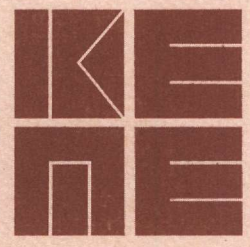
CENTRE OF PLANNING AND ECONOMIC RESEARCH

Studies 2

C. A. Karmas, A. G. Kostakis, Th. G. Dragonas

Occupational and Educational Demand of Lyceum Students: Development Over Time



Athens 1990

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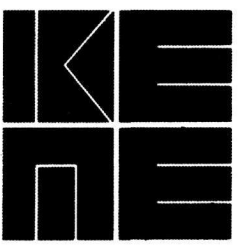
Constantine A. Karmas, Ph.D.
Research Officer, KEPE

Anastasia G. Kostakis, Ph.D.
Research Affiliate, KEPE
Teaching Associate University of Crete

Thalia G. Dragonas, Ph.D.
Research Affiliate, KEPE
Assistant Professor University of Ioannina



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A draft of this copy was referred to the "Studies Committee" of KEPE and three external referees; the text was revised by the author according to their comments and recommendations.

PREFACE

Meeting the manpower requirements of the economy, promoting knowledge, accomodating social demand for education are all objectives that must be addressed in the concerted effort to provide, on the one hand, for the efficient use of educational resources, and on the other, to develop a nation's human resources. Moreover, as Greece and its partners in the European Economic Community approach full economic integration, the quality of its human resources assumes an even greater importance.

Of the many problems that confront the Greek educational system today, perhaps none is more impelling the explosion of demand for higher education. To witness, only a small fraction of secondary school matriculants each year do not compete for entry to a higher education institution. As a result, in addition to the explosion of higher education enrollments at home, Greece ranks among the nations with the largest proportions of students studying abroad. A new equilibrium must be sought which responds both to the increasing demands of young people for further education and to the limited capacity and resources of the higher education system.

Despite the seriousness of this problem in Greece, there has been little systematic research on the topice. The present study takes a close look at the structure of occupational and educational demand among young people in Greece in an effort to substantiate the dimensions of the problem and to define the issues which are involved. Furthermore, this is the first study of its kind to make use of longitudianl data in examining the development of occupational and educational demand over time. Thus both in subject matter and analytical approach, this study will prove useful to those concerned with educational policy and planning.

Prof. MARIA I. CONSTANTOPOULOU
Scientific Director

Centre of Planning
and Economic Research
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ABSTRACT

Every year thousands of secondary school graduates set their hopes on entering higher education knowing that most candidates will be disappointed in their efforts. The dilemmas, both social and individual, represented by this situation provided the impetus for the present research.

This study examines educational and occupational demand among Greek youths within a longitudinal framework. Over a time period that spans from grade nine (termination of gymnasium) to grade twelve (final year of lyceum), the earlier occupational and educational aspirations of young people are compared to later aspirations in order to trace their development and to understand some of the factors involved.

This study has several goals, the most basic being to gather information on the occupational and educational demand and on the work values of Greek youth since few specifics are known, and even fewer have been scientifically substantiated. Secondly we attempt to understand and systematize this information by examining it within a longitudinal framework. And finally, this study explores certain institutional and individual factors that might be relevant to the development of occupational and educational demand over time.

CHAPTER ONE

INTRODUCTION

This research study will explore the occupational demand of youths who are approaching adulthood —a theme that broaches important issues of self and society. In particular, this study attempts to trace the development of occupational and educational demand among young people over a time period that spans from the final year of lower secondary schooling (year nine) to the final year of upper secondary schooling (year twelve).

These early occupational choices of young people can be viewed as an initial stage of a longer process of career development that takes place over the life course. Social science research is increasingly turning to dynamic themes and focusing on the successive states that individuals occupy as part of an interconnected life-long pattern. Following Härnqvist (1978) and others (Blau et al., 1956), this study views individual occupational demand as a compromise between preferences for and expectancies of an occupation that develops over time.

Stability and change in occupational demand over time are characteristics of this process of compromise which will form the framework of analysis. This study will examine the extent to which earlier occupational aspirations influence later occupational and educational goals. In particular key factors which impinge on this compromise will be explored both in regard to the institutional context and also at the level of the individual as regards the work values of Greek youth.

The nature of this compromise is not only an intriguing theoretical problem but also constitutes an important practical issue and a central concern of educational policy. For the past several decades, demand for higher education in Greece has witnessed an explosion of proportions such that demand far outstrips supply of university places. One of the reasons for looking at the nature of

the occupational compromise which takes place over time is to identify some of the factors which contribute to this situation.

A general framework. This study examines occupational demand at two points in time which are critical junctures in the process of choosing. They represent key points of transition, selection and decision-making where institutional constraints require young people to make the initial choices that will affect their later occupational and educational options. Grade nine, the first point in time, coincides with the completion of the compulsory lower secondary level cycle (gymnasium). Young people have to decide whether to terminate their schooling or to continue their education in an upper secondary school and to choose among the academic General Lyceum, the Technical/Vocational Lyceum and the various Technical/Vocational Schools. Moreover, when this study was launched (Spring of 1981), youths also had to consider their probability of passing entrance examinations for the two types of lycea.[1] Grade twelve, the second point in time, coincides with the final year of the upper secondary cycle when young people have to decide whether to terminate schooling or to continue their education contingent on passing examinations for a tertiary level school. Specific occupational choices are, generally speaking, set at this point because the faculty for which one takes examinations determines the occupation for which one will train. Since nearly all lyceum graduates want to enter tertiary education (see Chapter Four), this coupling is particularly tight in Greece so that occupational options are coterminous with educational options. However, the range of occupational and educational options confronting young people at this point has already been narrowed down: first in terms of the lyceum one is enrolled in, and second, in regard to the stream one follows since this defines which university faculties one can enter. Thus in the compromise between occupational preferences and occupational expectations, a series of institutional arrangements has been screening choices over time.

1. From 1977 onwards, students graduating from gymnasium were required to pass national entrance examinations in order to enroll in a lyceum (Law 309/76). In the fall of 1981, these entrance examinations were abolished and students could freely enroll in lycea of any type.

What is evident from the above description, and is indeed corroborated by any number of studies, is that future occupational roles are inextricably linked to schooling. By tying the development of occupational aspirations into the institutional framework, the present study will explore these linkages both in terms of their influence on individual occupational and educational demand and also in terms of their implications for educational policy and planning.

A description of the institutional framework. In Greece throughout this century, the modernization of education has been problematic and has motivated many and repeated reforms. The current system of education begins with a nine year compulsory education course; the first six grades constitute the primary cycle followed by a three-year lower secondary cycle, the gymnasium. The upper secondary cycle which follows the gymnasium is differentiated among the three-year lycea, that is, the General, the Technical-Vocational, and the recently inroduced (1984) Comprehensive Lycea, and the two-year Technical-Vocational Schools. The general lyceum is primarily an academic course preparing youths for entry into the universities. In the third year of general lyceum, students choose among four main streams according to subject area: science, medicine, literature and social science.[2] Stream enrollment, as mentioned above, defines which tertiary faculties a student may take examinations for. The second main upper secondary school is the technical-vocational lyceum which, as its name implies, places greater emphasis on the provision of vocational skills. Its graduates for the most part either enter the labor force directly or compete for entry to the Technological Educational Institutes.[3] The secondary level technical-vocational schools that are affiliated with various Ministries are terminal educational institutions. Most upper secondary school students enroll in general lycea (73%), followed by technical-vocational lycea (16%), and then technical schools (11%).[4]

2. A fifth general and terminal stream is available only in some schools.

3. Certain technical-vocational lycea also offer science and medical streams in addition to vocational streams and graduates of the former streams may sit for University examinations. In addittion, about 23% of all TEI places are reserved for technical-vocational lycea graduates who maintain a specified grade-point average in lyceum.

4. Total upper secondary school enrollment of 288,670 in the 1980/81 school year (NSSG, 1986: 77,124). This figure does not include enrollments in the secondary technical schools of the old type (enrollment 3,041).

At the tertiary level the main types of institutes are the three to four year Technological Educational Institutes or TEI, the four-year Universities, and the two-year Paedogogical Academies. Recently the Paedogogical Academies were abolished and replaced by Departments of Education that are incorporated into the Universities.

During the past three decades the Greek educational system has undergone a tremendous expansion at all levels. The number of primary school graduates increased from 116,101 in 1960 (NSSG, 1962a) to 152,389 in 1980 (NSSG, 1986) — despite the drop in birth rates. Secondary schooling has rapidly evolved into a mass institution with enrollments increasing from 208,550 in 1960 (NSSG, 1962b) to 641,531 in 1980 (NSSG, 1986), and from around 20% of the total secondary school age cohort in 1960 to 46% of the 17-year-old age cohort in 1972 (Psacharopoulos and Kazamias, 1985: Figure 9.2, p. 135) and to 76% of 16 year-olds in 1983 (Kostakis, Forthcoming). Higher education enrollments have risen from 28,302 in 1960 (NSSG, 1962c) to 121,116 in 1980 (NSSG, 1980).

Policy Issues. The expansion of education is undoubtedly a positive development but, as with any rapid change, it has also generated strain within the system. A particular source of tension is the capacity of the Greek labor market to absorb highly trained graduates (Glytsos and Fakiolas, 1985:317; OECD, 1982:22-36). A central dilemma develops as the commitment of the government to satisfying the increasing social demand for education is weighted against the burgeoning problem of graduate unemployment and/or underemployment.

Demand for higher education in Greece is one of the most serious problems that policy makers have to deal with. Indicatively, in 1985 nearly 150,000 young people sat for higher education examinations, while about 50,000 successfully passed. Of these, slightly less than half succeeded in entering a Technological Educational Institute and most of the rest succeeded in entering a university faculty. In other words, nearly 100,000 youths were frustrated in their efforts. Moreover, of the total number of candidates, over half were young people making their second or more attempt.[5]

5. The numbers presented in this paragraph are calculated from various published figures (*Eleftherotipia*, 6/6/85, 13/6/85 and 3/9/85).

Beyond the basic dimensions of this problem, little else is known. In order to clarify and explore the issue, this study proposes to change the viewpoint from system needs to individual perceptions and demands as a vital and necessary input to social policy, and one which needs to be examined rather than assumed.

The research agenda. This study is part of a larger undertaking aiming at identifying the nature of occupational and educational demand among Greek youth. Specific issues are socioeconomic and demographic determinants of occupational choice, availability of information sources, work values, parent aspirations, the role of ability and school grades, peer influences and perceptions of job outlets (see Questionnaire, Appendix A). The analysis of the social and information context of occupational choosing figures in a forthcoming KEPE study (Kostakis, In Press).

The present analysis focuses on the dynamic development of occupational and educational demand. By its nature, occupational demand is not a static phenomenon. It is a process, as mentioned before, of successive compromise over time between preferences for a desired or ideal occupation and those realistic options that are evaluated against constraints, both internal and external to the individual.

Despite the "constantly" high level of demand for higher education and for white collar occupations, this study views occupational and educational demand as differentiated outcomes of the underlying process of choosing so that occupational and educational demand change over time in important ways. The patterns of change and stability in occupational and educational demand hold significant information that might be useful in defining and understanding the choice situations and dilemmas currently confronting young people.

One of the factors that is critical to an understanding of how youths perceive and evaluate their education and work options is their system of values. The reward hierarchy of individuals is integral to the outcome of the weighting between preferences and expectations (Härnqvist, 1978; Super and Hall, 1978; Blau et al., 1956). In Chapter Three of this study this issue is taken up in detail, and we shall describe young people's system of work values and their relationship to occupational choices.

Occupational choices are in turn examined in relation to shifts in social demand between gymnasium and lyceum, and in terms of

stability and change in individual occupational decision making. Chapters Four and Five address these shifts between specific occupations and between general fields of study. Particular questions focus on the institutional context of such changes, that is, with regard to the educational system, public sector hiring policies and the family as a decision making unit. The conclusion summarizes the general trends and discusses some of their policy implications.

CHAPTER TWO

METHODOLOGY

2.0. Introduction

This chapter presents the methodological background of the study and the longitudinal survey. In the first section we provide a general introduction to the concept of occupation and discuss how this relates to occupational expectations and educational demand. Variable definitions are also given in the first section, while a supporting presentation of variable construction is provided in Appendix D that includes detailed data on occupational distribution in Greece. The second section describes the procedures followed in conducting the longitudinal survey which refers to two time periods, the first when students were in grade nine, and the second when students were in grade twelve.

The rationale of the survey and its limitations are also discussed. The final section discusses the characteristics of the sample of lyceum students compared to the original sample of gymnasium students and to national norms.

2.1. Variable Definition

2.1.1. Operationalizing the Concepts of Occupational and Educational Demand

As achieved characteristics increasingly determine the rank of individuals and groups in modern societies (Taylor and McKirnan, 1984), occupation has become the primary focus of household status (Parsons, 1970). Occupation reflects differences of educational background and economic level (Reiss et al., 1961), of power and privilege (Treiman, 1977), and of extrinsic and intrinsic rewards (Hatt,

1961) which collectively give rise to different patterns of deference and acceptance (Goldthorpe and Hope, 1974). Prestige is a prominent aspect of occupation that is correlated with socioeconomic status but which also summarizes on a vertical grading various other socio-relational characteristics of occupations such as authority, deference and privilege. Furthermore, occupation can also be identified with functional differences in the work people do, with their industrial sector affiliation, and with class as defined by variation in control of the means of production. Thus occupation is a complex, multi-dimensional concept which necessarily takes on specific meanings according to particular theoretical foci and in relation to specific substantive questions.

In this study our focus is on the dynamics of occupational demand and of occupational choosing among a single cohort of youths. For the most part, this study defines student aspirations as choices between different types of work so that horizontal differentiation between occupations is the main operational criterion. One reason for this emphasis is that horizontal differentiation of occupational aspirations has received far less attention in the research. Moreover, in practical terms, there is very little vertical differentiation of Greek youths' occupational aspirations to explore: for example, 84% of the sample of general lyceum students wanted to go into a professional or related occupation. Most importantly, however, focusing on horizontal differences models the occupational decision making process more closely and generates unique information. When individuals make occupational choices, they make them in terms of type of work/job rather than in terms of prestige, which is only one contributory factor.

Finally, describing horizontal differences in occupational aspirations provides much practical information for policy makers on the current structure of demand for higher education, since, as previously mentioned, occupational and educational options are often coterminous. The overwhelming majority of secondary school seniors, both in the past and currently, want to continue to the tertiary level, but it is far less obvious what kinds of educational choices they are making as regards courses and fields of study.

This concern with the distribution of educational demand underlies the focus on occupational plans (expected occupation) rather than on wished for or inactive career aspirations. Questionnaire items in the lyceum student survey specifically distinguished between

an expected occupation/job and a desired occupation (see survey items 2 and 4, Appendix A). However, for most students these dimensions coincide. Nearly three quarters of the lyceum students (72%) reported the same desired and expected occupation.[1] The minority that would like to do something else (28%) emphasize the restrictive role of institutional constraints. The main reasons given were poor grades (40%), family objections (11%), being in another lyceum stream (10%) and that appropriate faculties/schools are not available in Greece (8%).

With this reasoning in mind, the nature of the compromise between occupational preferences and expectations is of less interest here than are the outcomes of that dynamic, that is, the actual occupations young people intend to enter.[2] The terms occupational aspirations and expectations are therefore used interchangeably in describing young people's intentions.

Descriptions of all variables used in the study are provided below. The variables referring to background characteristics, gender and occupational choices of gymnasium students were gathered from the first wave of the survey (see Procedures below), and variables referring to the occupational choices and work values of lyceum students were gathered from the second survey wave. A detailed explanation of variable definitions and their construction is provided in Appendix D.

2.1.2. Variable List

Occupational Expectations Time 1 and
Occupational Expectations Time 2:

Responses to the open ended question "What occupation do you expect to enter when you finish your education (lyceum or higher)..." were coded according to the three digit coding scheme of the International Labor Office. There were 105 occupations listed at Time 1 (gymnasium) and 74 at Time 2 (Lyceum).

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1. Psacharopoulos (1980:606) presents some relevant aggregate figures on educational demand. Comparisons of distributions for candidates by the desired tertiary school of study and by the schools in which entrance exams were taken gives a similar total level of discrepancy, 28.5%.

2. For an exploration of how occupational expectations and occupational aspirations might differ see Saha (1982b) and Marini and Greenberger (1978).

Prestige of Occupational Expectations Time 1 and
Prestige of Occupational Expectations Time 2:

Continuous variables based on a modification of the Standard International Occupational Prestige Scale (Treiman, 1977). See Appendix D.

Paternal Occupational Prestige: A continuous variable referring to father's job and coded as above. See Appendix D.

Occupational Field Time 1 and
Occupational Field Time 2:

There are seven fields defined that correspond to the following tertiary schools:

1. The Sciences refer to the Physics/Math Faculties, the Polytechnics, the Schools of Agronomy and the TEI Schools of Applied Technology, Graphic Arts and Food Technology.
2. Medicine refers to the Medical Schools and the TEI Schools of Para-Medical Professions.
3. The Humanities refer to the Philosophy Schools and the Theology Faculties.
4. The Social Sciences refer to the Panteios School of Political Science, the Law Faculties, the Schools of Economics, the Schools of Industrial Studies and the TEI Schools of Management.
5. Education refers to the 2-year Paedagogical Academies, the 2-year Preprimary Teacher Schools, the 4-year University Departments of Primary Teaching and of Preprimary Teaching and the 4-year Academies of Physical Education.
6. The Military refers to officer training institutes such as Evelpidon and the Naval Academy, and to the Police Officer Academy.
7. Non-Higher Education incorporates all occupations not requiring a state post-secondary education.

Academic Achievement: A standardized continuous index based on a factor analysis of six prior achievement scores: grades in second year of gymnasium, grades on lyceum entrance examinations, grades in second year of lyceum. The data were obtained from school records to avoid the bias of self-reporting (see Appendix D).

Male: This is a dummy variable with 1 representing boys and 0 girls.

Father's Education: This is a categorical variable which takes the values: 1 if no formal schooling; 2 if only some grades of primary school completed; 4 if some secondary; 5 if secondary school completed; 6 if some or completed non-university education; and 7 if some or completed university education.

Urbanism: This is a categorical variable which takes the values: 1 for villages with less than 3,000 population; 2 for urban centers with more than 3,000; 3 for urban centers with more than 10,000; 4 for the greater Athens area.

Occupational Reward Values: These are a series of categorical variables graded on a five-point Likert scale (1=Not at all to 5=Very Much). Students indicated the extent to which these factors were important in their occupational decision making. The work values are:

1. Individual Talents and Interests
2. Job Security and Permanence
3. Good Work Environment
4. Market Demand for Job
5. School Achievement
6. High Future Income
7. Family Financial Constraints
8. Family Preferences
9. Employment in Family Business
10. Prior Work Experience

2.2. Procedures

Capitalizing on an existing data base that covered several thousand youths attending grade three of gymnasium in 1981 (see Kostakis, 1987), a second survey of these youths was conducted three years later in spring of 1984.

In the first survey wave, questionnaires were administered to 2,042 ninth grade students attending 60 gymnasia in the greater Athens area and in the provinces of Boeotia, Fokida, Grevena, Kavala and Kozani. Both schools and classroom clusters were randomly selected.

In the second survey wave, questionnaires were administered to that part of the original sample attending General Lycea. The majority of upper secondary school students attend general lycea rather than technical/vocational lycea, so that general lycea students can be considered more indicative of the main stream. Our original in-

tention had been to also cover students attending technical/vocational lycea, but the logistic problems involved proved insurmountable. This limitation of the sample should be borne in mind.

Since the original survey did not include the addresses of students, youths had to be traced through their schools. The receptor lycea for the 1981 gymnasia were located with the help of the respective departments of the Ministry of Education, or, in some difficult cases, through direct contact with the original feeder gymnasia. A total of 59 general lycea were thus identified as receptors of the 1981 gymnasium students. It was not possible to locate the technical/vocational lycea receiving the gymnasium sample because enrollments were dispersed: that is, graduates of a specific gymnasium feed into any number of technical/vocational lycea rather than into just one or two as is the case with general lycea. The names of sampled lycea are listed in Appendix B.

The second survey was then conducted in two phases beginning in April of 1984 and extending to the end of the school year. The first phase covered the greater Athens area. The survey team visited Athens and Piraeus lycea and gave out questionnaires to the targeted students during a regular class hour that had been agreed upon with each school's headmaster. Information on student's grades in mathematics, physics and classics in the second year of lyceum was obtained from school records.

The second phase of the survey covered the provinces. Local school authorities in each province distributed questionnaire packages to the targeted schools that were then administered by teachers.[3] The questionnaires had been precoded for each gymnasium student participating in the original survey so that, once distributed, they could be completed anonymously. When the questionnaires had been returned, a list of the lyceum students participating in the study was drawn up and this list was sent to the schools' headmasters who provided school grades for these students.

A pilot study had been conducted prior to the survey in order to develop and refine the questionnaire. Fifty randomly chosen stu-

3. Both the school authorities and the teachers were very helpful. There were cases, as in Grevena and Chrysoupoli (Kavala), where of their own volition they located students currently attending technical lycea. This effort on their part resulted in a small sample of 46 technical lycea students.

dents from the 30th Lyceum of Athens were presented with a series of closed and open-ended questions. Their specific responses and reactions were analyzed and a final version of the questionnaire was then designed.

2.3. Description of the Sample

As shown in Figure 2.1, of the 2,042 students who had been surveyed when they were attending the third year of gymnasium, only 277 (13.5%) could not be located at all three years later. Of this group of unknowns, most, 160 or 7.5% of the total, were lost due to administrative difficulties: that is, we could not locate the receptor lycea.

The study does have at least partial information on the remaining 1,765 gymnasium students (86%). First, there is complete information on 923 students (46%) who were located in 59 general lycea and who were resurveyed in 1984. Another group of 162 students (7.8%) were located in the surveyed lycea but did not complete questionnaires since they were either absent on the day of the survey and could not be located at a later date, or they had stayed back in grade 2 of lyceum.[4] For the 680 gymnasium students (33%) who as of 1984 were not in these schools, information was collected from school records, but primarily from other students, on their current status: whether they were in school and of what type, whether they had dropped out and what they were currently doing. Cross-checking this information showed it to be quite reliable. A description of the educational flow of the gymnasium students is provided in Chapter 4.

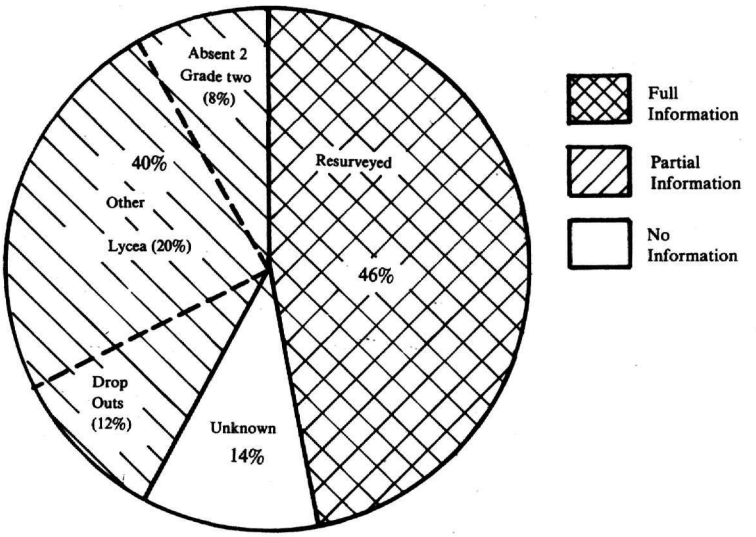
2.3.1 Comparison of the Sample to National Figures

Of the 923 lyceum students who participated in the survey, 56% were girls and 44% were boys. This corresponds closely to the na-

4. This figure includes 29 lyceum students who took part in the second survey and completed the questionnaire, but whose responses about their occupational plans were so confused that we could not interpret them.

FIGURE 2.1

1984 Sampling Breakdown of the 1981 Gymnasium Students



tional distribution: 55% of general lyceum seniors are girls and 46% are boys.[5] Reflecting a bias from the first survey wave the lyceum sample has a somewhat lower share of students from the provinces compared to the national student body. Fifty-eight percent of the lyceum sample is from Athens and 42% is from the provinces, whereas of all students in the third year of lyceum, 48% are from the metropolitan centers of Athens and Salonica and 52% from the rest of Greece.[6] Students from the Athens area are therefore overrepresented in the sample. However, this should not pose any statis-

5. Students attending public day general lycea in 1981-1982. Figures supplied by the Division of Educational Statistics of the National Statistical Service of Greece.

6. Ibid.

tical problems since we still have such a broad share of students from the provinces — almost half the sample — that enough variation is assured.

The track enrollment of students in this sample compared to that of the 1985 lyceum graduating class taking university exams is respectively: 1. 22.3% vs. 22.4% for the science stream; 2. 9.1% vs. 6.4% for the medical stream; 3. 22.3% vs. 27.8% for the literary stream; and 4. 42.0% vs. 43.3% for the economics stream.[7] In addition, 4.3% of the sample of lyceum seniors were enrolled in the terminal fifth stream.

The distribution of socioeconomic background is another key aspect of sample representativeness. Since national figures on social background for lyceum students do not exist, fathers of sampled students are compared with the corresponding adult population. Table 2.1 breaks down the educational level of economically active males aged 25 to 64 years and compares it to this study's sample. The age span of the national male sample is probably broader than appropriate, but statistics were not available for finer age grades. To accomodate our bias towards Athens, figures are presented separately according to level of urbanism.

A comparison of these figures shows substantial similarity. In certain instances the proportions even match exactly (e.g. percentage with secondary education in urban and rural areas. Rather small discrepancies are noted overall, the greatest of which are: for our rural sample, - 2.1% (higher education), + 4.6% (less than primary schooling), and -12.4% (completed primary schooling) and for the urban sample, + 4.5% (higher education) and - 9.3% (completed primary schooling).

The only consistent differences are found within the three lowest educational categories. Compared to the national figures, there seems to be more fathers with less than primary or no schooling, and fewer fathers who have completed primary schooling. Perhaps adults responding to the National Statistical Service overstate rudimentary educational qualifications as socially desirable, however, it is unlikely that youths systematically understate their parent's educational level. Another possibility is that the younger age grades in-

7. Figures on the national 1985 lyceum graduating class from *Eleftherotipia*, 13/6/85.

TABLE 2.1

A Comparison of Educational Distribution Between Economically Active Males (Aged 25-64) and Fathers of the Sampled Students

Education	Urban (10,000+)		Semi-Urban (> 2,000-10,000)		Rural (< 2,000)	
	% National	% Sample	% National	% Sample	% National	% Sample
Higher Education	15.83	20.3	7.67	7.6	3.92	1.8
Secondary Education	22.32	22.0	11.41	8.2	5.97	5.1
Primary Education	52.99	43.7	62.31	59.2	73.11	60.7
Less than Primary Schooling	8.70	10.7	18.42	23.0	22.84	27.4
No-Schooling and Non-Responses	.16	3.3	.20	2.0	.14	5.0

Source: NSSG, 1981, (Sample 10%) Economically Active by Level of Education by Sex and by Urbanism, Table 17, unpublished.

a. Rural for our sample included villages with up to 3,000 inhabitants.

TABLE 2.2

A Comparison of Occupational Distributions Between Economically Active Males (Aged 35-39) and Fathers of the Sampled Students

Occupations	Urban (10,000+)		Semi-Urban (> 2,000-10,000)		Rural (< 2,000)	
	% National	% Sample	% National	% Sample	% National	% Sample
Professional and Related Workers	14.4	14.0	5.3	4.6	1.9	1.7
Administrative and Managerial	4.6	4.9	1.7	3.1	.5	.5
Office and Clerical	9.9	14.6	5.9	9.2	3.2	3.7
Sales and Trades	13.7	10.0	9.6	8.7	3.9	3.0
Service	8.0	6.5	7.5	4.1	5.1	4.7
Agricultural	3.4	.7	34.7	15.9	63.4	51.1
Production Workers and Labour	44.9	44.4	34.7	52.8	21.	33.4

Source: NSSG, Study 1983, Employed by Single Digit Work Categories by Age and Sex, Table 9, p. 5-21, unpublished.

cluded in the national sample inflate the education breakdown in comparison.

Table 2.2 describes and compares occupational background. The adult males of the national sample span the ages of 35 to 59 which approximates the probable age distribution of a parental population. The differences emerging from the occupational comparisons are even more trivial than those with regard to education. Excluding the categories of farmers and labourers, the single greatest divergence is less than 5% (4.7% more clerical workers in urban areas among our sample). Most comparisons show few if any differences. The national and sample figures are therefore on the whole congruent.

There are, however, notable differences in the proportionate representation of farmers and labourers in rural and semi-urban areas. This sample consistently has a lower share of farmers and a higher share of labourers than does the national cross-section. Moreover, adding these two categories together gives the same totals for the national and this study's samples (in rural areas 84.9% versus 84.5% and in semi-urban areas 69.4% versus 67.7%), so that there appears to be a transposition of ratios for these two occupational categories. Since farmers in Greece often have a second or third occupation, it is probable that when adults are asked by the Statistical Service for their occupation, they will report farming — especially since up to a certain income level, farmers do not pay income tax. On the other hand, when youths are asked to report their father's occupation, they might tend to report an occupation other than farming, since the latter might be considered less prestigious — or it might be taken for granted as everybody farms a little.

These comparisons of parental occupation and education indicate that within urbanism strata our sample does not seriously deviate from national distributions.

CHAPTER THREE*

WORK VALUES

3.1. Introduction

Most of the work relevant to occupational choice seems to converge on the belief that values are an integral part of the intricate process which constitutes choosing. A relationship between work preferences and occupational values has consistently been identified (Holland, 1976). As early as 1965, Blau et al. claimed that occupational choice is a rational process whereby people attempt to maximize occupational rewards they value most highly. Much theoretical and empirical work has thereafter focused on occupational reward values (Rosenberg, 1957; Davis, 1965; Kilpatrick, Cummings and Jennings, 1964; Kohn, 1969; Belcher and Atchison, 1976).

Values are articulated to the social context which elicits, produces and sustains them under appropriate circumstances. They are conceived of as motivational perceptual states which direct behavior and which define what is expected and desired (Hollander, 1971).

Härnqvist's adaptation of the Blau et al. (1956) framework for examining occupational choice differentiates between the reward values on the individual side, and the amount and types of reward on the hiring side (Härnqvist, 1978).

Several different value dimensions have been identified as integral to the work situation. Adult white-collar males were found to value "self-direction" while blue-collar workers emphasized "conformity to external authority" (Kohn, 1969). Self-direction versus conformity was subsequently linked to occupational status in the parental generation (Ibid; Looker and Pineo, 1983). Work values have also been studied in relation to the "protestant ethic" (Lenski, 1963; Duncan and Featherman, 1972).

* This chapter is contributed by Thalia Dragonas.

The most common value dimension identified seems to be the extrinsic/intrinsic dichotomy. Extrinsic values refer to rewards which are external to the work activities as such: e.g. income, prestige, security etc. Intrinsic values concern rewards which are obtained directly from the work experience. The interest, the autonomy, the responsibility derived from a specific job imply that work is valued for its own sake. Nuances beyond the extrinsic/intrinsic dichotomy have also been identified. For example, intrinsic rewards have been differentiated into two dimensions: the individualistic dimension whereby the focus is on the use of abilities, expression of interests, creativity, and the social one where people-oriented features are highlighted such as, for example, working with people or being useful to the society (Rosenberg, 1957; Davis, 1965; Mortimer, 1975).

Maslow's theory on the hierarchy of needs (1954) has generated the argument that material needs have to be satisfied first so that a worker's attention may turn from extrinsic to intrinsic rewards. Flanagan, Strauss and Ulman (1974) found that the importance of extrinsic rewards decreases when material needs are covered and intrinsic satisfactions are increased. However, Andrisani and Miljus (1976) demonstrated no consistent relationship between current income and intrinsic reward preferences, while Mortimer and Lorence (1976) showed that income reduced the importance of people-oriented and intrinsic values. Moreover, both the latter and Lindsay and Knox (1984) provided evidence that the salience of intrinsic or extrinsic occupational selection is greater at upper socioeconomic levels, probably because of the broader occupational opportunities available at such levels. Along the same line, Mortimer and Lorence (Ibid) found that work autonomy, an occupational condition which heightens intrinsic values, was largely absent in lower-status occupational positions.

Another stream of the work value literature incorporates the role of education. A number of studies have underlined the effect of educational experience on values in general. (Feldman and Newcomb, 1969; Hyman and Wright, 1979), while Lindsay and Knox (1984) showed that the characteristics of a chosen occupation are direct consequences not only of prior existing values, but also of educational attainment. They maintained that education enhances an emphasis on intrinsic rewards thus mitigating the importance placed on extrinsic rewards.

Further, research has shown that choices and preferences within the occupational domain tend to be congruent with one's gender and to acquire a normative quality (Feather and Said, 1983). Thus the stereotypical gender role differentiation might lead males to prefer extrinsic work values and females to prefer intrinsic work values. For example, Filer (1983) found women trading off earnings for intrinsic, non-pecuniary rewards. The irony is, as Lindsay and Knox (1984) state, that women who tend to value intrinsic rewards are usually placed in occupations that provide significantly lower intrinsic rewards than those of men.

It is clearly suggested that reward values influence preference for alternative choices. On the basis of this contention, several relevant themes were explored in the context of the present study; namely, the extent to which reward values are related to gender differences, to milieu provenance, to socioeconomic determinants such as prestige of the intended occupation and prestige of father's occupation and to academic ability. Furthermore, it was examined whether horizontal occupational demand (choice of different occupational fieds) is characterized by distinct profiles of work values.

3.2. Instruments

In order to explore the questions concerning values underscoring occupational preferences and choices, relevant indices were developed. These indices were partly drawn from the open-ended questions of the pilot testing; one of its main goals being the identification of occupational reward value items. The occupational reward values were subsequently placed on a five-point Likert scale. Lyceum students were then asked to indicate the degree to which the choice of their intended occupation was influenced by the following considerations: (a) market demand; (b) current family or financial constraints; (c) the prospect of having a high future income; (d) the prospect of finding a secure, permanent job; (e) their achievement at school; (f) their special talents and interests; (g) the possibility of finding a good work environment; (h) entry to an already existing established job; (i) the occupational preferences held by family; and (j) prior experience in a similar job.

Another measure which further revealed the value structure of

students' occupational choices was their free response to an open-ended question requesting their first and second rank ordered reasons for choosing the intended occupation. This free response provided qualitative richness and depth not available in the occupational reward values.

3.3. Analysis and Discussion

3.3.1. Ranking Work Values

The first and simplest type of analysis undertaken was frequency distributions of the ten occupational reward value items. The five-point scale ranged from "Not at all" to "Very Much". The mean scores indicate the direction of scoring for each item (Table 3.1).

Table 3.1 reveals that lyceum students score highest on the "Individual talents and interests" scale and lowest on the "Prior work experience" scale. This scoring portrays the special talents and the specific interests which a student might have as a powerful influence on occupational selection. It is an internal disposition that seems to mark the choices of students: Sjoberg (1984) finds that among Swedish youth there is a similar strong emphasis on the interest factor in vocational choices, which indeed overshadowed other factors — such as future job market prospects.

Amongst our sample, the security and permanence the students' intended occupation would provide is the next most highly rated factor influencing occupational selection. Along with the good work environment that the prospective occupation might offer and the very realistic regard for market demand, we discern a group of statements that clearly disclose students' concern — and perhaps anxiety — about the future. Thus, more than anything else, a tendency for certainty, security and safety is revealed. It is interesting to note that the high income which the intended occupation might afford is less highly evaluated. Previous work with Greek pupils has similarly shown that the wish to improve one's economic situation was not a particularly strong motivating factor in continuing one's studies, and ranked only fourth among the five most important factors (Soumelis, 1979).

TABLE 3.1

Mean Scores and Standard Deviations of Occupational Reward Values

Occupational Reward Value Items	X	SD	N[a]
Individual talents and interests	4.25	1.07	883
Job security and permanence	3.86	1.28	892
Good work environment	3.50	1.28	856
Market demand for job	3.05	1.38	884
School achievement	3.02	1.34	885
High future income	2.69	1.36	882
Family/financial constraints	1.75	1.13	877
Family preferences	1.61	.95	579
Enter family business	1.55	1.12	487
Prior work experiences	1.40	.99	376

a. N varies because of missing values. As shown, numbers decrease drastically in cases of 'family preferences', 'enter family business' and 'prior work experiences'.

Experience in a similar job is the least highly evaluated factor playing a role in occupational selection. Noting, however, the marked drop in response rate to this question and the great number checking the "not at all" category, it is apparent that very few, only about 10% of the students, have actually had prior work experience.

The above factors influencing occupational selection touched upon external influences and internal dispositions. These two dimensions led us to explore further a possible consistent pattern of value dimension as identified in the relevant literature. The most usual common pattern identified has been that of the extrinsic/intrinsic dichotomy underlying work values and tastes. In order to trace this line of thinking we looked at the first and second reasons for occupational choice given to the open question. The various responses were coded into 21 reasons. Table 3.2 shows the frequency of first and second reasons provided, and ranks them according to the frequency of the first reason.

The most frequently mentioned first reason for occupational choice was "I like it" (37%). This is admittedly a very general

TABLE 3.2

First and Second Reasons Given by Lyceum Students for their Occupational Choice

	First %	Second %
"I like it"	37.0	11.6
Job security/permanence	12.6	17.9
Intellectual interest job provides	9.1	3.0
Individual talent	7.0	6.2
"I like children"	6.7	2.6
Social contribution	5.2	5.9
Occupation suits personality	4.2	8.3
Market demand for occupation	4.0	5.2
Good salary	3.9	16.3
Low scores at school	1.5	1.6
Work conditions	1.4	5.4
Offers independence	1.2	2.3
Immediate occupational establishment	1.0	1.2
Significant other's influence	1.0	2.4
Easy work	1.0	1.7
Future field growth	.8	1.6
Potential for individual advancement	.8	2.0
Ready job available	.7	.5
Prestige of occupation	.6	1.2
Financial difficulties	.2	.7
Short hours	.2	2.2
Total	100.0	100.0

statement that could take on as many meanings as the responses provided. However, no matter what such a statement might mean to each respondent individually, it still indicates preference related to an internal subjective evaluation of what each specific occupation could represent. Härnqvist (1978) similarly notes that "liking school" was among the most frequently indicated motives for choosing a university-preparatory school by Swedish youth. The most frequently mentioned second reason for occupational choices is "job

security and permanence" (17.9%) and very close to that "good salary" (16.3%). "I like it", as a second reason, drops from 37% to 11.6%. In general, excepting job security, intrinsic valuations seem to dominate as the most frequently cited primary reasons for choosing a job, while among second reasons extrinsic valuations exhibit an increased frequency, and particularly salary considerations. What stands out in this listing is the importance youths attach to job security. It is the second most frequently cited primary reason for selecting an occupation, and the most frequently cited secondary reason.

Looking at the students' responses and relating them to the relevant literature, an intrinsic/extrinsic dimension seemed apparent. Responses such as "immediate occupational establishment", "job security and permanence", "good salary", "market demand", "work conditions", "easy work", "short working hours", "ready family job", "low scores at school and thus providing no other choice", "significant others' influence", and "financial problems", all were taken as extrinsic values that are related to the occupation but are external to the meaning of the work activity itself. Responses such as "I like it", "I have a talent for it", "I like children", "it is intellectually interesting", "the work conditions suit my personality disposition", "it offers independence", "it is a contribution society", "it offers prospective advancement", "there is a future growth of the specific field" and "prestige",[1] were considered to be intrinsic values deriving directly from the specific occupation and involving valuing the work for its own sake.

3.3.2. Students' Reasons for Occupational Choice, by Sex and Achievement

More exploratory and descriptive information is provided by a set of cross-tabulations which link the extrinsic and intrinisic value statements made by students to the variables of sex and academic ability. The lyceum students' first and second responses were added together. Table 3.3 shows the responses with the highest frequency

1. Categorizing "prestige", "future growth of the specific field" and "it offers prospective advancement" under the intrinsic dimension could be debatable since "prestige" has often been considered an extrinsic work value (e.g. Lindsay and Knox, 1984). However, we believe that the above reasons for occupational choice are dimensions related to the enhancement of personal autonomy and to the inherent importance of the job itself. In any case response rate is very low on these statements, so that the overall structure is little affected.

TABLE 3.3

Students Reasons for Occupational Choice by Sex

Work Values	Sex		Total
	Girls % (N)	Boys % (N)	(N)
"I like it"	55.6 (229)	44.0 (183)	(412)
Job security/permanence	57.0 (139)	43.0 (105)	(244)
Good salary	31.6 (49)	68.4 (106)	(155)
Individual talent	50.9 (55)	49.1 (53)	(108)
Intellectual interest job provides	67.6 (69)	32.4 (33)	(102)
Suits my personality/dispositions	73.7 (73)	26.3 (26)	(99)
Social contribution	68.9 (62)	31.1 (28)	(90)
"I like children"	94.9 (74)	5.1 (4)	(78)
Market demand	36.5 (27)	63.5 (47)	(74)
Good work conditions	43.4 (23)	56.6 (30)	(53)

(N= 50 or more) and the differences between male and female response pattern.

Girls seem much more frequently than boys to choose an occupation on the basis of the social contribution they feel they are making (68.9% versus 31.1%), of the extent it suits their personality

dispositions (73.7% versus 26.3%), of their love for children — especially in the context of an educational career — (94.9% versus 5%), and of their judging the intended occupation as intelectually interesting and stimulating (67.6% versus 32.4%). Excluding the very general and undifferentiated category, "I like", girls more often than boys cite intrinsic items as reasons for making their particular occupational choices.

On the other hand, certain items labelled extrinsic are cited much more often by boys than they are by girls. Boys place more emphasis on the prospect of a good salary (68.4% versus 31.6%) and on the market demand for their intended occupation (63.5% versus 36.5%). It seems that the image of father-provider and breadwinner is still reproduced for the younger generation. As far as "job security and permanence", "individual talents" and "work conditions" are concerned, no marked gender differences are noticed; girls mention the first two a little more often than do boys, and boys mention the latter a little more often than do girls. The overall pattern of responses corroborates findings from non-Greek contexts. According to a distinct gender differentiation, males typically put more weight on extrinsic work values and females on intrinsic ones (Lindsay and Knox, 1984; Filer 1983).

Table 3.4 reveals differences in value orientation in terms of students' academic achievement. A composite of all achievement indicators was broken down into three approximately even-sized categories: low, moderate and high ability.

Major differences between the three categories of achievement are noticed in the students' mention "social contribution" and "intellectual interest job provides", where the high academic ability students constitute the significantly larger category. This breakdown suggests that high achieving students tend to take intrinsic factors into account when making their occupational choices more than low achieving ones. A finding with some bearing on the issue is reported by Lindsay and Knox (1984). They showed a relationship between intrinsic values and educational attainment: those attaining higher levels of education are more likely to choose jobs with intrinsically rewarding characteristics compared to those attaining lower levels. Similarly, Mortimer and Lorence (1979) found that higher school achievement depresses extrinsic valuations. Psacharopoulos and Soumelis (1979), analysing determinants of the decision to continue into higher education in Greece, showed that the prospect of mak-

TABLE 3.4

Students' Reasons for Occupational Choice by Achievement

Work Values	Achievement			
	Low % (N)	Moderate % (N)	High % (N)	Total % (N)
"I like it"	38.1 (130)	30.5 (104)	31.4 (107)	(341)
Job security/permanence	43.4 (85)	26.0 (51)	30.6 (60)	(196)
Good salary	48.8 (61)	31.2 (39)	20.0 (25)	(125)
Intellectual interest job provides	12.4 (11)	30.3 (27)	57.3 (57)	(89)
Occupation suits personality	37.2 (32)	31.4 (27)	31.4 (27)	(86)
Individual talents	33.7 (29)	29.1 (25)	37.2 (32)	(86)
Social contribution	19.2 (15)	29.5 (23)	51.3 (40)	(78)
"I like children"	60.9 (39)	28.1 (18)	10.9 (7)	(64)
Good work conditions	52.2 (24)	34.8 (16)	13.0 (6)	(46)

ing money (an extrinsic reward) mainly motivates those youths who plan to discontinue their studies or to enter non-university schools.

A significant difference between the three achievement groups is also noticed as regards the mention of "good salary", "good work conditions" and, to a lesser degree, of "job security/permanence".

The low achievement group gives more weight to these items which were labelled extrinsic values. The reverse hypothesis is now generated: that low ability students, more than high ability ones, tend to make occupational choices on the basis of extrinsic values. Lindsay and Knox also observe that "education enhances an emphasis on intrinsic values of work while it causes less importance to be placed on the extrinsic values of the job" (1984:929). Noting, however, the equality of responses among ability groups for items such as "I like", "Individual talents", and "Occupation suits my personality", we feel that further evidence is needed to explain the connections between ability and the individual's valuation of different rewards.

Low achieving students also mention "I like children" with overwhelming frequency compared to the other two groups. Love for children as a reason for career choice was found to be exclusively limited to those students opting for an educational career — either as primary or nursery school teachers.

3.3.3. An Extrinsic Occupational Reward Scale

In order to explore further the intrinsic/extrinsic dimension of the occupational values underlying occupational choice, the occupational reward value items underwent a factor analysis.[2] Principal axes factor analysis with multiple R^2 as communalities was used, and a varimax rotation was employed. The analysis yielded three factors. Only the first factor was significant and was retained, having an eigenvalue $\geqq 1.0$ and explaining 72.7% of the variance. Table 3.5 depicts this factor. The items loading on it have a clear extrinsic value orientation.[3] The lack of significance of what we termed an intrinsic factor (Factor 2) is probably due to the fact that intrinsically rewarding characteristics are under-represented among the items so that the extrinsically oriented dimension necessarily prevails.

2. The items "enter family business", "family preferences" and "prior work experience" were excluded from the factor analysis since there was such a marked drop in response rate.

3. The table includes only those items with factor loadings $\geqq .30$.

TABLE 3.5

Extrinsically Rewarding Characteristics

Items	Loadings
Job security/permanence	.71
Market demand for job	.65
Good work environment	.57
High future income	.54
PCT.VA	72.7%
Eigenvalue	1.76403

The above factor structure shows that the most important value underlying the occupational choices which the students have claimed to make is a desire for security, safety and certainty. Is it the growing problem of unemployment which creates this stress and anxiety among Greek youth? Or does it reflect normative expectations that have grown from the long historical, political and social uncertainty and which have created a deep-rooted desire for security and permanence?

There is some evidence of an aversion to risk taking among Greek youths in comparison to youths from other member countries of the European Community (in Papandropoulos, 1985). Among young people in Greece the government is perceived as the best employer (Kanellopoulos, 1983), perhaps because it is a manifest expression of safety and security. Tsoukalas (1986) goes as far as contending that the impressive rise of new types of activities in the private sector which procure higher income but systematically disrespect "normal" profit, "normal" wages and market laws, can partly be explained by the desire to match the situation of the "secure" public employee. It is an expression of disengagement from social insecurity and its consequences.

Furthermore, when considering the occupational context of students' social background, it is apparent that a great number of fathers are self-employed (see Appendix D, Table D.1). Many of the

occupations in this category have an opportunistic character in Greece with frequent ups and downs, e.g. taxi drivers, construction workers, craftsmen and farmers. It might be that children from such families have a long experience of uncertainty and are thus motivated to opt for security.

Moreover, the passing of the traditional ways of life, the move towards a complex society and the search for new sets of behaviors leading to new rewards all induce the stress of change. It seems to us that people regress to a fantasy of security as a means of defense against this stress.

3.3.4. Predicting Work Values

3.3.4.1. Individual Characteristics

The way social attributes (socioeconomic status, gender and urbanism) as well as academic ability relate to work values was also explored. Multiple regression analysis was used for determining the relative effect of father's education and prestige of his occupation, of urbanism, of gender, of prestige of student's intended occupation and of school achievement on the elicited extrinsic factor. The regression analysis revealed that these variables explained an insignificant amount of the variance ($R^2 = .028$).

Another set of multiple regressions was then conducted in order to determine the bearing of socioeconomic status (prestige of father's occupation, father's education), gender, urbanism, prestige of the intended occupation and ability on the score of each of the ten occupational reward value items separately. Thus "individual talents and interests", "job security and permanence", "good work environment", "market demand for job", "school achievement", "high future income", "family financial constraints", "family preferences", "employment in family business" and "prior work experiences", were turned separately into dependent variables.

Since many of the multiple regression analyses again had quite low ratios of explained variance, we present only those equations with R^2 ratios over 5% in the belief that these findings may generate valid question for future research. Table 3.6 features "High Future Income" and reveals that boys place more emphasis than girls on prospective high income — conceptually a clear extrinsic reward;

TABLE 3.6

Predictors of High Future Income:Standardized Regression Coefficients

Variables	B
Urbanism	.094**
Prestige of Intended Occupation	- .079*
Males	.237***
Prestige of Father's Occupation	- .061
School Achievement	- .065
Fathers' Education	.070
R^2 = .067, F =.00	.070
N = 617	

*** $p \leqq .01$
** $p \leqq .05$
* $p \leqq .10$

TABLE 3.7

Predictors of School Achievement: Standardized Regression Coefficients

Variables	B
Urbanism	- .027
Prestige of Intended Occupation	.124***
Males	- .013
Prestige of Father's Occupation	- .003
School Achievement	.225***
Fathers' Education	- .026
R^2 = .093, F =.000	
N = 617	

*** $p \leqq .01$

that Athenian children more than children from the provinces would select an occupation on the basis of high income; and that the higher the prestige of the chosen occupation, the less emphasis is given to high income. Ability, father's education and prestige of father's occupation were not related to high future income. On the contrary, Psacharopoulos and Soumelis (1979) found that the prospect of making money was strongly and negatively related to school performance; they hypothesized that perhaps those who consider money very important come from poor families and are therefore diverted from higher education in order to engage in income producing activities.

The analysis of school achievement (Table 3.7) revealed that the higher the students' ability, the more their occupational choice is bound to be influenced by considerations of school achievement, that is, the better the student, the more he/she takes into account his/her grades. Future research should seriously consider interaction effects. Further, the higher the prestige of the chosen occupation, the greater the importance of school achievement in that choice. Similarly Sjoberg (1984) found that grades correlated positively with choice of more prestigious fields of future study.

Finally, Table 3.8 presents the results from the regression analysis of "Individual Talents and Interests". The higher the students' achievement, the more they tend to choose an occupation on the basis of their individual talents and interests. One might have expected that talents and interests would be a concept that would orient students independently of their school achievement. However, the high coefficient of school achievement in this equation leads one to suspect that "talent and interests" might actually be bounded in the school context.

Further, the higher the prestige of father's occupation as well as of the students' intended occupation, the more the occupational choice is presumed to be a function of individual talents and interests.

This analysis, despite considerable amounts of residual variance, provides evidence for some inferences. The prestige of the occupation students select is positively related to their special talents and personal interests, as well as to their academic ability. It is, however, inversely related to the students' expectation of a high future income. Boys, more than girls, were found to be influenced in their

TABLE 3.8

Predictors of Individual Talents and Interests: Standardized Regression Coefficients

Variables	B
Urbanism	- .026**
Prestige of Intended Occupation	.100**
Males	.014
Prestige of Father's Occupation	.089*
School Achievement	.174***
Fathers' Education	.007
R^2 = .071, F =.000	
N = 617	

*** p ≦ .01
** p ≦ .05
* p ≦.10

TABLE 3.9

High Future Income by Field: Standardized Regression Coefficients

Career Fields	B
Sciences	.002**
Non-Higher Education	.091**
Humanities	- .161***
Medicine	- .012
Social Sciences	.042
Military	.089**
Education	- .147***
R^2 = 0.64	
N = 754	

*** p ≦ .001
** p ≦ .01

occupational choice by a prospective high income. Further research on these preliminary findings may provide useful insights.

3.3.4.2. Field of Study

Another set of regression analyses was also attempted; this time, reward values were explored in terms of the specific field to which the intended occupation belongs. Our aim was to examine whether these various fields may be characterized by differences in occupational reward values and thereby define their unique value profiles. The seven fields (Science, Medicine, Socal Sciences, Humanities, Military, Education and Non-Higher Education) were entered in the equation as effect coded dummy variables, (i.e. comparison is made to the grand mean). Tables 3.9, 3.10, 3.11, and 3.12 present the regression analysis results for High Future Income, Job Security and Permanence, School Achievement, and Individual Talents and Interest.

Table 3.9 reveals that lyceum students who opt for occupations that belong to the fields of Education and Humanities place less emphasis on a prospective high income, while students who plan for a military career or for jobs that do not require higher education place more emphasis on the expectation of a high future income.

Some of these findings corroborate previous studies conducted with Greek samples. Psacharopoulos (1980) mentions that a rank ordering of desired educational careers follows closely the order of expected income and returns from the respective careers. Options for the military, the sciences and medicine were related to expectations of higher income, while the social sciences, the educational careers and law school were related to expectations of low returns. We should once more refer to the Psacharopoulos and Soumelis (1979) finding that the prospect of making money more strongly motivates youths who plan for either a non-higher education career of for a non-university school.

Table 3.10 presents the standardized Beta coefficients predicting the effect of the independent variables on Job Security and Permanence. The choice of an occupation belonging to the field of education or a military career seems to be influenced by the permanence and security they offer. On the other hand, students who select a

TABLE 3.10

Job Security and Permanence by Field: Standardized Regression Coefficients

Career Fields	B
Sciences	- .074**
Non-Higher Education	- .067*
Humanities	- .069**
Medicine	- .114***
Social Sciences	- .011
Military	.143***
Education	.073***
R^2 = .053	
N = 754	

*** $p \leqq .001$
** $p \leqq .05$
* $p \leqq .10$

TABLE 3.11

School Achievement by Field: Standardized Regression Coefficients

Career Fields	B
Sciences	.112***
Non-Higher Education	- .162***
Humanities	.074**
Medicine	.130***
Social Sciences	.046
Military	- .008
Education	.021
R^2 = 0.55	
N = 754	

*** $p \leqq .001$
** $p \leqq .05$

medical profession place much less importance on a secure career and a permanent position. The same holds true, to a lesser extent, for students who choose professions in the fields of Science or the Humanities. The negative, but relatively low, coefficient of non-higher education shows that students who choose jobs that do not require higher education also place less emphasis on security and permanence than the average student does.

A further set of regression analyses shifted all students who planned for careers in secondary education from their separate fields to that of education (see Ch. Four). These second regressions accentuated the trends apparent in the first and increased the size of the negative coefficients for the Sciences and the Humanities. We can thus infer that the choice of all types of educational careers is directed by consideration of future security.

The students' choice of occupations that belong to the fields of Medicine, Science and the Humanities is influenced by their high achievement at school (Table 3.11). The coefficient of Medicine is only slightly higher than that of Science. This grouping of fields is consistent with the pattern of university entrance exam requirements where, in the past, higher achieving students have tended to enter Medical School, the School of Science at the University, the Polytechnic and also the School of Philosophy. Thus there seems to be at work self-selection of students on achievement according to the relative difficulty of each faculty's entrance requirements. The choice of occupations that do not presuppose higher educational attainment is, as could be expected, inversely influenced to a significant degree by considerations of school achievement. Psacharopoulos and Soumelis (1979) clearly showed that among all the factors they used in order to explain further study plans, scholastic achievement dominated all others.

Students who plan for a medical profession or a science profession state to a significantly greater extent than other students that they are influenced by their special talents and interests (Table 3.12). As we observed earlier in this chapter, high ability was the strongest predictor of "individual talents and interests" as a basis on which occupations might be chosen. Students, however, who plan to enter the schools of social science seem to be inversely motivated by their individual talents and interests. Students from the various schools of economics, political science or law in their great majority ultimately seek a career in the public administration sector.

TABLE 3.12

Talents and Interests by Field: Standardized Regression Coefficients

Fields	B
Sciences	.118***
Non-Higher Education	- .043
Humanities	.059
Medicine	.131***
Social Sciences	- .086**
Military	.058
Education	.013
R^2 = .051	
N = 754	

*** $p \leqq 01$
** $p \leqq .05$

Tracing through this issue in relation to ability, one might ask whether those who intend to enter public administration are the least motivated by their individual talents and interests and if so, why.

In closing this section, we should note that, as indicated by the low R^2, tastes, preferences and reward values are to great extent an individual matter. Still, certain systematic and consistent differences emerged. Fields were distinctive in terms of the work values that underlie choices. Lyceum seniors selected occupations in the fields of Science or Medicine on the basis of their achievement at school and of their individual talents and interests, disregarding to a great extent security or permanence. Military careers appeal to students who value highly the prospective security, permanence and steadiness such an occupation affords, as well as a good future income. The prospect of security also has a strong appeal for students who plan for an educational career, who, however, place less value on high income. Students who select occupations in the domain of the Humanities are influenced by their high achievement at school, while they deemphasize considerations of a high income. They also

deemphasize security unless they intended to go into teaching at the secondary education level. Attitudes characterizing students who decide to enter the School of Social Science are rather neutral compared to the mean, except for the lower emphasis they place on individual talents and interests in making their career choice. Finally, choices of occupations that do not require higher education were related to a regard for a high future income, while low emphasis was placed on permanence and security as well as on present achievement at school.

3.4. Conclusions

In this study we have attempted to identify the occupational reward values that prevail in lyceum students' occupational choices. Findings suggest that in selecting a particular occupation students consider first their individual talents. However, other considerations, primarily future security and then the likelihood of getting a job, the quality of the working environment and income, also figure in students' decision making.

Furthermore, we tried to clarify whether socioeconomic status, gender, academic ability and urbanism account for differences in occupational values. Overall, such structural characteristics did not appear to influence occupational reward values in a major way. The trends which emerged were specific to each value dimension without forming a general pattern. Yet the prestige of the students' intended occupation, academic ability, gender, and to a very small extent urbanism, were found to influence certain occupational values.

We also attempted to identify the existence of an entrinsic/intrinsic value dimension which helped in sorting out the multiplicity of students' responses. This led to some tentative hypotheses, such as that girls are attracted by intrinsic occupation characteristics while the opposite holds for boys, and that low achieving students place more weight or certain extrinsic factors rather than on intrinsic ones.

Finally, our analyses contributed to the understanding of why youths opt for certain occupations by identifying the work values characterizing the various occupational fields.

The internalization of values is integrally connected with the given social context. During the past twenty years Greece has witnessed accelerated social changes which, among other things, have shaken the traditional ways of life. The process of modernization as a function of industrialization, increased urbanization, sudden tourist development, vast spread of mass media and consumerism greatly transformed the existing value structure. Roles, ways of behaving and values are no longer uniform and uniconceptual since they do not represent normative behavior and a cohesive value orientation. Young people who are part of today's complex society are faced with much more information to process and many more options to choose from. They thus need increasing differentiation in order to operate as self-organizing and self-regulating systems. The values influencing young people's choices take on special meaning.

Future research may focus on a deeper understanding of the values that underlie the intricate process of decision making in a attempt to elucidate the criteria on the basis of which youths set occupational goals and aims. However, the task of developing research on values that would capture the dialectical relationship between the individual and the environment remains largely unapproached, reflecting the state of the art in the social sciences. As a prerequisite, says Zavalloni (1980), it requires one to leave behind the epistemological tradition of social psychology.

CHAPTER FOUR*

THE DEVELOPMENT OF OCCUPATIONAL AND EDUCATIONAL DEMAND OVER TIME

4.0. Introduction

This chapter describes the structure of and changes in the occupational demand of lyceum students over a time period that covers from the end of lower secondary school to the end of upper secondary school. Some of the factors that might contribute to stability and change in occupational demand and in occupational choosing are discussed.

The compromise that develops over time between preferences for and expectations of an occupation refers here to differences in the types of occupations that youths aim for. This approach models key aspects of choice behavior and allows one to ask questions about occupational demand in a dynamic format. Specifically, we are interested in the amount of change versus stability, whether earlier occupational aspirations influence later ones, and whether change and stability are systematically related to type of career. Since demand for an occupation and for a field of study within higher education are by and large synonymous in Greece, a dynamic framework of horizontal differentiation in occupational expectations also allows one to describe and explore the development of educational demand over time.

In the following section the early educational choices of young people are examined, that is, how did the sample develop over the secondary school years in terms of educational standing. Section two treats aggregate changes in the distribution of occupational demand over time, section three treats change in individuals' occupational decisions, and the results are summarized and discussed in the final section.

* This chapter is contributed by Anastasia Kostakis.

4.1. Student Flows over the Secondary School Year

This section describes the development of a cohort of youths from the third, final year of gymnasium to the third, final year of lyceum. About 1,800 youths were traced over this period. This information is unique in the Greek context; it follows a specific cohort over time and includes data on what youths who are not in school are doing. Most available data are aggregate and cross-sectional; for example, figures on vocational versus academic schooling for a specific year include a rather mixed bag of youths of various ages and in various grades, whereas the data presented here describe the flow of a single cohort of youths as regards their education and work decisions and plans. In this way these data provide a more accurate picture of the current roles and options of Greek youths as they mature.

Of the surveyed youths who in 1981 were in the third grade of gymnasium, the great majority, 86%, were still in school three years later (1984). Most of the sample, 69%, continued their secondary studies at a general lyceum, and another 17% attended a technical/vocational lyceum. Only 3.7% of the sample had repeated a year in general lyceum, so that most students appear to progress normally through the upper secondary stream.

A closer look at secondary school drop-outs. This leaves a small but significant minority of 14% of the original sample that had dropped out of school by 1984[1]. As gymnasium students, 40% of this group of youths had not taken entrance examination for lyceum thus signalling their early intention to discontinue schooling. The remainder decision though seem to have reached this later on. Moreover, 68% of the drop-outs had stated at time 1 that they wanted at least to graduate from lyceum, so that for most of these youths dropping out of school means frustration of their plans and failure to realize their aspirations.

Of the youths who dropped out of school, 28% were reported to be working and 21% to have gotten married. This 21% is com-

1. This is probably a lowest estimate of the dropout rate since it is likely that there is a higher share of drop-outs among the cases with unknown status. The background and achievement characteristics of the cases with unknown status including those lost due to administrative problems (see Figure 2.1, Chapter Two) were much closer to values for the drop-outs than for the general lyceum sample.

TABLE 4.1

1984 Status of the Gymnasium Students Sample (1981)

Status	Absolute Frequency	Relative Frequency (%)	Adjusted Frequency (%)
Attends General Lyceum, Grade 3[a]	1002	.491	.568
Attends General Lyceum[b]	160	.078	.091
Attends General Lyceum, Grade 2[c]	66	.032	.037
Attends Technical Lyceum[d]	297	.145	.169
Quit School	161	.079	.091
Quit School and Working	45	.022	.025
Quit School and Married	34	.017	.019
Unknown	277	.136	-
Total	2042	100.0	100.0

a. All students attending a sample General Lyceum who were in Grade 3, including absent students.
b. All students attending a General Lyceum but not participating in the lyceum student survey.
c. All students attending a sampled General Lyceum who were in Grade 2.
d. Includes 46 surveyed students attending the Technical-Vocational Lycea at Grevena and Chrysoupolis, Kavala.

posed exclusively of females and represents 3.4% of the total sample of gymnasium girls. For the remaining drop-outs, information on their current activities was not available. Some conjectures about this group, however, are possible. First, unemployment is probably quite pervasive among them since the number of drop-outs whom we know are employed just about equals the number whom we know are married, and the latter is presumably a rather rare status for Greek teenagers. Second, unemployment is probably higher among males than females since girls exclusively made up the married category and social norms are such that girls are less likely to seek employment; for example, only female drop-outs were reported to be "just staying at home".

To summarize, the majority of Greek adolescents stay in school all the way through the secondary course; they enroll in academic schools nearly four times more often than in vocational schools; and for the minority who drop out, even fewer appear able to find jobs. Overall, as youths progress from early to late adolescence they show a heavy preference for the status and identity of "student". There is a sharp cleavage distinguishing students from non-students, with the roles of worker, wife and "stay-at-home" representing only a minority of 18-year-olds. This attachment to the student role — but also perhaps the aversion to an unemployed non-student status — seems likely to continue into the future: 92% of the lyceum youths plan on enrolling in a tertiary institute after graduation, and a first failure at the attempt to pass tertiary examinations would deter only 22% from another attempt. This latter group includes 9% who would go abroad directly, 2% who would enter a private school and 11% who would immediately try to find employment. The causes and consequences of these developments and attitudes are explored in part in the following pages.

4.2. Change in the Distribution of Occupational Demand

Table 4.2 presents the distribution of occupational preferences according to field of study at time 1, the final year of gymnasium, and at time 2, the final year of lyceum for the longitudinal sample (N = 922).[2]

The distribution of lyceum students' time 1 occupational preferences shows that occupations in the Science field were most in demand when these students were in gymnasium. About 16% of these gymnasium seniors — and a quarter (24.6%) of those youths who had an occupational preference — wanted to go into a science-related career. Occupations in Education and careers not requiring a higher education degree follow at 10.9% and 10.5% respectively. These three fields accounted for over half, 57%, of the total stated occupational preferences of students in the final year of gymnasium (see column 2). Occupations in the Humanities and in Medicine rank next, and respectively attract 9.5% and 7.7% of gymnasium seniors. Lastly, and least popular, rank careers in the social sciences and the military that enjoy the preferences of only 5.6% and 5.4%, respectively, of the gymnasium students.

It should be noted that a very large share of the sample, 33%, did not state an occupational preference at time 1. Many gymnasium seniors thus appear to be deferring their occupational aspirations and to be uncommitted to a specific field. Consequently, the most obvious difference between the earlier occupational aspirations

2. The most representative occupations of each field are briefly listed below. For the Sciences the most frequently named occupations are mathematician (21%), physicist (19%), chemist (11%) and mechanical engineer (8%). For Medicine the largest share goes to physician (79%), followed by pharmacist (8%). In the Humanities we have philologist (45%), foreign language teacher (32%) and archaeologist (17%). Economists are first in the Social Sciences (34%), followed by civil servant/civil service administrator at 17% (intending to enroll in Economics and related faculties), sociologists at 14%, and lawyers at 13%. For Education we have primary school teacher (33%), physical education teacher (27%), pre-primary school teacher (24%), and generic secondary school teacher (8%). Secondary school teachers citing a specific discipline are not included in Education but are classified by their discipline in order better to reflect and conform to the structure of higher education. The Military refers to armed forces officer (51%) and air force pilot (16%). Non-Higher Education is a relatively small category, but is more heterogenous than the others. The most frequently named occupations of this category are government office clerk (15%), followed by commercial artist (8%), actor (8%) and secretary (8%).

TABLE 4.2

Occupational Preferences by Field at Time 1 (Gymnasium) and Time 2 (Lyceum) for the Sample of Lyceum Seniors (n = 922)

	Time 1			Time 2		Difference T_2- T_1	Rate of Change T_2 to T_1
Field	Relative % (N) (1)	Adjusted % (2)	Rank (3)	Relative % (N) (4)	Rank (5)	(4)-(1) (6)	(1):(1) (7)
Science	16.3 (150)	24.6	1	17.8 (165)	3	+ 1.5	+ 9.3
Medicine	7.7 (71)	11.6	5	8.2 (76)	5	+ 5	+ 7
Humanities	9.5 (88)	14.4	4	8.2 (78)	5	- 1.3	- 15.9
Social Science	5.7 (53)	8.6	7	21.3 (196)	2	+ 15.6	+269.8
Education	10.9 (100)	16.6	2	30.7 (283)	1	+19.8	+181.6
Military	5.4 (50)	8.2	6	5.3 (46)	7	- 4	- .8
Non-Higher Education	10.5 (97)	5.9	3	8.5 (78)	4	- 2.0	- 19.0
Don't Know	33.5 (309)	-		0 0	-		

of gymnasium students and their later occupational aspirations as lyceum students is that the "don't know" category has emptied out. Of these late-deciders who have shifted by the senior lyceum year to a specific field, most seem to be attracted to Education and Non-Higher Education occupations. These fields have the largest share of late-deciders in their ranks (43% and 41%).[3]

For lyceum students' the most popular career outlet is *Education.* Over 30% of the lyceum students want to pursue such careers. Education was also popular at time 1 but demand at time 2 increases twofold over the earlier figure (+180%). Moreover, Table 4.2 actually gives a "lowest" estimate of the pulling power of the education sector since most secondary school teachers are classified under their discipline. If one grouped all responses specifically citing a teaching career under education, then demand for education rises from 24% at time 1 to 42% at time 2. Interestingly, of the students choosing the occupation of mathematician at time 1, 41% specifically connected it with a teaching career, but at time 2 nearly twice as many, 77%, did so. Philologists identifying with teaching are 50%, at time 1 and 76% at time 2. Furthermore, at time 1 only the disciplines of mathematics, philology and foreign literature were cited as teaching careers, but at time 2, chemistry, physics, physics/math, sociology, archaeology, and psychology are added to the list. Thus, despite their varied background of interests and aspirations, as time passes an increasing number of youths consider teaching as their single most likely and viable career option.

Careers in the *Social Sciences* rank second after education and attract 21% of lyceum students. The growth in demand for social science occupations, which nearly triples (+269%), is quite remarkable since this field ranked next to last in popularity at time 1. Proportionately more individuals were drawn to the social sciences than to any other field, and this signals a dramatic shift in the priorities of young people. Streaming in the lyceum undoubtedly contributes to this sudden increase since the fourth (economics) stream has the highest enrollment rates — about 40% in this sample and 43.3% nationwide (1985).

3. As this report was being written, university examinations were uncoupled from lyceum diploma examinations. According to our arguments, this should increase demand for the non-higher education routes.

Science occupations, at a slightly lower 17.8%, rank third in lyceum students preferences — down from first for gymnasium students. Demand for these careers shows a tiny bit of growth, 1.5%, as late deciders move in (compare columm 4, Table 4.2 to columm 2, Table C.1, Appendix C).

In comparison, demand for the next most popular field, *Non-Higher education* occupations, is about half that for science careers. Demand for occupations not requiring a higher education degree drops from 15.9% at the first time period to 8.5% at the second time period and from third ranked for gymnasium students to fourth ranked for lyceum students. It is worth mentioning that demand for Non-Higher Education occupations is much higher among the full sample of gymnasium students than among the longitudinal sample that was traced into general lyceum (28% versus 16%). In contrast, demand for the other fields is very similar for both samples (see Table C.2, Appendix C). It is possible that gymnasium youths opting for non-higher education careers frequently either (a) drop out of school, or (b) enter technical lycea. Youths who later dropped out of school constituted 24% of the gymnasium students who checked the non-higher education category. Of all drop-outs, 36.6% had no occupational preference at time 1 and 38% wanted to go into a non-higher education occupation. In contrast, among a small sample of technical lycea students, demand for non-higher education occupations stands at a paltry 6% (Table C.3, Appendix C). Thus it is likely that the decrease in demand for non-higher education occupations is more the product of attending upper secondary school in general and less the result of attending any specific type of lyceum.[4]

Rates of demand among lyceum students for careers in the next ranked fields, *Medicine* and the *Humanities,* both stand at 8.2%. These figures are rather similar to those recorded earlier in gymnasium, although demand for the Humanities, has dropped slightly by 16%. Finally, *Military* careers rank last — down from second to last — with a 5.3% demand rate which approximates the earlier figure for gymnasium students.

4. Technical lycea students, however, were much more likely to opt for enrolling in a higher Technological Educational Institute than were general lycea students (27% versus 4%).

By comparing increases and decreases over time in rates of aggregate demand for occupations, one can also trace the development of educational demand. First and foremost, as youths progress from gymnasium to lyceum, the Education and the Social Science Faculties and Schools witness a tremendous increase of demand. These two branches captured the preferences of over half the lyceum sample. Demand for Science Faculties also stands out as a major option, and attracts 17.8% of the students — while the TEI share is only an estimated 2%. Thus the Greek case does not fall into the pattern of "fear of science" often observed in other countries (Marceau, 1977:5). However, the increase for the science field is negligible compared to that for the previous two fields of study (9.3% versus 270% for Social Science and 180% for Education). Excluding Medicine, all the other fields of study decline in popularity, and this is most acute for the category of non-higher education which drops by 19%. Thus the primary loser is the non-higher education route. Whereas within the higher education sector, the tendency is towards the more instrumental fields such as Education and Social Science (primarily business) that have a clear professional orientation.

These patterns of change in aspirations are accentuated among youths who had an occupational preference at both time periods, that is, excluding late deciders (see Table C.1, Appendix C). Education and Social Science fields grow by 59% and 160% respectively by drawing in individuals from other fields, so that other fields show a relative decline in demand. The sharpest drop is for Non-Higher Education, 52%, followed by the military at 40% lower. Preferences for Humanities drop by about a third (32%) and for Science by about a quarter (24%), while preferences for Medicine are relatively stable, dropping only 13%. Thus the general pattern of "compromise" is for career aspirations to shift concurrently away from the lowest status Non-Higher Education field and the Military, and away from the higher prestige and more selective university faculties to the benefit of less selective faculties, such as education and social science.

4.3. Change in Individual Occupational Choices

The above developments refer to aggregate trends and movements. Whether and where individuals' occupational aspirations are

stable over time is an altogether separate question. This section examines such changes at the individual level and discusses their implications, first in regard to changes among specific occupations and second in regard to changes among occupational fields.

4.3.1. Some Methodological Notes

Adolescents are observed at two time points. We want to know whether these youths make the same choice at time 1 and time 2, or whether they change their minds between time 1 and time 2. A first-order Markov chain model is assumed where the probability of being in a particular state at time 2 (i.e. the x choice) is a function of one's location at time 1. In regard to our data, one attempts to describe the probability of making the x occupational choice at time 2 dependent on the x choice at time 1. To examine stability and change in individual occupational choices in relation to field further requires a Markov model for heterogeneous strata (Markus, 1982:15) where the strata are the various fields. Transition rates can then vary and be estimated separately for each field. A final concept useful for examining individual change over time is the "odds-ratio". An odds is "the ratio between the frequency of being in one category and the frequency of not being in that category" (Knoke and Burke, 1983:9). Conditional odds are the chances of being in category x versus not being in category x given a particular level of another variable. The odds ratio then of two conditional odds is interpreted as the odds on being in category x for members of group k versus the odds on being in category x for all non-members of group k.

To give a concrete example, a change odds ratio of occupational choice summarizes the propensity of youths in field x to change their minds versus keeping the same occupational preference as compared to youths in all other fields. The ratio of changes to no changes for each field is divided by the ratio of changes to no changes for all other fields. An odds ratio higher than 1 indicates that there is covariation between the likelihood of changing and being in field x (compared to all other fields). An odds ratio lower than 1 indicates negative covariation, that there is less likelihood of changing for those in field x. An odds ratio of 1 indicates than no relationship exists (Knoke and Burke, 1983:11).

TABLE 4.3

Transition Rates for Individual Occupational Choices Between Time 1 and Time 2 by Field and Conditional Odds Ratios on Change (N=613)[a]

Field	Chose at T_2: Same Occupation %	Different Occupation %	Change Odds-Ratio[b]
Science	13.9	86.1	1.50
Medicine	45.2	54.8	.22
Humanities	25.0	75.0	.64
Social Sciences	6.6	93.4	4.00
Education	19.1	80.9	.92
Military	23.3	76.7	.74
Non-Higher Education	11.9	88.1	1.76
Column Totals	18.4	81.6	-

a. Includes only those lyceum students who had an occupational preference at time 1. See also the note to Table C.1, Appendix C.

b. The odds on changing versus not changing for someone in field x compared to individuals in all other fields.

4.3.2. Change in Choice of a Specific Occupation

Table 4.3 breaks down stability of individual occupational choices by occupational field at time 2. It provides information on how many of the 18-year-olds in each field chose the same or a different occupation from that of three years ago. Overall, only 18% of the students with a preference at both time periods continue to want the same occupation at time 2 as at time 1, whereas 82% have changed their minds. The stability of occupation choosing appears rather low, however this varies markedly according to field.

Medicine stands out as the most stable field. Nearly half of the lyceum students who chose an occupation in this field chose the same occupation in gymnasium. Diametrically opposed is Social Science as the most unstable field: only 7% of youths choosing a

Social Science occupation at time 2 had the same occupational preference at time 1. Science and Non-Higher Education have relatively low rates of stability of specific occupational choices, 13.9% and 11.9% respectively. The Humanities and the Military, on the other hand, form a non-orthodox couple with similar, relatively higher rates of stability of occupational choices at about 25% each. The rate of stability for Education is 19.1% which is close to the average.

The change odds ratios of Table 4.3 summarize these trends. The Social Sciences have the highest change odds ratio: students in the Social Sciences at time 2 were four times as likely to have chosen a different occupation from their time 1 choice as were students in all other fields. Lyceum youths choosing a career in Science or Non-Higher Education were about one and a half times more likely to have changed occupational preferences than were their peers. Education has an odds ratio close to one, so that for youths in this field there is no substantial difference between propensity to change versus stability. The Humanities and the Military have odds ratios lower than one, indicating that youths in these fields, and particularly in the Humanities, tend to stick more to their earlier occupational choices than their peers do. Medicine has an exceptionally low odds ratio. Youths opting for Medicine at time 2 were much more likely than their peers to have decided early on their specific occupational goals.

4.3.3. Change in Choice of Fields Over Time

A different way to look at changes in occupational expectations is to examine to what degree field identification rather than occupational identification changes. Here a shift between different types of engineering, or between archaeologist and philologist, is ignored in order to focus on change between fields of study. This is a more critical criterion since change of fields involves transfers between quite different types of knowledge that have stronger barriers between them than do individual but often related occupations.

As might be expected, there is less field mobility than occupational mobility. Only 18% of the youths stayed in the same occupation at both time periods, but 38% stayed within the same field.

TABLE 4.4

Transition Rates for Individual Field Choice
Between Time 1 and Time 2 (N=613)

Field	Choose at T_2: Same Field %	Different Field %	Change Odds-Ratio[a]
Sciences	57.4	42.6	.39
Medicine	58.1	41.9	.42
Humanities	48.3	51.7	.64
Social Sciences	17.6	82.4	3.90
Education	33.3	66.7	1.38
Military	50.0	50.0	.62
Non-Higher Education	27.1	72.9	1.53
Column Totals	38.2	61.8	-

a. The odds on choosing the same field versus changing field at time 2 for someone in field x compared to individuals in all other fields.

The remaining 62% had cited a different field at time 2 from the one they originally cited at time 1. Overall then, field choice also appears unstable with this rate varying dramatically for specific fields.

According to Table 4.4, slightly over half the students choosing Science and Medicine at time 2, and around half the students choosing Humanities and the Military had stated the same preference at time 1. For the fields of Education and Non-Higher Education, the figure drops to about a third of their candidates. The Social Sciences exhibit the least field stability, with only 18% of their candidates having originally declared this field at time 1. The odds ratios further indicate that, compared to their peers, lyceum youths choosing Social Science were about four times (3.9) more likely to have been in another field at time 1. The same odds ratio was noted for Social Science in regard to stability of occupational choice.

The Non-Higher Education and Education fields have odds ratios somewhat greater than one (1.59 and 1.38 respectively), which indicate a greater likelihood for the lyceum students choosing these fields to be new entrants, that is, of having chosen a different field at time 1. Education has a much higher ratio of field change than of occupational change. For the Non-Higher Education stream the odds ratios indicate that the movement away from Non-Higher Education is partly offset by movement towards it. Whereas overall demand for Non-Higher Education dropped from time 1 to time 2, the positive odds ratio implies that there was a concurrent inflow of youths moving out of other fields and moving into this field for the first time in lyceum.

Each of the remaining fields shows a greater relative propensity for field stability over field change. The least change is found among candidates for the Sciences (.39), followed by Medicine (.49). The high stability of field choice for Science contrasts markedly with its high instability of occupational choice. Medicine exhibits somewhat less field stability than it does for occupational choice, which probably reflects the predominance of the single occupation, physician, within the category. The Humanities and the Military follow with positive but somewhat lower relative odds of remaining in the field versus transferring (.64 and .62).

4.4. Discussion

One might have expected that over time change between occupational fields would be a relatively random process since time 1, gymnasium termination, is such an early point in the career planning process. To the contrary, occupational fields form two broad but distinct groups with regard to change. One is the more stable group which consists of Science, Medicine, the Humanities and the Military. Relatively more students choosing these fields at time 2 (lyceum termination) had also preferred them at time 1 (gymnasium termination). The other is the less stable group comprised of the Social Sciences, Education and Non-Higher Education. Fewer 18-year-olds had chosen them at both time periods compared to new entrants at the latter time period.

The patterns of change in specific occupational choices, and of change between fields serve to define the recruitment characteristics of fields: their stability, attractiveness and permeability. Science, for example, has a low occupational stability ratio with a particularly high field stability ratio and consequently low rates of intra-field recruitment. It thus appears that youngsters make up their minds to concentrate on Science rather early, though within this field they rather freely change the particular occupation they want to pursue. Dimitropoulos et al. also observed that lyceum students in the first, scientific, stream were satisfied on the whole with their choice of stream but tended to report less satisfaction with their choice of a specific occupation (1985:75).

In contrast, Education had an average occupational stability ratio and a high field instability ratio. This implies that, on the one hand, a significant number of youngsters decide on the occupation of educator early in the process of career choice so that it is a high commitment field, while, on the other hand, the field of education draws quite a number of new entrants so that it is concurrently a permeable field. Indeed, this permeability extends to late deciders as well (no preference at time 1), of whom the greatest share moves into Education at time 2.

The field with both very low occupational commitment and high permeability is the Social Sciences. The Social Sciences, to a much greater extent than any other field, recruit lyceum youths who had previously wanted to go into another field. Therefore, although demand for both Education and the Social Sciences increased dramatically between time 1 and time 2, it is the Social Sciences which are perceived as the field easiest to enter at a later time period. The Social Sciences thus appear to absorb much residual or marginal occupation demand. Related findings in a study of Salonica lyceum students support this interpretation: students in the fourth, economics,stream had the highest rate of indecision regarding occupational choice (Dimitropoulos et al., 1985:75). It is interesting to note that in this study only nine youths choosing the Social Sciences at both times also chose the same occupation at both times — three of whom wanted to become diplomats.

Non-Higher Education occupations, despite the drop in demand for them at time 2, nevertheless attract a number of youths from other fields. Since Non-Higher Education has comparatively low occupational and field stability ratios, this field tends to lose its old

time 1 adherents while also attracting new entrants from other fields at time 2. Non-Higher Education thus also appears to absorb residual occupational demand.

The Humanities and the Military show opposite recruitment patterns to those described above. These two fields show somewhat higher than average ratios of both occupational and field stability. Compared to the other fields, they are less permeable fields: they tend to keep their old adherents more than they tend to recruit new entrants. The least permeable field, however, is Medicine. It displays strikingly higher rates of stability in occupational and field choice. Thus youths who want to go into Medicine, and who for the most part want to be physicians, become committed to this career path early. Most have set their sights on Medicine by the time they are 15 years old.

Many of the observed patterns of change in demand rates and of change in individual decisions can be directly related to institutional criteria such as the structure of university examinations and streaming in lyceum. Careers in the Social Sciences go from last among gymnasium students' preferences to almost top of the list among lyceum students' preferences while also drawing in a higher percentage of youths who had a different field choice at time 1. The comparatively looser numerus clausus restrictions for the Social Sciences faculties probably act as a major accelerating force and account for the tremendous growth in demand for this field. It is a telling bit of evidence that candidates for the Social Sciences were the only category of lyceum students to score negatively on the extent to which their own talents and interests guided their career choice.

Careers in Education similarly undergo a substantial growth of demand, even though this set of occupational options was already popular among gymnasium students. Some of these youths, as we have seen, have wanted to become teachers for a long time and in this sense are committed to this career, while many others decide on it much later and are drawn in from other fields and from previously undecided students. This flexibility can be traced in part to the fact that, in contrast to other fields, entrance examinations for Education schools are open to students from all four lyceum streams.

The shift toward the less restricted Education and Social Sciences faculties is also influenced by employment prospects and, in particular, public sector hiring policies. The public sector is the largest

employer of university graduates (Tsoukalas, 1987) and the mantle of civil servant is highly coveted in Greece (Kanellopoulos, 1983, see also Chapter Three). Nearly one-fifth of all Social Science candidates stated that their primary occupational goal was to become a civil servant while their specific occupational aspiration was subordinate to that goal. Education candidates seem to particularly value factors which are related to public sector employment. They placed a significantly higher value on the prospect of job security in defining their occupational plans, and they deemphasized the prospect of a high future income (Ch. Three). Another incentive for Education candidates is that in recent years the waiting period for a permanent teaching post has been relatively short — especially compared to that for secondary level posts. These types of employment prospects and preferences probably have a strong pulling effect for the marginal decider.

Careers outside the Higher Education stream are of course outside the steeplechase of university entrance exams, and this might be one reason behind their decline in popularity since the four major streams require that one take university entrance examinations[5]. Without a strong commitment to a Non-Higher Education career, this arrangement shifts the balance to at least an attempt at the higher education route. Probably many of the new entrants to Non-Higher Education (most lyceum students choosing an occupation outside the higher education stream did so for the first time in lyceum) are students who consider that their chances of passing exams for university are very poor. In a study of demand for higher education, not feeling capable was the major reason given by students planning to discontinue their education (Soumelis, 1979:292); notably, girls gave this reason much more often than boys did, while overall, poor grades were not a very dissuasive factor. Among our sample of lyceum seniors, those intending to enter an occupation outside of higher education placed less emphasis on school achievement (see Ch. Three).

The remaining fields, Science, Medicine, the Humanities and the Military, all tended to have much more stable recruitment char-

5. As this report was being written, university examinations were uncoupled from lyceum diploma examinations. According to our arguments, this should increase demand for the Non-Higher education route.

acteristics than did the above fields. Around half, more of less, of the grade twelve students who plan to go into these fields had held the same aspirations in grade nine. Streaming into the science, medical and literature tracks, which begins in grade twelve and determines tertiary schooling options, probably accentuates this trend as students anticipate by at least grade nine the rigorous competition for entry into the corresponding university faculties. That is, the value of more and earlier preparation is increased as entry requirements become more difficult and more visible through streaming. Indeed, candidates for the science, medicine and literature streams, all placed a significantly higher value on school achievement in defining their occupational plans than did their peers. Thus a large share of youngsters make occupational choices by the end of grade nine which anticipate and reflect the division into streams and the structure of university competition. The fact that demand for Medicine and Humanities did not grow from the gymnasium years, probably reflects an awareness of the stiff competition for a university place.

Science, however, retains and increases its popularity from the gymnasium years and institutional constraints are once more pertinent. Of the three aforementioned streams, the science stream offers by far the most options within the tertiary education structure. Thus an important benefit of enrolling in this stream is that the science track keeps the most educational and career options open for the future. And, as we have seen, science candidates respond by tending to stay within the general field while also frequently changing their specific occupational choices.

It is apparent that in the series of compromises that take place over time between occupational preferences and expectations, institutional constraints come into play rather early to affect occupational choosing. Young people develop strategies, sometimes quite long-rerm ones, in order to deal with these constraints. In the concluding chapter some of the policy implications and issues raised by the patterns of occupational choosing that we have observed will be discussed.

CHAPTER FIVE*

MAJOR OCCUPATIONS

5.1. Major occupations: A Narrow Spectrum of Viable Career Options

In the previous chapter we examined how general career orientations develop over time for a set of individuals as they mature and move from gymnasium to lyceum. In this chapter we deal with occupational choosing at a more concrete and specific level and examine change and stability in demand for the specific occupations to which young people aspire.

Table 5.1 below presents the fifteen occupations most frequently, chosen by youths attending grade three of gymnasium. Out of the 105 occupations mentioned by gymnasium students, over half the sample limited themselves to the handful of options listed in Table 5.1.[1] These fifteen occupations account for 59% of total demand. Of the 41% left, half is accounted for by another 24 occupations, and the other half is evenly divided among a remaining 66 occupations. Viable options thus appear constrained to a very narrow set of occupational futures. In the following sections we describe these options and follow their development from gymnasium to lyceum. Certain themes which seem pertinent to stability and change in occupational demand are discussed.

5.2. Results of the Analyses

5.2.1. Major Occupations for Gymnasium Students

For gymnasium students, philolologist is the occupation most

* This chapter is contributed by Anastasia Kostakis.

1. Fifteen occupations are highlighted because this number constituted a natural cut-off point: thereafter demand becomes much more dispersed over many occupations.

TABLE 5.1

The Fifteen Occupations Most Frequently Chosen by Students in the Third Year of Gymnasium (N=1309)[a]

Rank	Occupation	N	%
1.	Philologist	110	8
2.	Physical Education Teacher	92	7
3.	Doctor	91	7
4.	Pre-Primary Teacher	78	6
5.	Mathematician	49	4
5.	Physicist[b]	49	4
6.	Primary Teacher	43	3
7.	Armed Forces Officer	39	3
7.	Civil Service Administrator/Clerk	39	3
8.	Lawyer	34	3
9.	Electrician	33	3
10.	Civil Engineer	31	2
10.	Policeman	31	2
11.	Pilot	25	2
12.	Architect	24	2
	Subtotal	768	59

a. Students responding "Don't Know" are excluded.

b. Including "physiko-mathimatikos".

c. This category includes individuals aspiring to the civil service both with and without higher education credentials, i.e. both administrators and clerks.

in demand at 8% followed by teacher and doctor with 7% each. Demand for the occupations of pre-primary teacher, mathematician and physicist stands at 6% for the former and 4% for the latter two. Primary school teacher, armed forces officer, civil servant, lawyer and electrician each get a 3% share. Civil service administrator is thus already a major career goal for 15-year-olds even though, given their age, one might have expected more "adventurous" occupational aspirations. Lastly, civil engineer, policeman, airplane pilot and architect each account for 2% of the occupational choice distribution.

Several observations seem pertinent. First, even within the handful of careers that make up this list of major occupations, demand is heavily skewed towards the few top-ranked careers. Second, traditional and white collar careers predominate in this listing — with the exceptions of electrician and policeman. Third, the major share of demand refers to occupations within the education sector. And finally, this listing documents the overriding preference among Greek youths, even at relatively young ages, for those occupations belonging to the public sector.

5.2.2. A Refocusing of Occupational Outlooks in Lyceum

Table 5.2 refers to the occupational choices of students in the last year of lyceum. The occupational priorities of lyceum students appear to differ from those of gymnasium students. Bearing in mind that the time 2 sample is rather more select since it contains only those students completing the full secondary academic course, some change due to sample differences is to be expected (see Chapter Two).[2] However, the direction of this change is not toward more selective occupations but tends principally toward relatively lower status occupations.

The increase in demand for primary teacher and economist. Demand for the occupation of philologist drops sharply, while it increases dramatically for primary teacher supplanting the former as the most preferred occupation. Focusing on just these two careers for the moment, they present some intriguing similarities and differences. They are both occupations which are predominantly preferred by women, and they are both in the secure public sector. Of the two, philologist has the higher occupational prestige; requires higher university entrance examination scores; and has a much longer waiting, or unemployment, period before graduates can be absorbed in-

2. Appendix C provides a frequency distribution of ocuppational choices for the time 2 sample matched to the time 1 sample: that is, all those gymnasium students who did not participate in the time 2 survey (n=1120) and all lyceum students who did not have an occupational preference at time 1 (n=309) are excluded from the listing. Differences from the distributions for the full gymnasium sample (Table 5.1) and from those for the full lyceum sample (Table 5.2) are few and minimal and are discussed in the text.

TABLE 5.2

The Fifteen Occupations Most Frequently Chosen by Students in the Third Year of Lyceum (N=923)

Rank	Occupation	N	%	Rank at Time 1[a]
1.	Primary Teacher	99	11	6
2.	Physical Education Teacher	82	9	2
3.	Pre-Primary Teacher	74	8	4
4.	Economist	68	7	-
5.	Doctor	60	7	3
6.	Service Administrator/Clerk	41	4	7
7.	Mathematician	34	4	5
7.	Philologist	34	4	1
8.	Physicist	32	3	5
9.	Sociologist	28	3	-
10.	Secondary Teacher	25	3	-
10.	Armed Forces Officer	25	3	7
11.	Foreign Language Teacher	24	2	-
12.	Computer Analyst	18	2	-
12.	Lawyer	18	2	8
	Subtotal	662	72%	

a. Rank among the major occupations listed at time 1. A blank means that the occupation did not appear among the fifteen most frequently chosen by gymnasium students.

to the public education system. Thus primary teachers have an easier route to a secure job than philologists do and this likely contributes to the reversal of demand for the two careers.

The greatest rate of increase in demand, however, is for the occupation of economist. At the earlier period, gymnasium students scarcely recognized economist as a career — only nine students stated a preference for it — yet by the final year of lyceum its importance had multiplied to rank fourth in demand. Despite this sudden growth, or perhaps because of it, economist seems to be a vaguely understood career. Student responses frequently only listed the schools of economics or industrial studies rather than citing a spe-

cific job title. Furthermore, distinct specializations such as financial analyst or marketing were not mentioned, probably because they do not correspond to distinct departments within the higher education structure.

Of the remaining occupations, demand for the occupation of physical education teacher continues to be high and even increases slightly among lyceum students. The popularity of physical education might reflect the desire for a non-academic outlet within the school setting. Pre-primary teacher follows, with a slightly higher demand among lyceum students than among gymnasium students. Doctor, with a slightly lower demand, and civil servant retain their positions among the most preferred occupations.

The appearance of new careers and the disappearance of others. Several occupations that were not on the list for the gymnasium sample make their appearance as major options for lyceum students: secondary school teacher (no field specified), sociologist, foreign language teacher and computer analyst. Of these only computer analyst is a totally new occupation. It is the only occupation occurring with any frequency at time 2 which had not been mentioned even once by gymnasium students.

The above occupations replace electrician, policeman, pilot, civil engineer and architect which have dropped out of the lyceum students' list of major careers. The elimination of the first two probably has to do with the more select nature of the time 2 sample, since these two occupations were also missing from the time 1 matched sample listing (see Table C.4, Appendix C). The elimination, however, of architect and civil engineer from the list, along with the sharp drop in demand for philologist and lawyer, implies that youths are acute in their response to the current high unemployment rates for these professions. Comparisons of students leaving these occupations at time 2 vis-à-vis those students choosing them for the first time at time 2 are suggestive. Youths moving out of the occupations of philologist, architect and lawyer placed significantly higher emphasis on considerations of market demand and high future income than did those youths moving in ($p < .01$).[3] Sig-

3. Reffering back to the comparison between philologist and primary school teacher candidates, where it was suggested that the reversal in demand for these careers might relate to the fact that the former is a much more academically selective field. In fact, the time 2 movers-in to philology have significantly higher achievement scores than those moving out.

nificant contrasts, however, did not occur for those aspiring to a career in civil engineering.

The decline in the importance of these careers for youths constitutes a significant reversal of the status quo. In the historical development of higher education, the law and theoretical faculties have overshadowed enrollments in other areas (OECD, 1974; Wald, 1964). Moreover, these professions — perhaps less so for philologist which is a woman's career — have for years represented the pinnacle of professional attainment in Greece in terms of status, income and influence.

5.2.3. A Summary of Trends in Demand for Individual Occupations

The occupational aspirations of lyceum students are even more constrained than those of gymnasium students to traditional occupations —with the notable exception of computer analyst — to white collar occupations and to those related to public sector employment. Occupational choices in the later time period are also less varied than in the first time period. The fifteen most frequently selected occupations account for 72% of total demand at time 2, up from 59% at the earlier time period. There appears to be a general realignment of occupational aspirations over time. As major career options become more homogeneously restricted to the professional category, they also increasingly focus on the lower status occupations within that category. At an individual level, the time 2 career choice tends to be of significantly lower prestige than the time 1 choice ($t = 2.65$, $p < .001$).

5.3. Discussion

Locating Occupational Demand in the Context of Higher Education. The above trends are accentuated within the top five ranked occupations: from time 1 to time 2, demand climbs from 32% to 42% and the mean of individual occupational prestige falls from 66.1 to 60.8. Excluding physician, the other four most highly ranked occupations (primary school teacher, physical education teacher, pre-primary teacher and economist) all refer to less selective university faculties that are believed to be easier to get into, in terms eith-

er of grades or of specialized preparation. Thus both the previous analyses of change in occupational fields and the present analysis of demand for individual occupations seem to support the interpretation that institutional constraints impel senior year students to shift their occupational preferences to areas corresponding to less selective schools. A key example is the increase in demand for primary teacher compared to the decrease in demand for philologist.

Of the tertiary schools corresponding to the top five occupations, the various economics and business schools have the lowest entry requirements, and perhaps it is just this that accounts for what we have repeatedly referred to as the ambiguity of students towards the occupation of economist. With the lowest entrance requirements, these faculties often serve as a repository educational outlet eliciting only a vague occupational commitment on the part of many candidates. For example, candidates for the social sciences scored negatively on the extent to which career choice was guided by their talents and interests, and proportionately more candidates for social science had switched fields and occupations.

Institutional constraints also seem to maintain an artificial level of demand/supply for those faculties which were historically very selective. If one applies the occupational demand rates observed in this study to the corresponding faculty enrollment rates, the highest rate of satisfaction of individual demand occurs for the occupations of lawyer and of civil engineer — around 65% (see Table C.5, Appendix C). That is, the supply of university places covers projected occupational demand up to 65%. This suggests that the structure of higher education is not able to adequately respond to changing market conditions, and often serves to distort and inflate social demand.

The law faculties are historically among the oldest and largest schools in Greece and have produced some of the most influential public figures. By the same token, the civil engineering schools in the past, and especially during the 60s, occupied the pinnacle of the technological stream and also have their share of politically powerful graduates. That these faculties have maintained their size in the face of declining demand and retained the hypothetical oversupply of places raises the question of whether position in the academic and social hierarchy is more important than is demand in determining the supply of academic places.

A final point is that these higher education institutional con-

straints can often result in a passive rather than an active weighting to the compromise of occupational choosing. Without particularly understanding an occupation or preferring it on specific grounds, a youth chooses what appears to be the easiest, surest, or "best chance" outlet. Such passive compromises and choices might be more prevalent in contexts such as the Greek one, where on the one hand there is a generalized push towards higher education, while on the other, entry and course offerings are quite restricted. Unfortunately, a passive rather than an active orientation to school or occupation has enduring consequences which bear negatively on students' own evaluations of their tertiary educational experiences (Karmas, Dragonas and Kostakis, 1987).

Occupational Demand and the Public Sector. The occupational expectations of lyceum students converge primarily on the public sector, and this is underscored by the emphasis they place on job security (Ch. Three). Of the major time 2 occupations, the least restricted to the public sector are computer analyst, lawyer, economist and doctor, since they have options either in the private sector or in self-employment. Other occupations, such as civil service administrator/clerk and military officer, are possible only within the public sector. Despite these variations, 72.7% of lyceum students stated that they would seek a job within the public sector.

Tsoukalas (1983) has explored some of the social and political implications of the state as employer in Greece with particular reference to the latter's symbiosis with higher education. Our findings on the occupational preferences of both older adolescents, and even of younger adolescents, testify to the primary role this sector plays in defining youths' expectations for their future. The public sector is so predominant that it seems to function less as one alternative out of many and more as the norm against which other options are weighted.

Feedback into the Educational System. The salience of the public sector for youths essentially arises from the demand for the single career path of educator. Besides those occupations exclusively identified with teaching, most of the major occupations listed by lyceum students eventually lead into the Greek secondary school system. Along with potential education sector careers, the total education share increases from 32% at time 1 to 47% at time 2. Even

subtracting a few percentage points for those science disciplines that also have non-education outlets does not diminish the inordinate preference for education. Anecdotally, many aspiring sociologists rationalized their choice by explaining that since this subject had only recently been introduced into the secondary curriculum, this would guarantee them a job in the high schools by the time they finished their studies. Perhaps the most successful undertaking of the General Lyceum is just that of reproducing itself. Moreover, even the Technical Lycea even seem to support this general picture: among a small sample of technical lyceum students, 32% wanted to become technologists of some sort and 50% looked toward a job within the education sector (Table C.3, Appendix C).

Thus the school system acts as a major frame of reference when students make projections of their futures; it is, however, a referent which necessarily limits the range and scope of occupational decision making. Within a context where the public sector dominates, the crux of the problem lies in the tangibility of the school image coupled with the accessibility of the school system compared to other employment spheres.

Tracing educational flows (Chapter Four) and the development of occupational aspirations has emphasized that many youths desire to remain in the educational system as long as possible: on the one hand as students, and on the other as teachers who feed back into the educational system. Education not only serves as the major means of social mobility — a theme frequently cited for developing countries — but also as a major end of social mobility. For a great number of youths the education sector appears to autonomously define the process of status attainment.

Occupational Expectations and the Family Unit. A sphere which should be a substantial referent but which does not seem to limit youths' options to similar occupations is that of the family. Only 3.4% of the sample stated that their parents wanted them to go into the family business up on completion of schooling, and cross-listing offspring's preferences with parents ' occupations showed that at most 4% chose an occupation somewhat related to that of their parents.[4] The only major occupation at time 2 common

4. This cross-listing was conducted on 25% of the total time 2 sample who had said that their occupational choice was influenced by the prospect of entry into an already existing, established job.

to both offspring and parents is that of "civil service administrator" while farmer, the single largest adult occupational category, attracted only three students.

Fathers (of the lyceum sample) with a professional or related occupation made up 6% of the total, but demand for these sorts of occupations is over *twelve times* higher among offspring. Moreover, matching occupational sectors, young people choose higher prestige occupations: compared to the parental sample, offspring tend to choose the higher status occupations from each sector and this occupational upgrading is most marked for the least prestigious occupational groups (Appendix E, Figure 1).[5] While most of the adult sample was in the lower and lower middle class category, their children clearly aspire to higher status. Mean occupational prestige for the adult sample is 42, but it is 62 for the occupational aspirations of lyceum students. At the individual level, adolescents' occupational aspirations surpass the occupational status of their fathers by 18 points, which is a very large and significant difference ($t=49.2$, $p < .001$). Youngsters' occupational expectations thus diverge radically from their parents' actual occupations.

Of course, direct transfer of occupations and occupational status is only one of many ways that a family can influence the occupational aspirations of offspring. Yet it is interesting to compare school as a domain of reference with its particular occupational images and the family as a domain of reference with its own occupational identities. Clearly the school vision is the strongest for the greater number of young people.

The weakness of the family might stem from the increasingly dominant role socio-psychological theory attributes to the peer group over the family of origin at this particular stage of life (Erikson, 1965). Much status attainment literature contrasts the relative impact of family and peers as significant others who influence social aspirations (Davies and Kandel, 1981; Alexander and Eckland, 1974; Duncan, Haller and Portes, 1971; Kandel and Lesser, 1969).

However, in direct contrast to occupational inheritance or the implied positive direction of parental influence in the status attainment literature, that is, that higher status parents foster values and

5. An analysis of occupational upgrading across generations is presented in Appendix E.

provide more resources to create higher status aspirations; we propose an alternative scheme of family influence. The Greek family might predominately act as a negative referent for young people by pushing them away from the employment patterns and experiences of the family. For example, as previously discussed, the strong emphasis that youths place on job security might be a reaction to their own background where the largest share of fathers are self-employed and therefore particularly prone to insecure work conditions. Obtaining a higher education degree is instrumental in this process of leaving behind and overcoming the family patterns of work.

This theme can be discerned in much of the literature on occupational and educational aspirations in Greece. In one study, Greek secondary school students were reported to be pessimistic on whether further education provides easy success in the job market, yet at the same time they overwhelmingly felt that their own fathers would have done better in life had they had more education (Soumelis, 1979:316). In other words, the emphasis is negative and pushing away from the parental experience through education. Laskou-Nasiakou (1977) studying Evritania, a remote mountainous area, consistently observed high expectations of mothers for their very young children's occupational futures. These expectations were almost exclusively premised on the mothers desire for their offspring to escape from their own miserable, as they viewed it, standard of living. Similar patterns have been observed among urban families as well (Mousourou, 1985). An earlier study by Mendras (1961) in Epirus observed high occupational and educational expectations which were related to the perceived monopoly status of higher education as the means to a better life.

One of our rural students gave a succinct summary of the family as a push factor: "My parents want me to pass the Academy examinations, to get a job quickly and to have a better life than theirs has been". On the other hand, as pull factors we have the public sector in general, and the education sector in particular — the latter serving both as an end and as a means for social mobility. That is, the public sector and the educational system are those referents that constitute the major pull factors in the development of young people's occupational orientations over time.

CHAPTER SIX

CONCLUSION

Teachers, doctors, economists and civil service administrators: these are the most desired occupations for Greek youth. About 50% of general lyceum graduates expect to become some sort of teacher (pre-primary through secondary level). Another 11%, composed of economist and civil servant candidates, aspire to administrative and clerical work in the public and private sectors. Youths planning to become doctors comprise another large share, 7%, of the total sample of lyceum youths.

Occupations outside the higher education route were quite popular among gymnasium students but much less in demand among lyceum students. Moreover, very few of the young people who in gymnasium opted for such occupations retained this outlook as lyceum students. Thus movement away from non-higher education occupations and away from direct labor force entry can be located within the time framework of upper secondary school. The deemphasis of the non-higher education route is not a constant characteristic of educational demand in Greece, that is independent of time and of the system; rather it intensifies in upper secondary school. Moreover, there is reason to suspect that diversifying curricular enrollment, despite the claims of proponents of vocational education, does not reduce demand for higher education (see also Foster, 1965). Our data have tentatively suggested that technical lycea students were not any more prone — if anything they were less prone — to aspire to occupation outside of tertiary education (e.g. Table C.3).

Educational demand, as the other side of the coin of occupational demand, follows a typical dynamic over time. Getting into higher education seems to be the most important objective, while occupational goals are shifted around this theme. The most prevalent compromise between preferences and expectations refers to the increasing orientation towards higher education as students progress

through the education system. Concurrently, within the boundaries of higher education, the greater number of youths reorient themselves towards the less selective faculties and towards lower status occupations. For example, among the predominant group of youths who plan to become teachers, an earlier weighting on higher status secondary school posts is later displaced by an emphasis on lower prestige primary level teaching or administrative jobs.

Candidates for more selective faculties and more prestigious occupations seemed overall less flexible and less prone to reorient their occupation plans. For the majority of these youths, their key compromises in occupational choosing had been negotiated by gymnasium.

As a reflection of these tendencies one can broadly distinguish between, on the one hand, the more permeable, and on the other the less permeable fields. The unstable and permeable fields were those whose candidates are drawn in mostly during lyceum. These include education and social sciences which, in corresponding to less selective university faculties, are by far the most popular occupational options and ones that exhibit a staggering growth of demand. The other set of occupational fields draws in most of its candidates by the end of gymnasium. Young people seem to be anticipating the more rigorous selection into the corresponding university faculties by deciding early on whether to specialize in these areas.

Timing of occupational decisions is thus an important factor influencing educational demand and has ramifications that need to be considered by policy makers concerned with youth issues. One implication of the above distinction between more permeable and less permeable fields is that the longer young people have held an occupational preference, the more frustrated and/or persistent they will be if they fail to enter the field of their choice. This varies of course for individuals and, as we have seen, each field within the general scheme has more specialized recruitment patterns that warrant attention.

Candidates for the field of Medicine and, even more precisely, candidates for the occupation of physician, seemed to have the most inflexible occupational aspirations. Most aspiring doctors had set their minds on this goal by the time they were fifteen years old. And most are going to be disappointed when they attempt to enter a university medical faculty. At the same time there is a shortage of the well trained nursing staff, medical technicians and administra-

tors needed to upgrade national health services (KEPE, 1985:24, 189). However, few youths in this sample opted for such careers. It appears that youths planning to go into Medicine need early vocational counseling concentrated particularly in the gymnasium, and following through to the lyceum as well, in order to diversify their occupational outlooks and to introduce acceptable alternatives. The very selective and competitive nature of the second stream (medical) might be modified so as to attract students of a broader range of skill levels and interests. As it is, the nature of the second stream probably intensifies the degree to which candidates focus on narrow range of futures. The reputation of the second stream probably dissuades youths who have poorer grades or less motivation than the highly committed group of "young doctors" we have identified here.

Candidates for science-related and technological occupations were much more committed to the general field than to a particular occupation. Most had decide early to specialize in this field but were less single-minded about their specific career goals. This flexibility can facilitate adjustment to changing labor market conditions and to changing priorities for economic development. For example, technology, and particularly new technologies, had been singled out as key areas for future growth in the last Five Year Plan (KEPE, 1985: 23, 27, 119). Coordinated efforts to supply information about such needs and opportunities can be concentrated in the later lyceum years when most science candidates appear to be crystallizing their occupational goals. Moreover, this flexibility could even be taken one step further. Since new technologies evolve and change rapidly, occupational specialization could be postponed till the later university years after an initial period of more general interdisciplinary training. On the one hand, providing more general background prepares youths to adjust more readily to change in their field, while on the other, it lessens the time gap between an occupational decision and actual labor market entry so that decisions can be taken in light of current conditions. Such a scheme follows and reflects the particularized patterns of occupational choosing for science candidates which have been observed in this study.

One area in which future manpower requirements can be fairly accurately and reliably predicted, even over the long term, is for teachers. Youths who wanted to go into education occupations (lower level) seemed to fall into two different patterns of occupational choosing. The first core group was committed to such a ca-

reer from their gymnasium years, but the other, and much larger, group came to focus on education during lyceum. The second group of youths who come to the decision later might be more influenced by and have more need of information concerning the demand for teachers. The Ministry of Education might consider it worthwhile to make such projections available regularly.

The most problematic — or problematized — group of youths are those who want to enter an occupation in the social science field. They appeared to have the least well defined and stable occupational choices. Thus their needs for vocational counseling which clarifies the options available in this stream is particularly acute during the lyceum years. In the 1983-1987 Five Year Plan one of the factors identified as hindering the development of the industrial sector was the low skill level of the management, and similar observations were made regarding the more efficient functioning of the public administration. It is not all that far-fetched to trace back part of the problem to the residual nature of demand for the social sciences. Provision of vocational input during the lyceum years that is directed to the particular needs of youths contemplating occupations within this field might have a long-term role to play. Similarly, another obstacle to economic growth identified in the 1983-1987 Plan refers to the lack of managers with both technological and management expertise for the predominant small and medium sized firms. The development of a climate conducive to such composite careers is incongruent with current institutional barriers; that is, the existence of a separate economics stream in the lyceum and the restriction of the social science faculties to only economics stream graduates.

In exploring the timing of occupational choosing, it has become apparent that young people have specialized needs for vocational counseling according to their general occupational interests, and that for most youths these needs are acute during the lyceum years. According to the patterns observed here, vocational guidance programs could extend even up to the the last year of lyceum, while programs could be diversified so that students receive information targeted to their vocational interests.

However, it should also be apparent that improving and facilitating the process of career choice is only part, and perhaps the smallest part, of a problem that hinges on the ability of the Greek labor market to absorb educated manpower. A highly successful

program of targeted vocational counceling might result in a better matching of individuals to careers and might even divert some of the current emphasis on a higher education degree, yet given the same educational structure this will probably be a very small "some".

For example, young people might branch out into more diversified medical and paramedical proffesions, but lacking sufficient and efficient institutes at which to train (SAP, 1987:32), this diversification of outlooks will have little impact. We have observed instances where social demand appears to have responded to signals of unemployment and poor job prospects, while the supply of higher education continues in the mould of the past and conflicts with these trends. The very structure of higher education often does not facilitate diversification of occupational demand: to become a diplomat one must choose a Law School, or to train in psychology one enrolls in the School of Philosophy, and so on. The role of the State as employer is an integral part of the problem. The employment policies of the public sector often act as a key regressive force for the development of tertiary education. Until recently, for example, librarians hired by the public sector could have held School of Philosophy degrees, while holders of degree from the Library Science School of the Technological Educational Institutes were nor recognized by the State. As we have repeatedly observed, the public sector acts as a major frame of reference when young people make their occupational choices.

To summarize, institutional constraints, such as lyceum streaming, the structure of higher education and its numerus clausus restrictions often serve to distort and inflate social demand for higher education and to rigidify those artificial barriers between fields that are becoming increasingly obsolete in today's, and more so in tomorrow's, economics. Despite these qualifications, providing young people as they define their occupational plans with more appropriate information, at the right time, and with new skills to process it, is a positive contribution and a step forward in confronting the problems of youth unemployment.

APPENDICES

APPENDIX A

QUESTIONNAIRE FOR THE SURVEY OF LYCEUM STUDENTS

Centre of Planning
and Economic Research

Student Questionnaire

1. What do you want to do next winter?
   1. ——— work (provided I find a job)
   2. ——— study (provided I get into the University)
   3. ——— work and study at the same time
   4. ——— do my military service
   5. ——— stay home
   6. ——— something else. Specify . . . .

2. When you complete the studies you desire —lyceum or a tertiary level school provided you get accepted — what kind of work do you plan to do? (Describe the occupation in detail)....

3. If in question 1 you stated that you want to study, what do you plan to do if you are not accepted at a tertiary education school?
   1. ——— sit for exams again
   2. ——— go to study abroad
   3. ——— I will look for a job. What kind of job? . . . . .
   4. ——— something else. Specify . . . . .

4. If there were no obstacles in choosing your future profession (e.g. exams, educational requirements, financial pressures, family obstacles), would you choose the same profession as you stated in question 2 or a different one?
   0. ——— the same
   1. ——— different. What profession would you choose?

5. If in the above question 4 you stated a different occupation, what is the reason it differs from the occupation you stated in question 2?

6. If you want to continue your studies (question 1), which school would you most like to study at — irrespective of which you will actually apply for? . . . .

7. If you continue your studies (question 1), at the Panhellenic exams, which will be the school of:
   your first choice?....
   your second choice?....
   your third choice?....

8. If the school you would most wish to study at (question 6) is different from the school you will apply for as your first choise at the Panhellenic Exams (question 7), what is the reason for this difference? . . . .

9. For the job you stated that you plan to do (question 2) can you stay in your home area or do you need to leave and go someplace else?
   1. ——— I can stay
   2. ——— I need to leave
   3. ——— I need to leave temporarily (e.g. certain civil servants)
   4. ——— it is not certain

10. Do you wish to stay of leave your home area?
    1. ——— I wish to stay
    2. ——— I wish to leave
    3. ——— no preference
    4. ——— I don't know

11. To what extent did the following influence your choice of the profession which you stated that you plan to enter upon graduation from secondary or tertiary education?
    1. Not at all
    2. A little
    3. Moderately
    4. Much
    5. Very much
    6. I don't know

	1	2	3	4	5	6
The probability of finding a job easily	—	—	—	—	—	—
Family financial difficulties and pressures	—	—	—	—	—	—
The prospect of making a good income	—	—	—	—	—	—
The prospect of finding a permanent and stable job	—	—	—	—	—	—
Your achievement at school	—	—	—	—	—	—
Personal interests and inclination	—	—	—	—	—	—
The probability of finding a good work environment	—	—	—	—	—	—
				Does not apply		
An already existing family business	—	—	—	—	—	—
						They do not express preferences
Your family's preferences	—	—	—	—	—	—
				Does not apply		
The fact that you have worked at a similar job in the past	—	—	—	—	—	—

12. Which are the most important reasons for choosing the profession that you stated you plan to enter (question 2)?
First .....
Second .....
Other reasons, if you have any .....

13. Where did you learn from or who informed you about the profession that you stated you plan to enter? Mark *as many* of the following as apply to you.
— from relatives and others who have the same or a similar profession
— from relatives and others regardless of profession
— from my teachers
— from my experiences at school
— from educational experiences out of school (private lessons etc.)
— from circumstantial experiences in life where I came into contact with the profession (e.g. when one is hospitalized one learns in a way how a hospital works).
— from books and other printed material
— from school vocational guidance
— from the TV, the radio etc.
— from other sources. Supply . . . .

14. To whom will you apply in order to find a job when you graduate from secondary or tertiary education? Mark *as many* of the following as apply to you.
— to relatives and friends
— to newspaper ads
— to a private employment agency
— to my teachers
— to a political office (M.P., mayor etc.)
— to the Organization of Labor Force Employment (OAED)
— to certain companies in my area
— to the public sector
— to no one. I will be self-employed
— somewhere else. Where? . . . .

15. If in the previous question you stated that among others you will apply to certains companies in your area, which are these companies?
    1. ..... 2. .....
    3. ..... 4. .....

16. Which are, in order of preference, the two subjects that you like best at the lyceum?
    a. ..... b. .....

17. What grade did you receive in the second year of lyceum in the subjects you stated above? If you have chosen Political Economy or Sociology provide this year's average in the first and second trimester.

	10	11 or 12	13 or 14	15 or 16	17 or 18	19 or 20
In a	—	—	—	—	—	—
In b	—	—	—	—	—	—

18. Which track are you currently enrolled in?
    — First, — Second, — Third, — Fourth, — Technical Lyceum

19. How would you rate your ability as a student on a scale ranging 1 to 7 irrespective of your schoold grades? (Circle the number you choose).
    low ability 1 2 3 4 5 6 7 high ability

20. What final grade did you receive in the second year of lyceum in the following subjects?

	Mathematics	Physics	Ancient Greek
Below 10	—	—	—
10	—	—	—
11 or 12	—	—	—
13 or 14	—	—	—
15 or 16	—	—	—
17 or 18	—	—	—
19 or 20	—	—	—

21. In preparing for the Panhellenic Exams are you taking any private lessons this year? If yes for how many houre per week?
    1. ——— Yes at home ——— hours per week
    2. ——— Yes at group tutorial classes ——— hours per week
    3. ——— No, I am not taking any

22. Is your father's current profession the same he had three years ago (i.e. when you entered the lyceum)?
    ——— it is the same
    ——— it has changed. What is his current profession? . . . .
    ——— he is not alive

23. How many of your friends plan to continue their studies at a University?
    1. none
    2. some
    3. almost
    4. half
    5. the majority
    6. all

24. Describe in a few words what you think your parents would like you to do in the immediate future, (e.g. to study electronics at a Technological Institute or to work in your father's business (e.g. a restaurant, law office etc.)....

APPENDIX B

LYCEA THAT SAMPLED STUDENTS ATTENDED IN 1983-1984

Central Athens:

3rd Lyceum of Athens (Ambelokipi)
4th » » » (Plateia Vathis)
5th » » » (Exarchia)
6th » » » (Neos Kosmos)
12th » » » (Petralona)
18th » » » (Patisia)
20th » » » (Aharnon)
36th » » » (Neos Kosmos)
59th » » » (Ano Patisia)
4th Lyceum of Kallithea
3th » of Nea Philadelphia

East Athens

2nd Lyceum of Zographou
3rd » of Zographou
4th » of Zographou
1st Lyceum of Byronas
2nd » of Byronas
3rd » of Byronas

West Athens

Lyceum of Aghia Barbara
3rd Lyceum of Peristeri
9th Lyceum of Peristeri

North Athens

3rd Lyceum of Palaio Psychiko
1st Lyceum of Neo Heraklion
Lyceum of Papagou
Lyceum of Pefki
2nd Lyceum of Kifisia
Lyceum of Vrilissia

Piraeus

2nd Lyceum of Piraeus
5th » » »
6th » » »
7th » » »
2nd Lyceum of Elefsina
2nd Lyceum of Drapetsona
Lyceum of Kallipoli
3rd Lyceum of Palaio Faliro

Fokida

Lyceum of Galaxidi
Lyceum of Lidoriki

Boetia

Lyceum of Shimatari
Lyceum of Vayia
2nd Lyceum of Levadia
Lyceum of Aliartos

Kozani

Lyceum of Siatista
Lyceum of Neapolis
Lyceum of Eratyra
2nd Lyceum of Kozani
3rd Lyceum of Kozani
Lyceum of Tsotili

Grevena

2nd Lyceum of Grevena
3rd Lyceum of Grevena
KETE Grevena

Kavala

Lyceum of Chryssoupolis
KETE Chryssoupolis
2nd Lyceum of Kavala
3rd » » Kavala
4rd » » Kavala
Lyceum of Limenas Thassou
Lyceum of Limenaria Thassou
Lyceum of Nikisianis
Lyceum of Krinides
Lyceum of Eleftheroupolis

APPENDIX C

TABLE C.1

Occupational Choices by Field at Time 1 and Time 2 for Students Responding at Both Times (N=613)[a]

Field	Time 1 % (N)	Time 2 % (N)	Difference T_1-T_2	% Change T_1 to T_2
Science	24.6 (151)	18.8 (115)	-5.8	-24
Medicine	11.6 (71)	10.1 (62)	-1.5	-13
Humanities	14.4 (88)	9.8 (60)	-4.6	-32
Social Sciences	8.6 (53)	22.3 (138)	13.7	160
Education	16.6 (102)	26.4 (162)	-9.8	59
Military	8.2 (50)	4.9 (30)	-3.3	-40
Non-Higher Education	15.9 (98)	7.5 (46)	-8.4	-52

a. Late deciders, that is lyceum students who had no time 1 occupational preference, are excluded (n=309), as are gymnasium students who did not participate in the time 2 survey (n=1120).

TABLE C.2

Occupational Choices by Field for Gymnasium Students and Lyceum Students

Occupational Field	Gymnasium Students		Lyceum Students	
	Absolute No.	Adjusted %	Absolute No.	Adjusted %
Sciences	247	18.9	166	17.8
Medicine	121	9.3	76	8.2
Humanities	147	11.2	74	8.2
Social Sciences	86	6.6	191	21.3
Education	234	17.9	284	30.7
Military	99	7.6	46	5.3
Non-Higher Education[a]	273	28.5	78	8.5
Subtotal	1307	100.0	923	100.0
Missing or Don't Know	1103		26	
Total	2042		949	

a. Including low ranking military and police officers.

TABLE C.3

Distribution of Occupational Field Preferences for Technical Vocational Lyceum Students (N=46)

Field	n	%
Science	15[a]	32.6
Medicine	0	0
Humanities	0	0
Social Science	6 [b]	13.0
Education	22	47.8
Military	0	0
Non-Higher Education	3	6.5
Total	46	100.0

a. Twelve of these 15 students want to enroll in either the TEI or SELETE, two in the Polytechnics and one in the Physics-Math Faculty.

b. Two of these six students want to enroll in an economics department and four want to enroll in a sociology department.

TABLE C.4

The Fifteen Occupations Most Frequently Chosen by Students in the Third Year of Gymnasium Based on a Matched Time 1 and Time 2 Sample (N=613)[a]

Occupation	Demand at T_1[b] N	% of Total	Demand at T_2[c] N	% of Total
Philologist	68	11	26	4
Physician	52	8	49	8
Pre-primary Teacher	35	6	43	7
Mathematician	34	6	28	5
Physicist[d]	29	5	23	4
Primary Teacher	26	4	55	9
Physical Education Teacher	24	4	48	8
Civil Engineer	23	4	6	1
Civil Service Administrator/Clerk	21	3	24	4
Armed Forces Officer	20	3	17	3
Lawyer	18	3	12	2
Architect	16	3	5	1
Pilot	15	2	6	1
Foreign Language Teacher	14	2	19	3
Journalist	14	2	7	1

a. Sample excludes all those gymnasium students not participating in the time 2 survey (n=1120) and all those lyceum students who did not have an occupational preference at time 1 (n=309).

b. Third year of gymnasium.

c. Third year of lyceum.

d. Including physics/math specializations (physiko-mathimatikos).

TABLE C.5

The Satisfaction of Projected Demand for University Faculties Based on Observed Rates of Demand for Occupations*

Occupations Faculty	(1) Projecteed Demand	(2) Actual Number of Entrants	(3) Satisfaction of Demand Rate 1/2
Primary School Teacher	16010	5583	35%
Economist	10997	3570	32%
Sociologist	4542	200	4%
Lawyer	2910	1850	63%
Philologist	5516	950	17%
Foreign Languages	3893	1170	30%
Mathematician	5498	1160	21%
Computer Analyst	2910	110	4%
Physicist	5175	990	19%
Civil Engineer	1343	930	69%
Mechanical Engineer	1942	440	23%
Architect	971	210	22%
Physician	9703	1046	1%

* The demand rates observed in this study (time 2) for selected occupations are applied to the total number of candidates for higher education (149,269 in 1985). This results in projected demand figures for the corresponding faculties or departments (columm 1). The projected demand rates are divided by the total number of entrants to each corresponding faculties (columm 2) resulting in an estimated rate or satisfaction of higher education demand (column 3). This rate is the proportion of estimated total candidates who succeeded in entering the university school of their first occupational choice. These figures are only indicative because they are based on a general lyceum sample whereas total candidates include technical lycea graduates and young people taking the exams for a second or third time. Furthermore, first occupational choice can often differ from the university faculty given as first choice. Nonetheless, they present the general dimensions of the issue.

APPENDIX D

OCCUPATION AND ACHIEVEMENT INDICATORS

1. Occupational Indicators

In the process of ordering the data on occupational expectations, prestige of occupation has emerged as a salient topic worthy of individual analysis.

Occupational prestige is a dimension of the social standing of individuals in modern societies that serves as a tool with which to examine occupational aspirations. Distinct from nominal definitions and uses of occupational choices, prestige provides a unitary vertical principle which ties the concept of occupational choice into the broader social structure. The concept of prestige also captures the orientation towards the future and towards achievement that is implied by occupational selection as a critical life decision.

More practical considerations also contributed to the decision to utilize prestige as an ordering principle in the exploration of occupational aspirations. First of all, this study is limited to the use of extant scales. Of the two widely known occupational scales, Treiman's Standard International Occupational Prestige Scale, hereafter called the SIOP Scale, (1977), was preferred to Duncan's Socioeconomic Scale of Occupational Status (1961). The Duncan Scale is based on American data and realities (distributions of income and education levels) that might be an inaccurate gauge for Greek society. Indeed, the points of congruity and disparity should constitute a separate and precedent research topic. Furthermore, the fit of the Duncan Socioeconomic Scale to these particular data is doubtful. Of the time 2 youths, 92% aspired to an occupation requiring higher education. Therefore educational level, which is one of the two constituent elements of the scale along with income, will exhibit minimal variation in these data.

The Standard International Occupational Prestige Scale (SIOP Scale), on the other hand, discriminates amongst occupational choices in a more extensively multifactorial way and depends less on any one factor such as education. The primary recommendation of

this scale, however, is that it is more generalizable across societies since it was based on data from a great number of societies. Considerable empirical evidence is marshalled to support the validity of the SIOP Scale. Eighty-five occupational prestige studies from 53 countries are compared and found to correlate on average at .80. The argument is made, moreover, for a generic world-wide hierarchy of occupational prestige based on a structural theory of prestige determination where the relative prestige of occupations is stable across societies.

The structural theory argues that the division of labor creates inherent difference in the power associated with various occupational roles wherever they are found; that these differences, in turn, create differences in privilege; and that power and privilege beget prestige. Since a similar complement of occupational roles tends to arise in all complex societies, the resulting prestige will also be similar (Treiman, 1977; 2). The similar complement of occupational roles is due in part to practical limitations on available organizational forms, while power differences refer to control over the scarce resources of knowledge, authority and property. For example, Treiman finds a consistent upgrading of prestige for skilled manual occupations and a downgrading of prestige for clerical occupations in Eastern European countries. The significance of this deviation, according to Treiman, lies in the different privilege patterns in Eastern Europe for these occupations in terms of wages and working conditions (1977:46).

These arguments for a generalizable hierarchy not-withstanding, the prestige scores of the SIOP Scale for certain occupations seem inaccurate for Greece. The structural argument would in fact lead one to expect dicrepancies wherever structural idiosyncracies exist. Specifically, we can point out that assigning a much higher prestige score to "lawyer" that to "civil engineer" is inappropriate for Greece. The profession of lawyer does not have the elite monopolistic standing in Greece that it often has in other countries. The educational system has produced an abundance of lawyers for several decades who quite often take up jobs as minor civil servants rather that as self-employed, highly rewarded professionals.

While the SIOP Scale groups them together, a 3rd ship's engineer (rank 3) should have quite different prestige from that of a 1st ship's engineer (rank 1). Indeed, occupations related to shipping and tourism were generally a problem. These important sectors of the

Greek economy exhibit greater differentiation of roles and titles in Greece than is represented on the SIOP Scale. Perhaps the most problematic issue is the fact that self-employed production workers in Greece often are not of the same skill/education level as the SIOP Scale Master (self-employed) category. For example, while "ergolavos" translates as "building contractor", most ergolavoi are not at a corresponding skill and power level.

In general, not only occupational titles but information on rank and employment status (salaried, self-employed, number of employees) was indispensable to prorerly identifying occupation and to assigning it a prestige score. Research dealing with the Greek occupational structure and its gradings would be quite valuable.

Until such time, and in response to our reservations, another less exacting version of the SIOP Scale was developed. Though less precise, it might be more appropriate to local conditions and the requirements of the data. This indicator and other occupational measures are described below.

1.2. Individual Occupations

Occupational data — father's occupation and youngster's occupational choice — were coded according to the 3 digit International Labor Office occupational coding scheme. This resulted in 163 separate occupations for the sample of parents, 105 for the time 1 sample of youths and 74 for the time 2 sample of youths. In the case of youths' choices, certain occupations occurred rather frequently for which we did not have a separate 3 digit level code. For such instances, an empty occupational code — i.e. an occupation no one selected — was borrowed. Codes were borrowed and renamed for the occupations: physical education teacher, archaeologist, foreign language teacher and computer analyst. SIOP Scale occupational titles were identified using the Greek National Statistical Service's Alphabetical Code of Occupations. Occupational specializations which could not de identified with the former manual were matched by function or type of work.

These technical-vocational codes which describe the type of work people do are essentially the "raw data" of this study. However, they can fulfill certain analytic fuctions as well which capital-

ize on the qualitative richness of such data. An examination of the most frequent occupations provides an eloquent account of major features of the Greek occupational structure. In Table D.1 fathers' occupations are described. The primary employment of fathers is farming at 16%.* The second most frequent employments after farming are taxi and other vehicle drivers, construction workers and laborers at 7% each. Next, shopkeepers and civil servants each constitute 6% of the adult sample. Along with farmers these five occupations accounted for 42% of the sample. Indeed the 15 occupational categories of the table account for 62% of the sample and 148 other occupations for the remaining 38%.

1.3. Prestige Score of Individual Occupations

Individual occupations were assigned prestige scores according to the aforementioned Standard International Occupational Prestige Scale (Treiman, 1977).

For unlisted occupational specializations, the job matching principle was applied in assigning prestige scores. For example, the SIOP Scale lists a prestige score for ship's engineer which ostensibly refers in the Greek structure to the 1st ship's engineer. Since there are significant authority and educational differences between a 3rd and a 1st ship's engineer, it was considered more appropriate to assign to 3rd engineers the prestige score of mechanics as constituting functionally similar occupations. The other major digression from the SIOP Scale is that most "ergolavoi" were not given the prestige score for building contractor but rather that for skilled construction worker, based both on considerations of power (as Treiman defines it) and on those of function.

1.4. Father's Occupation According to the International Standard Classification of Occupations (ISCO) and the Standard International Classification of Occupations (SICO)

Obviously the analytic utility of the 163 occupational categories from the ILO three digit codes is rather limited, and there is a need

* Only three of nearly 1,000 lyceum youths listed farming as an occupational goal. Such a glaring rejection by secondary school youths makes for an important research agenda.

TABLE D.1
The Fifteen Most Frequently Designated Occupations of Fathers of Sampled Students[a] (1981)

Occupational Category	N	%
Farmers	327	16
Taxi and other vehicle drivers	136	7
Construction workers and laborers[b]	136	7
Shopkeepers	130	6
Semi-skilled and factory workers	67	3
Civil servants, middle rank	62	3
Civil servants, clerks	60	3
Ships officers and engineers[c]	56	3
Taverna, hotel and related keepers	52	3
Heads of small firms and executives	52	3
Building contractors	51	3
Electricians	34	2
Foremen and Supervisors	29	1
Office Clerks	26	1
Mechanics	26	1
Subtotal	1224	62

a. The total number of cases is 2,012.
b. Including 3 bricklayers, 20 woodworkers.
c. Merchant marine officers, all ranks.

for another scheme to summarize and order such information. The *ISCO* is one such scheme which is widely disseminated. It groups occupations into categories according to the first digit of the occupational code: (1) Professional, technical, and related workers, (2) Administrative and managerial workers, (3) Clerical and related workers, (4) Sales workers , (5) Service workers, (6) Agricultural workers, (7) Production and related workers, transport equipment operators and laborers, and optionally, (8) Members of the armed forces.

The primary utility of this classification is its wide currency allowing, for example, comparisons to the 1981 Census Figures (Chapter Two). Its categories, however, are rather a mixed bag that combine varying skill and economic levels. Craftsmen are thus grouped with architects, sales clerks with store owners, hairdressers with police officers, or unskilled laborers with dental mechanics. To take into account such differences, another occupational classification is described below.

The *SICO* scheme proposed by Treiman (1977:206) is a simple expansion of the ISCO that basically dichotomizes the above occupational categories at the mean of occupational prestige for each category. Production workers, a very large group, are trichotomized, managers and government officials, a small group, are left as one. One modification we made to the SICO is that policemen are included in the military personnel category; reasoning by function, state security personnel were judged more similar to the military than to other service workers such as maids, bartenders and barbers. We also used the option to dichotomize the military and security personnel category (see Treiman, p. 204).

The resulting categories are more homogeneous with respect to occupational prestige. Thus for this sample, n^2 (proportion of variance accounted for) for individual occupational prestige of fathers was .483 with the ISCO and .804 with the SICO.

Table D.2 compares the prestige statistics for an international sample using the Standard International Classification of Occupations (Treiman, 1977:206) and for this study's sample. There is a remarkable degree of congruity between the two scales in the prestige rankings of occupational categories. Exceptions include low prestige professional, technical and related occupations which for our data move up to the third highest prestige category. For this sample, this category primarily included accountants and high ranks

TABLE D.2

Prestige Means and Standard Deviations:
A Standard International Classification of Occupations
and A Categorical Prestige Scale

Occupational Category and Prestige Cutting Point	Standard Classification Prestige Score		Sample Prestige Score	
	Mean	S.D.	Mean	S.D.
1. High prestige professional & technical occupations (≥ 58)	68.4	6.1	67.9	6.3
2. Administrative and managerial occupations	67.1	11.8	56.5	6.5
3. High-prestige clerical and related occupations (≥ 41)	50.3	7.4	50.0	7.5
4. High-prestige sales occupations (≥ 40)	49.1	5.0	43.2	3.1
5. Low-prestige professional & technical occupations (≥ 58)	48.9	8.6	50.6	5.9
6. High prestige agricultural occupations (≥ 34)	44.3	8.6	39.2	3.5
7. High prestige production & related occupations (≥ 38)	43.6	4.8	42.4	3.4
8. High prestige service occupations (≥ 27)	40.8	10.4	43.3	11.2
9. Medium prestige production & related occupations (26-37)	32.1	2.9	32.2	2.3
10. Low prestige clerical and related occupations (≤ 41)	31.6	5.6	29.4	4.1
11. Low prestige sales occupations (≤ 40)	31.6	5.6	29.4	4.1
12. Low prestige aggricultural occupations (≤ 34)	22.3	9.1	23.0	3.4
13. Low prestige service occupations (≤ 27)	19.7	5.1	23.0	1.3
14. Low prestige production & related occupations (≤ 26)	19.6	4.9	21.2	2.7
15. High prestige Military and Security occupations (≥ 44)[a]			58.3	6.9
16. Low prestige Military and Security occupations (≤ 44)[a]			41.7	2.9

a. When military personnel are included in the sample, two additional categories which distinguish between non-commission and commissioned officers are recommended.

of ship's officers and engineers who brought up the category's mean prestige score — as opposed to technical assistants, entertainers etc. High prestige agricultural occupations move down one rank, reflecting the preponderance in Greece of lower prestige small farmers. High prestige service occupations move up several ranks because of the many working proprietors compromising this category who have higher prestige than other service workers. Low prestige sales occupations — in this sample mostly kiosk and small sundry vendors than lower prestige clerks and peddlars — also move up several ranks.

These contrasts of prestige means for this sample to those of the Standard International Classification of Occupations have vividly illustrated some of the idiosyncratic features of the Greek occupational structure. The preponderance of working proprietors and the importance of certain sectors such as shipping is thereby statistically substantiated. At the same time, however, the similariry of the rankings of most occupational groups, and even more so of their prestige score averages, supports the view that the Standard International Classification of Occupations is generally valid as a descriptive tool that approximates the Greek occupational status hierarchy.

1.5. Father's Occupational Prestige (GPREST)

The *SIOP* Scale is a much more finely graded instrument than the *SICO* classification scheme presented above. However, in view of the particularities of the Greek occupational structure that we have been discussing, it is these very fine distinctions and gradations represented by the SIOP Scale which at times generate problems in regard to its accuracy and applicability. In order to retain the analytic flexibility provided by a scale's interval level measurement, a compromise between the SIOP Scale and the SICO was sought that would minimize the disadvantages of each. The nomimal categories of the SICO were replaced by the mean prestige scores for individuals' occupations in each category. These means were the sample means (columm 3, Table D.2) rather than the international averages. The resulting variable measuring father's occupational prestige is named GPREST.

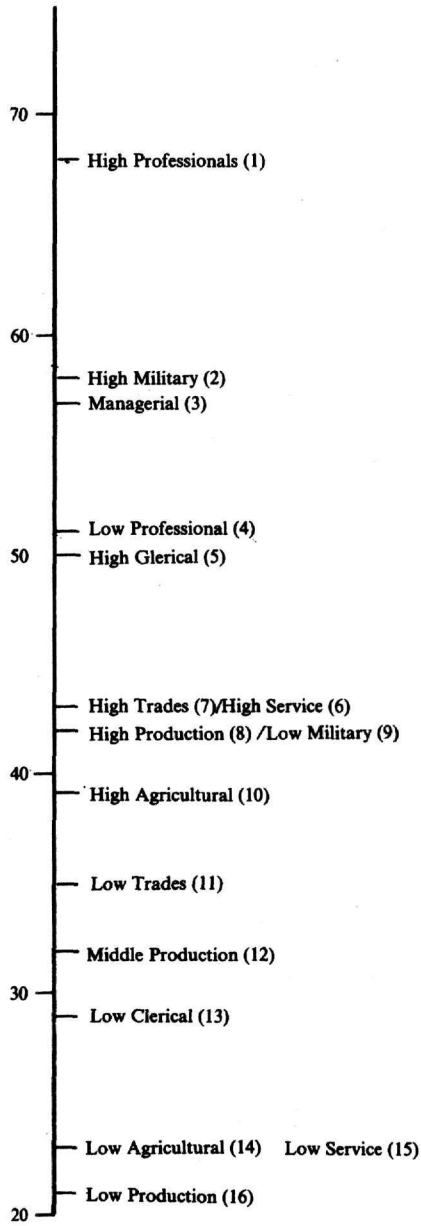
When replacing individual scores with group means, there is some loss of information since individual variation descreases. However, the argument is precisely that we want to lose some information. Instead of questioning the assignment of a few prestige points plus or minus to specific occupations, we have more confidence in the overall accuracy of the general ranking of occupational groups — particularly since the few individual occupations about which we had doubts characterized a sizeable share of the sample. Another advantage is that the prestige scores used are means calculated from the sample at hand that reflect and conform better to local peculiarities. There is also greater substantive utility in the new measure, in that it can be translated promptly into corresponding occupational categories. It is thus easier to grasp and think in terms of occupational groups such as managers and high clerical workers than to give substance to a 64 or 52 prestige score.

Finally, the statistical efficiency of the alternative prestige indicators proved greater. GPREST was compared to the *SIOP* Scale and to another version of GPREST using Treiman's international sample occupational prestige score means. In regressions of students' educational aspirations, work values and school continuation rates, GPREST was clearly more robust. GPREST, although a less precise indicator, was best at reflecting information on the Greek social structure that seems to matter to a variety of socio-psychological dispositions and status outcomes.

Figure D.1 graphically illustrates GPREST and occupational differentiation in Greece by placing occupational groups at their respective level in the prestige continuum. High prestige professionals are of course at the top. Quite a bit below them come high prestige military occupations along with the category Administrators and Managers. A third lower cluster of occupations is made up of low prestige professional and related technical occupations and of high prestige clerical occupations. Next, high prestige trades and sales occupations, high prestige service occupations, high prestige production occupations and low prestige military occupations cluster tightly in a fourth and lower ranking group. High prestige agricultural occupations fall a bit below this group. After high prestige agriculture, there is a dispersion across the bottom end of the spectrum of all the low prestige occupational groups: trades and sales, production (middle prestige) clerical, agricultural, service, and lastly production.

FIGURE D.1

The Occupational Prestige Scale for the Sample of Fathers



1.6. Youths' Occupational Choices Classified by a Modified Version of the Standard International Classification of Occupations (YSICO)

The distribution of youths' occupational choices is such that a direct application of the Standard Classification *(SICO)* becomes problematic. At time 1, 70% of the students in the 3rd year of gymnasium, and at time 2, 84% of the students in the 3rd year of lyceum, selected occupations from the category Professionals and Related Technical Workers. Their occupational choices are thus very homogeneous with respect to prestige, they are limited to a small array of possible occupational roles, and they are concentrated among the highest prestige occupations.

The professional category was therefore trichotomized, rather than dichotomized as in the Standard Classification, so as to maximize differentiation between students. Production workers are dichotomized rather than trichotomized since this is no longer a populous category, and similarly agriculture and trades are each left as one category rather than dichotomized.

The resulting scheme has 14 occupational categories rather than the 16 of the Standard Classification (SICO). Students' time 1 and time 2 choices were combined in calculating the various mean prestige scores necessary to establish the cut-off points for categories.

The 14 categories of the youths' occupational classification marked according to mean prestige are:

1. High Prestige Professional Occupations
2. Middle Prestige Professional Occupations
3. High Prestige Military Occupations
4. Managerial and Administrative Occupations
5. High Prestige Clerical Occupations
6. Low Prestige Professional and Related Technicians
7. High Prestige Service Occupations
8. High Prestige Production Occupations
9. Low Prestige Military Occupations

10,11. Low Prestige Military Occupations*

10,11. Sales and Trades Occupations

12. Low Prestige Service Occupations
13. Low Prestige Production Occupations
14. Agricultural Occupations

*. Low Prestige Military and Sales and Trades are tied in terms of prestige.

1.7. Youths' Occupational Prestige for Time 1 (PREST 1) and Time 2 (PREST 2)

In creating an occupational prestige indicator for youths' occupational aspirations, the same procedure was repeated for the youth sample as for the adult sample: The 14 categories described above were replaced by the mean prestige score for individuals in each category. Time 1 responses were combined with time 2 responses in calculating prestige averages.

The statistical efficiency of this constructed prestige variable was tested against that of the Standard International Occupational Prestige Scale and against another variable that was graded according to values from the adult sample. Several regressions of educational achievement and school aspirations were run and in all cases the PREST 1 and PREST 2 indicators were more robust.

1.8. Youths' Occupational Choices by Educational Field

Occupational choices are also distinguished by their affiliation with sectors of higher education. The concentration of youths' occupational demand within those occupations requiring postsecondary training led us to this scheme of classification that is based on the structure of higher education. Indeed, sectors of higher education might reflect the occupational divisions that youngsters perceive better than abstract occupational gradings such as status or prestige. A sizeable portion of youths responding to the very specific questions on what type of work they expected to do in the future answered with only the higher education faculty or section for which they intended to sit for exams.

The seven sectors are: (1) Science and Technology, (2) Medicine, (3) Humanities and Arts, (4) Social Sciences and Law, (5) Education, (6) the Military, (7) Non Higher Education.

2. Ability

Individual ability is a key factor posited to influence any variety of status-related dispositions and status outcomes: school achievement, educational aspirations, occupational attainment,

earned income etc. Central as this concept is, so, too, are the debates it engenders on the nature of "true" ability voluminous, which in turn generate controversy on a host of specific and related issues such as culture-free testing and aptitude versus achievement.

There does seem to be consensus that intelligence is a multidimensional concept (Guilford, 1968) involving numerous types of ability such as, for example, mechanical, verbal and numerical. Furthermore, aptitude is operationally distinct from achievement, in that aptitude tests are more general and refer to future learning while achievement evaluates past learning (Wick, 1973:152). In practice, however, the distinction between aptitude and achievement is hazy (Ibid). Jencks, Crouse and Mueser (1983), for example, find that academic achievement scores out-performed a general aptitude composite in predicting later educational attainment, occupational attainment and earnings. Campbell (1983) further cites rank in high school class as a better predictor of later performance than test scores thus suggesting that the former captures a motivational component which the latter do not.

In this study school achievement measures are used. School performance reflects not only a capability component, but also a motivational component and a school quality component. Good school grades are related to factors such as persistence, effort, identification with prevailing school values, work habits, and amount and quality of educational resources. In forming occupational aspirations, both the motivational component of school achievement as well as that of ability is important.

Since instruments for measuring individuals' academic achievement that have desirable properties such as standardization and national norming are not available in Greece, multiple measures of school grades and scores on the Lyceum Entrance Exams were collected instead. School grades, more than national exam scores, put weight on the motivational component by reflecting a history of daily classroom behaviour. Moreover, school grades involve repeated observations and might therefore be more reliable ability indicators. Unfortunately, school grades also entail certain particular biases. They involve a student-teacher dyad and the evaluations of any one teacher might be prejudiced for any number of reasons. Even more problematic, grading biases might be systematic, for example, if "good" students' grades are inflated when they count toward university entrance. A critical consideration is how to minimize these

possible biases of the available school achievement measures.

One viable tactic is to repeat measurement and gather multiple and varied information on school achievement rather than to rely on any one single instance. A variety of classroom and other achievement measures from several time points were therefore used. Grades in gymnasium in two subjects are evaluated along with grades in lyceum in three subjects. Additionally, scores on two sections of the national Lyceum Entrance Exams (LEEs) are also incorporated. Furthermore, school grades were standardized by classroom to control for grading differences between classrooms, so that the same raw scores may have different standardized values if a specific classroom is systematically graded high or low. Thus different classrooms, schools, subject contexts and times are represented by the achievement indicator.

All variables were taken from school, or — in the case of the national exams — from Ministry of Education records in order to avoid the bias of self-reported grades. This bias was quite marked. In an analysis of randomly selected cases (time 1), only 20% of the grade reports were accurate, 66% over-stated grades by one to three points and 6% understated grades, by one point. Inflation of grades was also systematic; it was more prevalent at lower achievement levels. The technicalities of the achievement variable construction which uses these indicators are developed below.

2.1. A Composite Measure of Academic Achievement (ACHIV)

Factor analysis was applied to the seven achievement variables: gymnasium year two grades in mathematics and classical literature, lyceum year two grades in mathematics, classical literature and physics; and the General Lyceum Entrance Exam scores (following gymnasium year 3) in classics and in physics. Individual classroom grades were standardized according to classrooms' mean and standard deviation of grades.

The factor analysis produced a uni-factorial solution which extracted from the data a single general ability construct. All factor loadings were very high for classroom grades regardless of subject and time measured, and ranged from .73 to .78. LEE scores loaded slightly lower at approximately .60.

Each of the seven standardized achievement variables was then multiplied by its factor score and added together to produce an academic achievement score (ACHIV). When a case had one or two missing values among the seven variables used to construct ACHIV, the missing values were replaced by mean values. If more than two variables were missing, the case took on a missing value for ACHIV. This treatment assured the greatest sample size and proved more robust in preliminary statistical analyses than did an achievement composite using full listwise deletion.

3. Concluding Remarks

It is, perhaps, with a jealous eye that one can view those contexts with a long history of research where tools such as scales and measures are easily available and ready for evaluation and application. Lacking such facilities, the researcher is drawn into a time-consuming process that is often only tangential to the main work. Yet the process of developing indicators for occupation and ability tailored to the Greek context more than made up for these disadvantages.

These preliminary analyses required a conceptual grounding and a strict of theoretical assumptions that exposed the strengths and limitations of the data and concurrently produced valuable information and insights into the Greek occupational structure.

APPENDIX E

OCCUPATIONAL UPGRADING BETWEEN GENERATIONS

Figure E.1 locates occupational categories for youths and adults on the occupational prestige continuum of the International Occupational Prestige Scale. Occupational categories for youths are on the right, and occupational categories for adults on the left. It is apparent that between the adult and youth generations there is substantial differentiation of prestige within the same occupational categories.

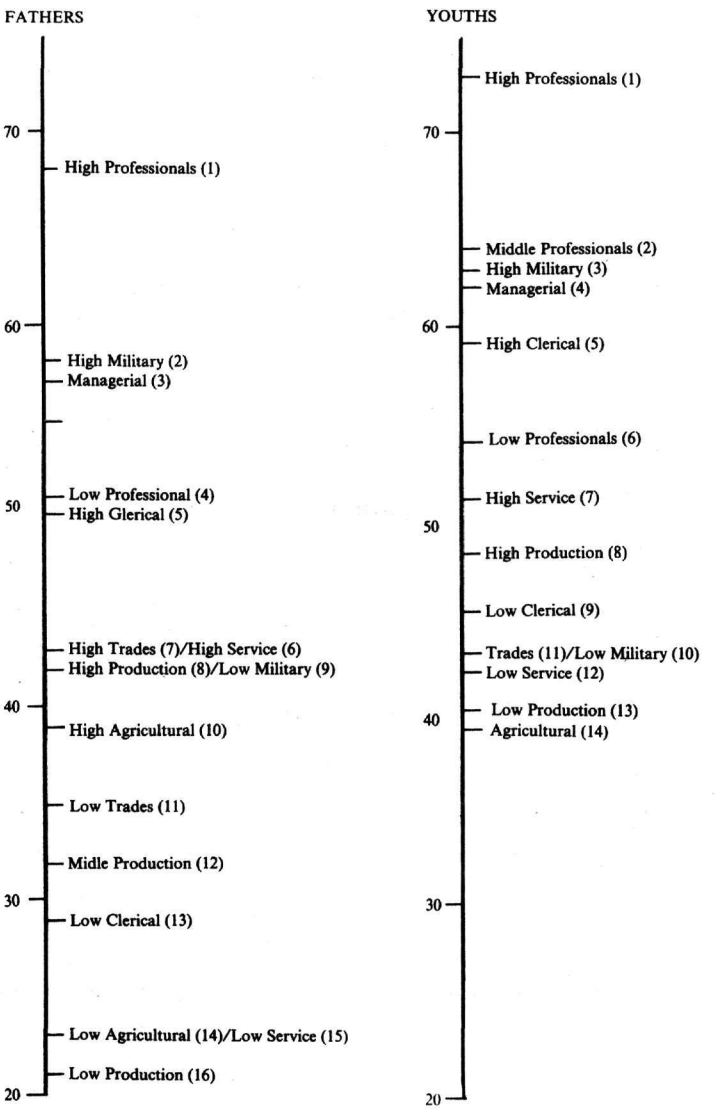
To locate these occupational groups on the prestige scale, the mean for all individual cases within the category was calculated. Because of low representation among youths, sales occupations are left as one category and production occupations are only dichotomized. Sales occupations for the adult sample, where there was greater representation, were dichotomized and production occupations were trichotomized (see Appendix D).

The occupational upgrading between generations, while pervasive, is most acute for low prestige production, low prestige service and low prestige clerical occupations. The high prestige occupations of these three sectors exhibit more moderate inflation — as do sale occupations. High prestige military, managerial, and low prestige professional occupations exhibit even less upgrading of prestige between generations. And the least upgrading is for the remaining professional categories. Alternatively, calculating mean prestige scores for the full professional category among adults and youths gives an average score of 59.5 for adults and 63.6 for youths. This difference is relatively low and is about the same as that for the managerial category.

To summarize, then, all the relatively higher prestige occupational categories exhibit the least inflation of occupational status between youths and adults. Since educational/skill differences between youths and adults are smallest in the professional and managerial categories, the instrumental role of education in the process of occupational upgrading is emphasized.

FIGURE E.1

Fathers' and Youths' Occupational Categories on the Occupational Prestige Scale



Minor exceptions to the trend toward status upgrading occur for only two occupational groups which are placed at the same point of the continuum: low prestige military occupations and agricultural occupations. These categories incorporate only a few individual occupations, just one each for youths, and indeed comprise only a few cases for youths. There is thus little latitude for differentiation in these categories.

The broader picture provided by Figure E.1 shows that the relatively lower status occupational categories undergo the greatest upgrading. In general, there is a negative correlation between the status of an adult occupational category and its prestige discrepancy with the corresponding youth category. In substantive terms, compared to the parental sample, offspring tend to choose the higher status occupations from each occupational group and this is most marked for the least prestigious occupational groups.

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