"Advice to the Language Learner," Modern Language Journal, L (May, 1966), pp. 260-263.

Even if we accept these claims on faith, it seems certain that cramming for a Ph. D. foreign language examination will not have such beneficial long-range results.

4. What means of proficiency-testing should the graduate schools use? The wide variety of testing procedures and standards employed by graduate schools over the years have been a source of chagrin to the deans and an irritant to language professors.⁴⁴ Should course credits, departmental examinations, standardized examinations, or some other criterion be used in certifying language proficiency? The current trend, of course, is to use standardized examinations.

The University of Wisconsin and many other schools now use the Educational Testing Services examinations in French, German, Russian, and Spanish. One might question how appropriate this practice is, even while admitting that administratively it is efficient and simple. Is the successful completion of an impersonal, machine-graded, multiple-choice examination a task which will strongly motivate students to learn and later use a foreign language?

⁴⁴See, for example, Gustave Fuchs, Standards and Practices in Administering the Modern Language Requirement for the Degree of Doctor of Philosophy, Ph. D. thesis, University of Nebraska, 1932; Sara E. Piel, "Qualifying Tests in Modern Languages for the Doctor's Degree," The German Quarterly, XXIV (March, 1951), pp. 109-113; David G. Speer, "For Standardized Graduate Language Requirements," Modern Language Journal, XLI (October, 1957), pp. 292-293; Claude P. Viens and Philip Wadsworth, op. cit., pp. 22-32; James W. Marchand, "Teaching, Testing, and the Ph. D. Language Requirement," Modern Language Journal, XLII (May, 1958), pp. 238-243.

~~Might it not have~~ adverse feed-back effects on the teaching of the language itself?⁴⁵

If language professors are, or have been, overburdened by having to give language examinations for which no teaching credit is granted -- as has been the case at Wisconsin -- could not some fee system be established which would take most of the sting out of the burden? Graduate Students might be no unhappier paying a fee to a professor on campus than to the ETS monolith.

Moreover, the cram courses now open to graduate students preparing for the language examinations will surely have to be adjusted so that the students will have a high probability of passing the standardized examinations. These adjustments are as likely to be detrimental as beneficial to the real interest of the students, and presumably the faculty as well -- the acquisition of useful language skills which will be helpful long after the examination is passed.⁴⁶

⁴⁵As several Duke University researchers have noted: "...Granted the use of uniform language examinations would have a certain administrative economy and neatness about it which should warm the cockles of any dean's heart and should certainly earn the gratitude of harried foreign-language-department members, it would tend to make more rigid a situation which, if the present study means anything, cries for greater flexibility." Weitz, et. al., op. cit., p. 449.

⁴⁶This problem is exacerbated by the publication of a spate of "study guides" of the "How to Pass High on the Graduate Record Examination in ..." genus, such as Graduate School Foreign Language Test-French, published by ARCO, New York.

5. Should students be required to use the languages in their graduate study and/or dissertation? A number of persons have argued that the foreign language requirement will never have its intended professional results until graduate students are required to use the languages they learn.⁴⁷ Some departments require that their students learn one language, and read and report on several articles of interest to them written in that language. Is this a useful approach? Does it effectively serve to introduce students to the foreign language literature in their fields? Or is it just adding to their burdens?

And should the requirement be met earlier in one's graduate career so that he will be able to use the skills to a greater extent in his course work? Is there sufficient foreign literature to warrant this? If the literature is in several different languages, how can students and instructors cope with this situation? What is the likelihood that these languages will be those the student may need in writing his dissertation and pursuing his later research interests?⁴⁸

⁴⁷ One graduate school dean placed the blame squarely on the faculty: "The important people to test are the members of the faculty. I am convinced that most of our frustration's in regard to these language-proficiency tests arise from the fact that the supervisors passed similar tests 20 or 50 years ago and have never made use of the language since; they do not require their students to study them, and the whole thing becomes a more or less useless academic exercise." (Dean Thomson in discussion following "Report of the Committee on Testing," Journal of Proceedings and Addresses of the Twelfth Annual Conference of the Association of Graduate Schools in the Association of American Universities, 1960, p. 36.

⁴⁸ See Robert H. Graham and W. Lee Hansen, "Footnotes and Foreign Language Requirements," (mimeo, 1968) for a report on the extent to which recent Wisconsin Ph. D.'s used their language skills in preparing their dissertations.

VII. A Final Consideration

We have assumed in this paper that the apparent reasons for the graduate foreign language requirement are the real ones. We rejected one of these reasons as not being relevant, and we analyzed the other as far as our evidence would allow. Yet we are aware that other, more elusive reasons may be adduced to justify such a requirement, on the grounds of maintaining standards, continuing a tradition, as a necessary ritual, and so on.⁴⁹ If such rather covert reasons are in fact operative, it is not a new tendency in education; in an interesting article entitled "Latin Language Study as a Renaissance Puberty Rite," it is asserted that:

Renaissance educators, like primitive people and like ourselves, have no rationalized explanation for everything they do. They do certain things because they feel these things should be done, finding reasons for them afterwards if at all -- and, if they are observant and honest, often being surprised at the reasons which turn up on close inspection.⁵⁰

We are not in any position to assess how much, say, the ritualistic aspect of the desire to maintain standards may have contributed to the foreign language imbroglio. Until it can in some way be decided how

⁴⁹See, for example, Moody Prior, op. cit., pp. 56-59. Bernard Berelson mentions the "ritualistic residue" of the requirement, and claims that it is maintained "through another paradox of doctoral study. In the whole battery of varied and ambiguous requirements across the graduate school, (this at least is) concrete, specific, and visible, so that 'maintaining standards' is often linked symbolically with the least productive of the graduate school's requirements." Berelson, op. cit., p. 140.

⁵⁰Walter J. Ong, S. J., "Latin Language Study as a Renaissance Puberty Rite," Studies in Philology, LVI (April, 1959), 103-124. We are indebted to Professor Sterling Fishman for bringing this article to our attention.

important such reasons may be and what weight they should receive in an overall accounting of the purposes of the foreign language requirement, it will be impossible to consider these reasons adequately. On the other hand, our analysis of the costs and benefits of language competence does make it clear what price must be paid to continue the requirement, or put differently, the implicit value which graduate faculties rightfully or wrongfully have placed on the achievement of these other, vaguer purposes.

Along with outside and graduate student critics, it is important that graduate faculties themselves reappraise more thoroughly many of their accepted practices, among them, the imposition of the Ph. D. foreign language requirement. Aside from having a general method for making such reappraisals and bringing quantitative evidence to bear on them, it is important that the justifying reasons for these practices be stated clearly so that truly comprehensive evaluations can be undertaken. We would hope that these reasons would be "forward-looking," in dealing with the implications of possible changes in practices rather than retrospective, as is so often the case. For to base one's reasons on the world as it was, with a view toward the past and perhaps a desire to preserve it, is to run the risk of ignoring the world as it is and of being unprepared for the future.