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PROFESSIONAL SOCIALIZATION AND THE
EFFECT OF THE PROFESSIONAL SCHOOL:
THE CASE OF DENTAL EDUCATION IN CANADA

A Thesis

Presented to

Carleton University

In Partial Fulfilment

of the Requirements for the Degree

Doctor of Philosophy

by

Angus E. Reid

May, 1974

The undersigned recommend to the Faculty
of Graduate Studies acceptance of the thesis:

"Professional Socialization and the
Effect of the Professional School:
The Case of Dental Education in Canada"

submitted by Angus Edward Reid, M.A.,
in partial fulfilment of the requirements for
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ABSTRACT

Based on a concern with the role of the professional school as a transmitter of professional culture and ideology, this study examined recruitment and socialization into dentistry in Canada. Cross-sectional data collected in a 1971 survey of the population of Canadian dental students and faculty members were utilized to test a number of hypotheses concerning the conditions under which the dental school influences the professional orientations of the students it recruits. These hypotheses, derived from a model which viewed faculty as the major source of influence in the professional school, postulated that students adoption of faculty attitudes would vary directly with the degree of faculty consensus and the proportion of students who perceived faculty as "supportive" and inversely with the size of the school. Exploratory data analysis using mean differences between each of the years at the nine Canadian dental schools as a measure of changes in students' professional orientations indicated only limited support for the first hypothesis while more substantial support for the second and considerable support for the third. The implications of these findings were discussed both with reference to the model of professional socialization from which the hypotheses were derived, a number of practical matters in the area of dental education and some general theoretical issues concerning the relationship between the professions, professional education, and society.

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And finally, for any errors which remain, the author
alone is responsible.

Angus Edward Reid
Winnipeg, Manitoba
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CHAPTER ONE

INTRODUCTION

11a.

Few areas of sociological inquiry have been as conspicuous in the discipline's short history as the study of socialization. While the investigation of socialization has been directed traditionally toward early childhood, in recent years increased attention has been given to this process in later life, particularly as it occurs in the context of organizations which are specifically designed to socialize individuals. This analysis has included a wide variety of institutions as diverse as monasteries, mental hospitals, military academies, and prisons (1).

One type of socialization setting which has received particularly close scrutiny is the modern university. While the university as a social phenomenon in its own right has received a good deal of study, the special attention which it has been given in recent years by many disciplines is to a great extent the result of its special place vis-à-vis two areas of concern which have permeated social policy research for the past two decades. The first of these areas is the issue of social mobility and its overriding concern with inequality. In this regard it is becoming increasingly obvious that, through the selection and training of individuals, the university has become a major vehicle for upward mobility in modern societies and that higher education represents the key to the attainment of high status positions in such societies (c.f. Glass, 1954; Blau and Duncan, 1967; and Porter, 1965).

The second area of concern wherein the university plays an integral role is that of social and economic development.

As the main center within modern societies for the acquisition of knowledge and skills, the university and other post /secondary institutions are fast becoming the major source of recruits for all but the most unskilled occupations (Bell, 1965). Indeed as Drucker notes concerning rapid increases in higher education enrollments in almost every country

We are undergoing an educational revolution because the work of knowledge is no longer unproductive in terms of goods and services. In the new organization it becomes specifically productive work...when economists talk of "capital" they rarely include "knowledge". Yet this is the only real capital today. The development of educated people is the most important capital formation; their number, quality, and utilization the most meaningful index of the wealth-producing capacity of a country (Drucker, 1961:18).

In this thesis a segment of the university which, more than any other, is inextricably linked to both of these issues is examined. This segment is the professional school.

As institutions within which individuals are educated to fill the elite occupations in modern societies, the professional school constitutes the major, and in most cases in North America, the only, means of entry into the professions. Thus, from the perspective of social mobility, the professional school represents a major means toward and, on the basis of its composition, index of an open society (2).

In addition, since the professional school represents the major formal institution for the training of recruits to

the professions its importance from the perspective of social and economic development cannot be understated. As we shall show later in this chapter, it is the very existence of a university-based system of professional education which gives the professions their special character and facilitates not only the development of professional knowledge and skills but also the maintenance of professional ideology. Thus, the professional school is important not only as a vehicle for upward mobility but also as the centre for the socialization and training of recruits to the professions.

This study, while concerned with the functions of the professional school in both of these contexts, places special emphasis on the problem of the process by which professional ideology is transmitted to the professional recruit. Its purposes are to investigate the process of socialization as it occurs in the professional school and to test hypotheses concerning the effect of the professional school on the professional role orientations of the students it recruits.

In carrying out this investigation, data will be utilized from a national study of Canadian dental education conducted from 1970-71 (3). In this examination, changes in the level and direction of the role orientations (viewed here as components of culture or ideology) of dental students are related to a number of characteristics of the dental school in an attempt to understand the conditions which facilitate or impede the adoption of various role

orientations by students. In operational terms, the question which guides this inquiry is: What factors within the dental school account for variation in the level and direction of changes in the role orientation of dental students? Stated in this way, the central problem of this thesis is related, not only to an interest in the mechanisms by which the professions transmit their culture to subsequent generations of recruits but also to a more general concern with the conditions under which schools and other agencies of socialization influence those who pass through them (4).

While the professional school and its role in the transmission of professional culture represents the primary focus of this inquiry, a brief comment should be made about the process of recruitment as it relates to socialization. Consideration of recruitment is crucial to the question of the effect of the professional school for both substantive and methodological reasons. Inasmuch as any study of socialization needs to consider who is being socialized and what attitudes and orientations they bring with them into the socialization setting, concern with recruitment represents an essential comment of this inquiry. Methodologically, recruitment is also important given the nature of the data utilized in this thesis. Because these data are cross-sectional (and thereby involve the comparison of different cohorts), the measurement of changes in students' role orientations must take into account the possibility that differences between cohorts are due to

variations in recruitment and not the school. Both of these points will, of course, be discussed in greater detail later in this study.

Before developing the specific hypotheses which will be tested in this thesis, the relationship of our concern with the effect of the professional school to a number of general issues in the literature on the professions and some current problems in dentistry will be examined.

The Professions, Professional Education, and Society

One of the most noteworthy changes which has occurred in the occupational systems of modern societies has been the development of a group of occupations which has become known as the "professions". While a number of these occupations, such as medicine and law, have existed almost from time immemorial, the development of these characteristics within them associated with "professionalism" has only occurred within the past two centuries (Carr-Saunders and Wilson, 1933; Reader, 1966). During this time, both traditional and newly emergent occupations have become "professionalized" at such a rate that, as one commentator notes, "an industrializing society is a professionalizing society" (Goode, 1960).

Concomitant with this increasing prevalence of the professions in modern societies is the increased dependence of these societies on the "smooth functioning" of the professions. What Krause (1971) terms the "crisis relevant functions" of the professions underscores the importance of

their tasks for society. As Parsons states:

It seems evident that many of the most important features of our society are to a considerable extent dependent upon the smooth functioning of the professions. Both the pursuit and the application of science and liberal learning are predominately carried out in a professional context. Their results have become so closely interwoven in the fabric of modern society that it is difficult to imagine how it could exist without basic structural changes if they were seriously impaired (Parsons, 1954:35).

Given the importance of the professions for modern societies the attempt by investigators to understand those factors which are associated with their growth and development comes as little surprise. While this concern has led researchers into numerous lines of inquiry, few have been as fruitful in contributing to an understanding of the nature and functioning of the professions as the study of the professional school. The central importance of the professional school as a focus for the analysis of the professions and professionalization has been succinctly underlined by Parsons who notes, "As the institutional structure of the professions has crystallized, the university-academy complex has become its center" (Parsons, 1961:536). This central role of the university based system of professional training is also pointed to by Butts (1955) who indicates that it was the development of the university, not only as a center for the acquisition of knowledge but also for the creation of new knowledge which fostered the growth of the professions.

The key role played by the professional school in the

process of professionalization is evident in the work of a number of investigators who have attempted to chart the transition from occupational to professional status (Hughes, 1958, Wilensky, 1964). For example, as Wilensky notes, the development of occupational training carried out under the auspices of the university, is a crucial factor in the process of professionalization:

...the question of training soon arises, the early recruits or client public or less often a professional association press for the establishment of a training school..if these training schools do not begin within the universities..they always eventually seek contact with the universities and there is a steady development of standard courses of study, academic degrees and research programs to expand the base of knowledge (Wilensky, 1964:142).

As a result the university functions today, not only as a generalized intellectual environment for the existing professions but also because of its decisions concerning the implementation of new occupational training programs, as a gatekeeper for those numerous occupations which seek professional status.

Thus, the professional school is an important focus for the analysis of the professions for, as Carr-Saunders and Wilson (1933:247) note in an early study of the professions, "it is the existence of specialized intellectual techniques acquired as a result of prolonged training which gives rise to professionalism and account for its particular features."

While most analysts of the professions would agree with the claim that training in a body of specialized intellectual techniques is a basic feature of those

occupations which claim professional status, not all agree on the relationship of this feature to other characteristics of the professions. In this regard at least three different frameworks have been utilized to link this attribute to other characteristics of the professions.

One approach sees the existence of specialized intellectual techniques simply as one of a number of important dimensions which are essential for an occupation to be termed a profession (Greenwood, 1957; Cogan, 1953; Pavalko, 1971). Other dimensions, included are: freedom from lay involvement, relevance to basic social values, a monopoly over functionally specific task areas, a code of ethics, and the existence of a sense of professional community (5).

The major drawback of this approach is that the basis for deciding what is and what is not a profession often rests on the existing professions' own claims about their special properties. In addition, reflecting the atheoretical nature of this perspective, there is a tendency, as Johnson points out for many analysts, (who he labels "trait" theorists), to devise lists of characteristics solely on the basis of consensus among different investigators. As he indicates:

There is little attempt in the 'trait' approach to articulate theoretically the relationship between the elements...In practice most authors are concerned to establish authority for their lists by claiming consensus. Trait theorists in this respect are the more democratic members of the sociological community (Johnson, 1972:24).

A second approach, rather than simply listing the attributes of the professions, attempts to theoretically relate the existence of properties such as specialized intellectual techniques to other characteristics. Barber (1965), for example, attempts to show how the differentia specifica of the professions are limited to four key attributes; a high degree of generalized and systematic knowledge, a primary orientation to community interest, a high degree of social control of behavior through codes of ethics, and a system of rewards (monetary and honorary) that is primarily a set of symbols of work achievement and thus an end in itself. According to Barber the latter three attributes are causally linked to the existence of specialized intellectual techniques. For example, concerning these techniques and the attribute of community interest he notes:

Since generalized and systematic knowledge provides powerful control over nature and society; it is important to society that such knowledge be used in the community interest...(thus) community rather than individual interest is an essential attribute of professional behavior (671).

Partially as a response to both of the approaches outlined above, a third approach sees the relationship between specialized intellectual techniques and other characteristics of the professions as highly problematic. Not only does it question claims about the linkages between these features but also it casts doubts on the very existence of attributes such as a community orientation.

Instead, the third approach views claims about such features as implicit legitimization of those occupations which claim to hold professional status and sees the basic function of such status as the mystification of consumers (Lieberman, 1970; Johnson, 1972).

As we shall see below, at no point does the question of the role of the professional school in the socialization of recruits become more crucial than with regard to this apparent conflict between the second and third approach. The issue concerns the very nature of the professions and their relationship with society and has as its core the question of the mechanisms by which the activities of the professions are made congruent with the needs of society.

This problem of the relationship between the activities of the professions and the needs of society represents from the perspective of society a difficult dilemma. As Reuschmeyer points out;

[The professions'] high degree of learned competence creates special problems of social control; laymen cannot even set concrete goals for the professional's work. This means that the two most common forms of social control of work in industrial societies; bureaucratic supervision by virtue of formal position and judgement by the customer, are of only limited applicability. The need for social control is, on the other hand, especially urgent because of the values and interests that are at stake (Reuschmeyer, 1964:17).

This problem of social control, as it applies to the Professions, exists at two levels. First, at the level of the individual, it concerns the behavior of the practitioner and the problem of self-interest (Parsons, 1954), while the

second is related to a problem of control at the level of the professional collectivity which is created by the "solution" of the "self-interest" problem. The existence of both problems has, in recent years, given rise to considerable debate concerning the mechanisms and processes by which the activities of the professions become congruent with the needs of society. While this debate has included numerous arguments relative to both levels, two general models (corresponding to the second and third approaches outlined above) have emerged (7). The first, which might be called the structural functional theory of the professions, delineates a series of rather complex mechanisms by which the professions act in the interest of society. From the perspective of this approach professional education plays a central role as vehicle of societal control. The second approach, drawing largely on empirical findings and an analysis of some of the inherent contradictions which exist within the professions, disputes the first and posits instead a number of alternate explanations concerning both the nature of the professional-society relationship and the role of professional education.

The starting point for the structural functionalists in the analysis of the problem of social control at the level of the individual is the anomalous nature professions in modern societies. "Professional men", as Parsons notes, "are neither 'capitalists' nor 'workers', nor are they typically government administrators or 'bureaucrats'. They certainly

are not independent peasant proprietors or members of the small urban proprietary groups" (Parsons, 1954:122).

The fact that one cannot easily fit the professional into any of the standard terminology along the Capitalist - Socialist dichotomy undercores their anomalous nature in modern society (Ben David, 1963). This uniqueness of the professions centers around the supposed basis of action of the individual professional. "A professional man", as Marshall (1939:326) points out, "does not work in order to be paid; he is paid in order to work". Unlike other economic relationships in industrial societies where the dictum caveat emptor is the guiding norm the professional client relationship is marked by the almost total acceptance (within functionally specific task areas) by the client of professional directives. The professional's supposed orientation toward client and collectivity rather than self has interested sociologists since Durkheim and generated a good deal of controversy on the nature of professional values much of which focusses attention on the grounding of such values in professional education.

Durkheim's overriding concern with the problems of social stability and control led him directly to the professions because of the particular form of internal control which they displayed. He held that, with the collapse of societal integration on the basis of shared moral principles (mechanical solidarity) brought about the division of labour, a new moral order at the level of occupations was essential to societal cohesion. It was this

form of organization based on moral principles which he saw as the key characteristic of the professions and held as a model for other occupations (Durkheim, 1957).

This type of professional organization, based on moral principles, which so interested Durkheim, also received the attention of later sociologists notably Talcott Parsons. Parsons' concern with the professions was based on the observation that while professionalism was increasingly becoming a dominant feature of industrial society, the nature of the linkage of the professions with such societies could not be explained in terms of the traditional ideological alternatives of capitalism versus socialism (c.f. Parsons, 1969). He was especially puzzled by the fact that the professions could exist isolated from the usual mechanisms of social control, and yet, still appear to serve the interests of society. Unlike, Marshall or Carr-Saunders and Wilson, Parsons was reluctant to view the professions as representing a new social ideology in which practitioners act on the basis of altruism rather than self interest. Indeed, he stresses that the professional, like the private entrepreneur, is motivated to success in his chosen field. It was these observations which led him away from the narrow rationalist view of self interest to a more subtle perspective in which self interest was seen as a function of an individual's "definition of the situation" (1954:31). As a result of this conceptual shift the problem was solved for Parsons (as he made clear in his thesis on the professional client relationship) by the shared orientation of

professional men to their professional collectivity or client rather than to self.

Implicit in this notion of professional control is a model which specifies how individual practitioners come to develop such a collectivity or client orientation. A crucial element in this process is the professional school. The functions of the professional school in this regard are stated explicitly by Barber who outlines the mechanisms by which it inculcates the recruit with professional values.

So far as normative standards of community orientation (or ethics) are concerned the university professional school has certain essential functions. The university professional school sees to the ethical training of its students as well as to their other learning. Some of this ethical training is explicit, in the form of teaching professional codes; some of it is emersed with what is ostensibly only the learning of substantive knowledge; and some of it is implicit in the behavior of the staff. University professional school staff members often come to serve as ethical role models for their students and as guides to conscience after the students have themselves become mature practicing professionals (Barber, 1965:122).

Thus, from the structural-functionalist perspective an important mechanism of social control of the professions is the process of professional training wherein the neophyte acquires not only specialized intellectual skills but also a collectivity orientation (9).

This view of the nature of professional control at the level of the individual practitioner has been disputed by critics on at least two grounds. First, the hypothesized dual function of the professional school

(the transmission of scientific knowledge and skills and the indoctrination of students with a service orientation) are viewed as incompatible. Since the nature of training in the professional school consists largely of developing an impersonal "objective" orientation to the subject matter, how can the professional emerge with a service orientation? As Johnson indicates;

On the one hand altruistic motivation and a collectivity orientation has been imputed to the professional and on the other he is said on the basis of empirical research to suffer from a trained incapacity for social responsibility (Johnson, 1972:17)

The second basis of criticism of the functionalist model draws on empirical work on professional socialization which appears to suggest that students in the professional school undergo far less change in terms of such things as ethics and a collective orientation than conventional wisdom indicates. For example, research evidence by Becker (1961) on medical students and by Sherlock and Morris (1972) on dental students suggest that students change very little (10). If control of practitioners does not come about as a result of socialization, how does it? At least part of the answer is hinted at by Freidson, who notes:

There is some very persuasive evidence that "socialization" does not explain some important elements of professional performance half so well as the organization of the immediate work environment (Friedson, 1970:252).

At the crux of this debate concerning the mechanisms of social control at the level of the individual are conflicting assumptions about the nature of professional socialization. According to structural functionalists such

as Parsons and Barber, social control at the level of the individual comes about through the shared orientations of professionals toward client, profession and community, rather than self. Implicit in their model is the view that these orientations are, at least partially, the result of the socialization process in the professional school. This conclusion is questioned by a number of analysts on both empirical and theoretical grounds. The truth of either view rests largely on the validity of assumptions about the effect of the professional school. The extent to which and under what conditions the professional school actually carries out this function is a matter which will be empirically examined in this thesis.

While the major focus of debate on social control of the professions has been at the level of the individual practitioner, the problem of control also exists at the level of the professional collectivity. The matter of social control at this level follows directly from considerations of the mechanisms of control at the level of the individual practitioner. As was pointed out above, according to the functionalist theory, one of the major distinguishing features of the professions is that the basis of their members action is a collectivity rather than a self orientation. This orientation, along with more general "definitions of the situation", act as the major mechanisms of control of the individual practitioner. However, granted the validity of the claim that individual practitioners are oriented more to their professional colleagues than

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themselves, this does not resolve the problem of professional control since the institutional milieu within which the individual practitioner operates and toward which he is oriented may itself function as an impediment to the full realization of society's interests.

An example of such a milieu, would be in North American medicine, the individual fee-for-service method of payment for health care delivery within which the physician practices; or for the military profession the complex decision-making structure which characterizes the military chain of command in which the individual officer must act, or within the classroom the institutionalized norm that material be presented to pupils in terms of more or less rigidly defined subject areas.

These contextual features of the professions play an important role in terms of both the quality and quantity of service which they render and create problems which in a sense are independent of those related to the 'motivation' of the individual practitioner. For example, a physician may practice on the basis of an orientation toward the medical professions as a whole and act in terms of specific constraints such as ethical guidelines developed by the profession such that he is "controlled". At the same time, however, the very nature of his practice and the ethical guidelines which legitimate it may themselves act as impediments to the provision of adequate services and may also be in need of control.

In the analysis of the mechanisms of social control at

this level, analysts have again offered competing explanations. From the perspective of structural functionalists one of the major sources of such control, is the university-based professional school. It acts as one of the major links between the society's need for service and the professional's orientation toward such things as colleague approval and professional knowledge. As Simpson points out:

The university professional schools are increasingly the centers of power and communication within the professions and they are the main points of contact between the professions and the broader demands of society. The salaried university professional's insulation from the profit system makes it easy for him to maintain an orientation consistent with societal values. Society clamors for ideas from the university that will improve professional service: agencies of government call on the faculties of professional schools for policy consultation and put them on commissions to devise new ways of improving client service. In the universities the knowledge orientation prevails but is kept linked with application; in this way generalized professional values remain congruent with the needs of the larger collectivity.
(Simpson, 1971:268)

In this way the professional school is seen not only as an agency for the socialization of the recruit into the value system of the profession but also as an institution responsible for realignment and change of the value system itself such that it is consistent with the dominant needs of society.

Critics of this view assert that the professional school acts not as a source of change in the organization of the professions but rather functions to maintain the status quo.

They point to the fact that professional schools are accredited by committees representing the professions at large as ample evidence of the improbability of professional schools acting as agents for structural or ideological changes within the professions. Instead they view change within the professions as largely the result of government policy and the intersection of consumer and professional interest groups at the national level. (Lieberman, 1970).

As in the case of the debate concerning the mechanisms of social control at the level of the individual practitioner, the issue at the level of the professional collectivity is closely linked to assumptions about the nature and functions of professional education. In this thesis, empirical findings from a study of one profession are presented as a contribution to an understanding of the functions of the professional school and the nature of the professions in modern societies.

Dentistry and Dental Education in Canadian Society

In the previous section a key issue concerning the mechanisms by which the activities of the professions become consistent with the needs of society was discussed. According to one of the views which was outlined above, the professional school plays a crucial role in this process through its influence on the professional recruit. A second model which was presented questions this influence which is credited to the professional school and instead posits alternate mechanisms such as social policy and the

intersection of national interest groups, as primary agents of change in the professions.

At the core of this debate concerning the mechanisms by which the interests of the professions and society remain consistent are conflicting assumptions about the influence of the professional school. In this study, we empirically assess these assumptions with reference to dentistry and dental education in Canada.

Dentistry displays a number of features which make it well suited to such an investigation. First, as a profession, its history and sequence of development has been much like that of other professions, notably medicine and law, and second, as a result of a number of factors, dentistry in Canada currently finds itself in the position of meeting only part of the dental needs of the Canadian public.

Indeed, with rising demands for dental services far outstripping the entry of new dental graduates into the labour force, there exists an increasing consensus among analysts both within and outside of the dental profession that there is a widening gap between the productivity of the dental profession and the needs of the Canadian public (Ad hoc Committee of Dental Auxiliaries, 1971; House, 1970). Given this situation, a study of Canadian dental education offers an excellent opportunity to examine the role of the dental school in facilitating the transition to more productive forms of dental practice. Before examining this current shortage of dental services a brief history of

dentistry will be outlined in an attempt to isolate a number of factors responsible for this imbalance between the demand for dental services and the supply of such service.

Because of the ubiquitousness of dental disease, the type of work which we normally associate with dentistry has been conducted by various occupations since antiquity (the most well known being barbering). The rise of dentistry as a separate profession is associated with the early scientific discoveries of the eighteenth century French practitioner Pierre Fuchard and the founding of the first dental schools in Europe and North America (Weinburger, 1948). These developments gave dentistry a theoretical basis and an arena for training recruits, both of which constitute the major prerequisites of professional status.

Since its eighteenth century beginnings the growth of dentistry as a profession has been shaped by three interrelated factors; (1) its relationship with the medical profession, (2) the formation of the dental schools and, (3) increases in the demand (and need) for dental services.

Because of the dental profession's concern with disease processes, it has since its conception been closely linked to the medical profession with which it shares a common theoretical basis. While this relationship has been marked by a number of "crisis" periods (especially in Europe) in which the legitimacy of dentistry as a separate profession was questioned by the medical profession, both professions have in general evolved in a complementary manner. With relatively recent discoveries concerning the importance of

the "oral cavity" for the diagnosis and treatment of systemic disease and an expressed commitment by both professions toward total patient care, there are indications that the extent of contact between the two professions is increasing (Hollingshead, 1961).

The development of dental education both in Europe and North America reflects this close relationship. Many of the early dental schools were actually appendages to pre-existing medical colleges. The curricula of the present day dental school mirrors to a great extent that of the medical school both in terms of years of formal training and the patterning of theoretical and practical courses.

That the dental school currently has a close relationship with its medical counterpart is indicated by the fact that at most schools basic science courses are prepared for dental and medical students by the same faculty members. In some cases the influence of the medical professions even extends to examination and testing of dental graduates for specialty degrees. In Britain for example, students taking advanced dental degrees are required to take examinations set by the Royal College of Surgeons -- a medical association (Young and Smith, 1973).

The establishment of the first dental schools in the nineteenth century, apart from facilitating the development of dentistry as a separate profession, also had the effect of allowing dental associations to control entry into the profession and set minimum standards for certification. With the increases in the number of dental schools in the last

part of the nineteenth and into the twentieth century, both the quality and availability of dental manpower increased rapidly. As Young and Striffler note concerning this change in the United States:

This quick growth is dramatically illustrated by the fact that the number of persons serviced by each dentist dropped steadily and rapidly over a seventy year period from 5,500 in 1860 to 1,700 in 1950 -- this despite a burgeoning of the total population to be served (Young and Striffler, 1969:125).

While the development of a theoretical base, much of which is drawn from medicine, and the establishment of independent dental schools have contributed to both the legitimization of dentistry as a profession and increased the supply of dental services available to the public, a third factor, the increasing demand for such services, has had perhaps the most significant influence on the current status of the profession, not only in Canada but in most modern industrial societies.

This increasing demand is the result of numerous changes both in the structure of modern society and the dental professions. In Canada and the United States these changes have included significant increases in the general education level of the population and greater access to dental health information, increased affluence which has meant that greater numbers of individuals can afford to pay for dental services, and the shift of a large proportion of the population from rural to urban areas thereby giving more people ready access to dental care facilities. At the same time that these changes have occurred, scientific

innovations in the dental profession such as the improvement of clinical techniques and the development of better local anaesthetics have decreased the "pain" involved in seeing the dentists and thus removed one of the major impediments to visiting the dentists (11).

The net result of these developments has been an increasing demand for dental services, and as a corollary, a shortage in the supply of dental health manpower. In Canada this shortage has reached the point at which, as one recent report stated:

There is a general consensus among dental practitioners and others in Canada that the profession at the present time is able to provide about one-third of the total treatment services required

(Ad hoc Committee and Dental Auxiliaries, 1971). In the United States the situation is relatively the same (c.f. Newman and Anderson, 1972). In fact indications are that with the introduction of pre-paid dental insurance programs and other similar funding schemes and a consequent removal of financial constraints on the would-be patient, the situation will get worse.

In the midst of this shortage of dentists many suggestions and plans have been put forward to provide more dental services and alleviate the strain on an already overtaxed system. In the light of numerous reports and studies (c.f. McFarlane, 1965; Hall, 1965; Pouse, 1970) it is becoming increasingly obvious that a number of steps must be taken to increase the supply of dental care services. While some of these plans, such as the construction of new dental schools, have already been partly implemented, other

proposals which include basic changes in the structure of dental practice have been put forward. These proposals, which have wide ranging implications for future dental programs are at various stages of implementations at present. They include: (1) The increased utilization of dental auxiliary personnel; (2) the expansion of the range of duties which auxiliary personnel may legally perform; (3) changes in the traditional duties which dentists themselves perform with increased emphasis placed on the role of the dentists as a diagnostician; (4) increases in the size of dental practice; and (5) increased emphasis in the prevention of dental disease. These changes would have the effect of, both, reducing the demand for dental services through preventative programs and increasing the supply of dental services.

In the process of implementing these changes, dental education plays, at least theoretically, a key role. According to one view advanced earlier the professional school acts to keep the objectives and orientations of the professions consistent with the needs of society because of the "innovative enlightenment" of its faculty who play a crucial role in socializing professional recruits.

In this study we examine this view by investigating the socialization process in the dental school and more specifically the impact of the school on the student. We ask, "how does the dental school influence students' orientations toward innovations in dental care delivery?" and "What influence do more 'innovative faculty members'

have on these orientations?" These questions are important both to our general understanding of the mechanisms of control and change in the professions and from the perspective of social policy.

From the perspective of social policy, dental education is important not only because it determines the actual number of new dentists entering the labour force, but also, because of its potential role, through the recruitment and socialization of dental recruits, in facilitating the transformation to more productive forms of dental practice (12). Within this role the dental school is seen as the initial contact between the professional recruit and the profession, influencing the students' predisposition to enter certain types of practice, to utilize auxiliary personnel, to practice in certain geographic regions, and in short, a wide range of students' career attitudes and aspirations. This thesis focuses on this latter function of the dental school. The findings presented below attempt to clarify both how and under what conditions the dental school transforms the professional orientations of its recruits, to make them more consistent with the needs of society. Thus, this study can hopefully provide those who wish to change the practice of dentistry with an understanding of the current influence of dental education on the development of new forms of dental care delivery.

FOOTNOTES FOR CHAPTER ONE

¹For a general treatment of the field of adult socialization, see Brim and Wheeler (1966); Sewell (1963); Levinson (1967); Rosow (1963); Moore (1969); and Becker (1964). For examinations of specific institutional settings, see Dornbusch (1958), the military; Huhme (1960), the seminary; Goffman (1962), the mental hospital; and Clemmer (1958), the prison.

²For a further examination of this function of the professional school, see Ben-David (1965) and Hughes (1959a). As Hughes notes, "whatever else the word 'profession' may mean, it is in modern English, a symbol of high ranking among occupations".

³This study was sponsored by the Association of Canadian Faculties of Dentistry with Dean J.W. Neilson, University of Manitoba Dental College as Principal Investigator, with support provided by the Canadian Government (National Health Grant 607-1-585). For a more detailed history of this project, see Chapter 4.

⁴As Olesen and Whittaker note: "Three streams of sociological thought and research emerge in the study of professional socialization, each with its own traditions, conceptual problems and boundaries which condone off and insulate the particular subsector. These streams are the study of occupations, the analysis of individual change and the scrutiny of social institutions", Olesen and Whittaker (1968:24).

⁵This attempt to list the characteristics of the professions has led investigators anywhere from twenty-three traits (Cogan, 1953) to two (Goode, 1960). In this attempt to isolate the major features of a profession three approaches may be cited: One examines attributes of established profession (Pavalko, 1971), a second analyzes those occupations which have been unable to acquire professional status (Denzin, 1965), while the third attempts to construct an ideal type which specifies the nature of a hypothesized "pure" profession. For an analysis and critique of these approaches, see Johnson (1972); and Ben-David (1965).

⁶Millerson (1964) goes so far as to suggest that the problem with this approach is not only due to authors accepting the professions' own claims about themselves, but also to analysts of the professions, themselves often presenting attributes with their own occupations in mind.

⁷A third approach roughly corresponding to the "trait" model of the professions can also be distinguished. It is not dealt with here because its contribution, while useful, would appear tangential to the central issues considered. This approach is characterized by rather general statements and research evidence on the nature of professional differentiation. However, as in the case of attempts to define the attributes of the profession, little attempt is made to specify exactly how such differentiation leads to congruence between the professions and society. Some representative works include; Smith (1958), Bucher and Strauss (1961), and Collins (1968).

⁸In Durkheim's view, the role of such moral principles at the level of occupations would be the legitimization of those rules which govern men's day to day activities. As he states "...the discipline laid down by an individual and imposed by him in military fashion on other individuals who in point of fact are not concerned with wanting them, is confused by us with a corrective discipline to which the members of a group are committed. Such a discipline can only be maintained if it rests on a state of public opinion and has its roots in morals, it is the morals that count." Durkheim (1957). For a further elaboration of this point see also Durkheim's preface to the second edition of "The Division of Labor in Society", (1964).

⁹This point is stated explicitly by Merton (1957:76-77).

¹⁰The fact that students undergo little change is also supported by numerous others, for example, Lortie (1959), Kreisberg and Treeman (1969), Helfrich and Quarantelli (1974).

¹¹For a discussion of some of these developments and their influence on dentistry see; Tuescher (1966), Watt (1968), MacFarlane (1965), Hollingshead (1961), and Kobrin (1959).

¹²For an elaboration of this point in the dental literature see; Walsh (1967), and Haskew (1963).

CHAPTER TWO

FROM NEOPHYTE TO PRACTITIONER: SOME PRELIMINARIES TO
A CONCEPTUAL MODEL OF PROFESSIONAL SOCIALIZATION

In the previous chapter the problem of this thesis was outlined in general terms and related to a number of issues in the theory of the professions and to some current problems in the delivery of dental care in Canada. In this chapter, this problem is re-examined in greater depth and, on the basis of an assessment of the sociological literature on professional education, some essential components of a model of professional education are isolated. In the following chapter these components will be brought together to form a conceptual model from which hypotheses are drawn to be tested in the remainder of this thesis.

As stated in Chapter One, the problem to which this thesis addresses itself concerns the role of the professional school in the socialization of the professional recruit. More specifically, the purpose of this analysis is to develop and test a model which specifies the conditions under which such influence varies. In the context of the discussion in Chapter One this problem has relevance: (1) in an applied sense, in that it is concerned both with the question of what role the dental school is currently playing in facilitating the transition to new, more productive, forms of dental practice and with the related question of what changes or alterations might be made in order to alter the influence of the dental school, and, (2) in a theoretical sense, given the supposed importance of the professional school, it examines not only some of the conditions under which the professional school acts as an agent of change, but also, the model which is developed for

understanding the influence of the professional school places heavy weight on the role of the faculty and thus indirectly tests Simpsons' (1971) hypothesis concerning their role as agents of change within the professions.

Before discussing the literature on professional socialization as it is related to this problem, a brief note should be made on the types of "influence" with which this thesis is concerned. Students going through the professional school are obviously influenced in a great many ways; they learn new facts and knowledge about their chosen profession, they pick up a jargon and acquire various intellectual or manual skills, they develop and crystallize their opinions on various subjects, they find themselves with a new group of friends, and must cope with different types of social relationships. (1) This thesis is concerned with a particular subset of changes which students may undergo -- with what was earlier termed "students' acquisition of professional culture of ideology". The term "culture" is used to distinguish between the scientific and technical knowledge which the student acquires and the morals, principles, attitudes, opinions and beliefs which are also related to the process of becoming a professional. The interest of this thesis is with one particular dimension of such cultural level changes which students may undergo -- this dimension we have termed "professional role orientations" (2). While this term will be operationally defined in Chapter 4, it is useful, at this point, to offer a general conceptual definition.

The term "professional role orientation" is used here primarily as an analytical device for summarizing an individual's position in terms of various occupationally relevant issues, opinions, beliefs, and attitudes. As an observer category, individuals who display the various concrete attitudes and beliefs which it subsumes, may not necessarily be aware that they hold an "orientation" as such. Inasmuch as our concern is with "professional" role orientation, we are not interested in all attitudes and beliefs which an individual may hold but only those pertaining to his work and his relationship to his clients and profession. Since such orientations can be conceived of in terms of a continuum (eg. liberalism versus conservatism) our interest is not only with the amount or level of influence which the school exerts on the students' professional role orientation but also with the direction of such influence.

The remainder of this chapter consists of a general analysis of the literature on professional socialization, in an attempt to discover what generalizations can be drawn from past research which can act as a basis for a model of professional socialization. As a starting point in this analysis the general nature of professional socialization is discussed and contrasted with other forms of socialization.

Socialization like most other concepts which have been in use for some time in sociology has many referents and as a phenomenon may be viewed from a number of perspectives.

This essay is concerned with socialization as it occurs in adult life and, more specifically, when it takes place in an organization whose goals include the "changing" (eg. training for acquisition of skills, the development of attitudes and values, behavior modification, and thought reform) of individuals.

The study of socialization at this level is quite different in a number of respects from the study of socialization at the level of the child. In the context of early childhood, which has been the major arena for the study of socialization, it represents a concern with the "adaptive" nature of the child's social learning. What is stressed is an essentially functional view of socialization. For instance Elkin defines socialization as: "the process by which someone learns the ways of a given society or social group well enough so that he can function within it" (Elkin, 1960:4). Similarly Brim defines socialization as: "the process by which individuals acquire the knowledge, skills, and dispositions that enable him to participate as more or less effective members of groups and the society" (Brim, 1966). Others also reflect this view of socialization as essentially a "functional" process, enabling individuals to participate effectively in society (Aberle, 1961; Child, 1954; Parsons, 1964).

This restriction of the concept of socialization to only those processes which lead to maximal adjustment and adaptation within a given social order is limited and, especially in the context of adult socialization, neglects

many significant forms of social influence simply because of their dysfunctional nature. For instance, a major source of social influence within the prison is the inmate subculture; this subculture may have an "impact" on the individual which is essentially dysfunctional (in that it may increase the chances of the individual committing further crimes when he leaves the prison). This process of "acquiring" aspects of inmate culture represents a legitimate form of socialization (characterized by many mechanisms of learning and adjustment which are common to more "functional" socialization), which should not be overlooked (c.f. Wrong, 1964). Thus, in this essay, socialization is defined as simply the process by which an individual undergoes development or change at the cognitive, affective, or behavioral level. Unlike maturation which is also a process of development and change, socialization takes place in an interactive setting such that alterations would not have come about in the absence of such a "setting".

This emphasis on the interpersonal setting in which socialization occurs, reflects a sociological rather than psychological view of this process. The sociological perspective when applied to socialization "concentrates on characteristics of specific groups or institutions in which socialization occurs." (Goslin, 1969:145) This may be contrasted with the psychological approach which places emphasis on the individual being socialized and the role which various mechanisms such as perception, motivation and cognition play in the process. This study reflects a

sociological approach inasmuch as its primary objective is to assess the role of the professional school in the socialization of recruits. However, as will become apparent later in this chapter, examination of the impact of a socializing organization must take into account the backgrounds of those who enter such organizations. (3)

The study of socialization in adult life is significantly different from that of childhood socialization in at least two ways. In the first place, adult socialization is most often conceived of as a process of "acculturation" in which individual outcomes are, in large measure, a function of the interplay between complex institutional experiences and the "state" of the individual prior to entry into the socialization setting. This is contrasted with early childhood socialization in which an individual is often seen as a "tabula rasa" who is acted upon or enculturated by the family or early school experiences.

The second major difference between childhood and adult socialization concerns the type of changes or adjustments which most often interest investigators at each level. With childhood socialization the greatest emphasis is placed on the learning and internalization of basic social symbols, the development of personality, and the acquisition of basic cognitive skills. Beyond early childhood, examination of socialization becomes less concerned with the acquisition of the elementary "traits" and more directed toward adjusting or changing specific attitudes or behavior. As Clausen

points out, "Socialization efforts beyond the period of early childhood training increasingly are directed towards preparing the individual for change or inducing change in his outlook, ways of handling himself, activities and value orientations "(Clausen, 1968:158).

The professional school like other agencies of adult socialization is directed toward inducing such changes. However, the manner in which such changes come about differs (Wheeler, 1969) from other adult socialization settings in many important respects. (1) The professional school is primarily concerned with developmental socialization as opposed to re-socialization. That is, the professional school "builds on" and develops pre-existing skills and beliefs rather than inculcating new forms of such attitudes or behavior dispositions. (2) Within the professional school the pattern of socialization is "serial" in that a relatively fixed amount of time is laid aside for the training of recruits. This differs from both the mental hospital and the prison where the time frame varies from individual to individual. Also, unlike either the prison or the mental hospital, the recruits enter the professional school as cohorts with each cohort being processed in the same period of time. (3) Within the context of the professional school both role and status socialization takes place. Recruits learn not only the necessary knowledge and skills to adequately perform roles but they also acquire a moral outlook, a value system, and a life style commensurate with their "professional" status. In other settings of

adult socialization usually only one of the other of these two forms of socialization is stressed. (4) Professional socialization can also be distinguished from other forms of adult socialization in terms of the procedures and processes which characterize the recruit's entry into, movement through, and exit from, the socializing agency. The entry of the professional student is voluntary and as such a sufficient degree of commitment toward the institution may be assumed. The student's movement through "the system" is characterized by a number of ritualistic ceremonies which mark his progress. His exit includes the receipt of various formal documents indicating a successful completion of his course work. In the professional school the failures of the system are "dropped out" early while in the prison and mental hospital "failures" are kept in longer (Wheeler, 1969).

Another feature of the professional school (not mentioned by Wheeler) which distinguishes it from other adult socialization settings, is that inmates, once they have successfully passed through the institution, become the "peers" of the staff. - (5)

These represent some of the significant features of professional socialization which distinguish it, as a process, from other forms of adult socialization. As we shall see later in this chapter, while there are some important differences between the professional schools and other settings of adult socialization, there are also some striking similarities which can give us insights into the

process of becoming a professional.

Studies of Professional Socialization: A Review of the Literature

A number of researchers have directed their attention to the problem of the impact of the professional school on its students. For example Becker and his colleagues in their study of the Kansas School of Medicine asked "What did the medical school do to its students other than giving them technical training?" (Becker et al, 1961: 135) Similarly Olesen and Whittaker (1968) in their investigation of student nurses attempted to show, among other things, the way in which students managed the vicissitudes of the nursing school and how this led them to adopt various occupational images. Sherlock and Morris (1972), using longitudinal data, investigated the training of dental students and the relation of passage through the dental school to outcomes such as a decline in ethics and a rise in cynicism. In still another study of professional socialization, this time concerned with legal education, Lortie (1959) related students' socialization experiences and early careers to the "type" of law school they attended. In a similar vein, Merton (1957) and his associates, in one of the earlier studies of professional schools, examined the impact of changing curricula on medical students' social attitudes. Other studies of social work, engineering, pharmacy, architecture, the clergy and the military have also focussed on the training of the professional and examined the impact of the professional

school (6).

Given the relatively large amount of work on professional socialization from which only a few examples have been cited, can any conclusions be drawn from this literature about the conditions under which the professional school "influences" its recruits? The answer to this question, based on an examination of this literature, is that while a number of potential sources of influence are consistently pointed out, there is more confusion and controversy than consensus on the conditions under which such "sources" actually influence students.

In this sense, the literature on professional socialization conforms largely to Bloom's recent assessment of the entire field on "school effects";

Three decades ago studies of the effect of education on students' attitudes seemed to establish with finality the importance of the school in the making and changing of social values..today, however, this picture is considerably altered. Interest in the effect of education on students' attitudes is more active than ever at all age levels, but earlier certainties about the source and direction of such influence have yielded to doubts. There is indeed a doubt whether at higher educational levels, schools may have influence at all on student values (Bloom, 1965:144).

That the literature is inconclusive regarding the role of the professional school in the socialization of recruits can be attributed to a number of factors. The most important of these is that, as yet, no theory of professional socialization has been developed to guide research in this area. Instead, investigators examine the phenomenon of professional socialization without a clear conceptual basis which would make a comparison of findings.

in the various fields possible. For example, investigators have attempted to relate changes in students' attitudes and values to a myriad of school characteristics ranging from the structure of the student subculture, the attitudes of faculty members and the curricula of the school to the age of the school and even its physical shape. Furthermore, since differing theoretical viewpoints are used even when investigators examine the same aspect of the professional school, they often reach conflicting conclusions.

An excellent example of this is the analysis of the consequences of dissection and autopsy experiences for medical students as reported by Parker et al. (1961) and Fox (1967). As Levinson indicates, the two studies reach diametrically opposed conclusions on the significance of this experience for the socialization of medical students.

Fox obtains evidence that her student subjects are emotionally moved and often troubled by their dissection and autopsy experiences. These experiences evoke fantasies and anxieties which are handled by various forms of ego defense, which in turn influence students' efforts at finding a balance of detachment and concern in their relationships with patients. The search for "detached concern" is a complex process having combined motivational, defensive, and cognitive aspects. In Fox's view it is an essential part of the students' socialization and has crucial implications for his evolving professional role.

According to the Kansas Report, the dissection and autopsy situations have a simpler, more rational significance for students. After a brief initial malaise, students quickly come to regard these situations as "professionals". Inappropriate feelings and fantasies are swept aside in the adaptive search for technical competence, for grades, and for keeping out of trouble with the faculty. (Levinson, 1967:207).

A further feature of the literature which makes it difficult to garner generalizations is that not only are the theoretical frameworks, perspectives, and research strategies of the investigators often not comparable, but the value orientations of researchers are also at odds. Gouldner refers to a specific example of this when writing about the studies of medical education by what he terms the Chicago (Ficker, et al. 1961) and the Columbia (Merton and Reader, 1958) groups.

In recent studies of medicine conducted by Columbia and Chicago trained men..it is difficult to escape the feeling that the former are more respectful of the medical establishment than the Chicagoans, that they more readily regard it as terms of its own claims and are more prone to view it as a noble profession. Chicagoans, however, tend to be uneasy about the very idea of a "profession" as a tool for study. Believing instead that the notion of an occupation provides more basic guidelines for study and arguing that occupations as diverse as the nun and the prostitute, or the plumber and the physician reveal the instructive sociological similarities (*) (Gouldner, 1963:207).

In addition to basic differences in the value premises of investigators, a third, and perhaps most important reason exists for the poverty of generalizations from this research. This is the fact, that, with some exceptions (eg. Sherlock and Morris, 1973), the majority of these studies have been "case studies." In this respect the literature on professional socialization suffers from the problems of non-comparability which characterize other areas of inquiry into adult socialization, especially those dealing with correctional institutions and mental hospitals.

In spite of these difficulties in arriving at empirical generalizations concerning the impact of the professional school on its recruits, the research literature does point to a number of factors which are related to socialization outcomes. In this section this literature is reviewed in an attempt to isolate and interrelate those factors which must be taken into consideration in developing a model of professional socialization. Inasmuch as this consists of a selective examination (as opposed to an inventory of findings) of this literature and the application of a pre-existing set of categories, a brief note on the nature of these categories is in order.

While an explicit theory of professional socialization has not yet emerged, the literature contains a number of preliminary frameworks which specify the kinds of factors which should be taken into account in the development of such a theory (8). Unfortunately, these have yet to reach the level of specification where they are of value in guiding research. Levinson's "framework" for a theory of adult socialization is indicative of the current state of theoretical development in this field. According to him an analysis of "person-professional" development in institutions of adult socialization must take into account, (1) the person who enters the institution, (2) the socializing environment and the process through which individuals pass, and (3) the of the socialization experience (Levinson, 1967:125).

While models such as Levinson's provide us with some

hints as to the general types of factors which might be included in a model of professional socialization, they are inadequate for two reasons; first, neither of the factors within each category nor their relationship to one another is specified, and, second, they fail to distinguish between factors at different levels within the socializing agency.

This latter problem concerns the "causal relevance" attached to hypotheses which link characteristics of the socialization-environment to the behavior and attitudes of individuals. While individuals may be directly influenced by certain properties of the school, such as its name or the age of its buildings, many of the properties of the school which interest sociologists refer to characteristics of the school which the individual does not come into contact with directly. For example, individuals do not interact with "complex hierarchies" or "bifurcated systems", in the sense that most sociologists use such terms; instead they interact with other individuals. To claim otherwise would be to reify school properties. Such characteristics may, however, be important in determining outcomes of socialization. Thus the problem arises of distinguishing between and subsequently linking factors at various levels within the schools.

The solution to the problem as Campbell and Alexander (1968) note, is to utilize a two step analytic model in which individual influence is viewed as a function of various concrete inter-personal situations, the development of which is facilitated or impeded by more general

characteristics of the school. As they note, "it is necessary to consider the position of the individual within the social structure -- defined in terms of his specific relationship to other members of the collectivity -- before attributing causal relevance to characteristics of the total collectivity." (Campbell and Alexander, 1968) This consideration has important implications for the development of a framework within which previous research can be assessed and from which a model can be generated. It draws attention to the need to distinguish between, and subsequently interrelate, two types of factors.

The first category of what might be termed the interpersonal level concerns the concrete sources of influence within the professional school and the nature of their influence on the recruit. The second refers to general characteristics of the school which constrain the development of interpersonal settings and affect the relationship between various concrete sources of influence. Thus in the context of our concern with the conditions under which the professional school influences the recruit, two types of conditions, one of which is at least partially dependent on the other, must be examined and interrelated.

In addition there exists a third type of factor which is also an important component of a model of professional socialization. It concerns the individual being socialized and his "receptivity" or predisposition to influence. Just as the structure of the professional school can be viewed as a constraint on the development of interpersonal settings

and thus a determinant of the strength of the influence exerted on a given individual, so can the background of an individual predispose him to be more receptive to this influence.

These three categories, taken together, yield at least a preliminary framework (see Figure 1, p.57) which can be used as a tool for sorting out and systematizing previous research. In the next chapter, it will be used to develop a model from which hypotheses can be drawn and tested concerning the effect of professional school on the professional role orientations of the student recruit.

(1) Concrete Sources of Influence Within The Professional School

In the attempt to understand what happens to the student in the professional school, the approach of most investigators has been to explore the relationships between the students and various concrete sources of influence within the school. As might be expected the bulk of this research has focused on the students' relationship both with other students, either as peer groups (Piasek, 1969) or as transmitters of student culture (Olesen and Whittaker, 1968) and with faculty either collectively as a reference group (Wallace, 1966) or individually as role models (Rosen & Fates, 1967; Coker, 1960).

While these studies can provide a "list" of potential sources of influence, there is little indication as to how these are interrelated or the conditions under which one or the other is dominant. Instead, all that these studies

indicate is that sometimes faculty appear to act as the major source of influence while at other times students themselves function in this capacity. For instance, while Wallace (1966) finds law students adopting the attitudes of faculty, Plasek (1969) discovers that dental students adopt attitudes of their peer groups. Similarly while Simpson (1967) observes nursing students changing in their values in the direction of faculty and Seeman (1962) and Mumford (1970) find interns developing behavior patterns like those of the senior staff, studies by Quarantelli (1957) of dental students, and Olesen and Whittaker (1968) of nurses indicate that students reject many faculty attitudes and appear more influenced by other students both with respect to their behavior within the school and the attitudes and values with which they leave.

Much of the reason for this lack of consensus among investigators on the relationship between various sources of influence within the school stems from the "Janus faced" nature of the student's relationship to the professional school. In one sense the neophyte is a junior colleague of faculty, an individual who is in a process of becoming a professional peer of his teachers, while in another sense the novice is a subordinate member of an organization who must somehow adapt to the problems and vicissitudes of his environment.

This latter aspect of the students' role is stressed by Becker, Hughes, Geer, and Strauss (1961) in their study of medical education. For them the professional student is

viewed, not unlike Schutz's (1944) "stranger", as an actor who enters a new culture. Becoming a professional from this perspective is viewed at best as a precarious process which, as Hughes (1959b:75) notes, "does not merely consist of the learning of skills but also an invitation to a lodge, a semi-secret society of people who have cryptic minds and peculiar problems".

In the study of the medical school, this transition from the lay to the professional world was shown to involve, in the early years of training, the setting aside of long term idealistic goals in favour of the short term perspective -- "to make the grade". Out of this analysis comes a view, later developed in more detail by Becker and Carper (1965), that professional education is less characterized by profound changes in students' values and beliefs than by adaptive short run changes in students' attitudes and behavior. For instance, as Becker and Geer note concerning the popular conception that students become cynical as a result of their medical training,

Medical students enter the medical school idealistic about the practice of medicine and the medical profession. They do not lose their idealistic long range perspective but realistically develop a cynical concern with the day to day details of getting through medical school. As they approach graduation, they again openly exhibit an idealistic concern with the problems of practice. (Becker and Geer, 1958:113).

The fate of idealism in medical school underlines for Becker and his colleagues the adaptive nature of much of the students' behavior. Since students are subordinate members

of the medical school they have, by definition, little power to change those factors within the school which are sources of strain and anxiety. Instead, like workers in a factory, they attempt to insulate themselves from many of the pressures of the school and develop a collective subculture which defines the appropriate level and direction of work and acts as a buffer between students and staff.

This view of the professional school is contrasted by that which is evident in an earlier study of medical education conducted by Merton and his associates. In this study the medical student is viewed primarily as a junior colleague or apprentice physician who passes through the medical school and comes increasingly to view himself as a doctor (Huntington, 1957). While the student is influenced by all members of his role set, special emphasis is placed on faculty who act as role models for the student and have a significant impact on their attitudes and career plans (Selvin and Rendall, 1957).

While the differences in findings between the Becker and Merton studies reflect variation in the theoretical and methodological approach of the investigators (not to mention the fact that different schools were studied), the significance of such differences from the perspective of this study is that they indicate the existence of two types of socialization experiences. One draws attention to the students' relationship with the school and the powerlessness of his position while the other to the student's relationship to the profession and his role as "junior"

professional. As a subordinate within the school the students' major source of influence, as in industry, is the primary work group, while as a junior colleague, senior professionals are seen as having the greatest influence.

In the context of building a model of professional socialization, the existence of such differences forces us to ask, not which is right or wrong but, rather, under what conditions does one aspect of the students role become more dominant than the other. That is, under what conditions are student's actions in the school more consistent with the subordinate aspect of their role than the junior colleague component, and vica-versa. This question will be considered at length in the next chapter.

(2) The Effect of the Professional School:

The Characteristics of the Professional School

The second category which was specified in the preliminary framework of professional socialization concerns the characteristics of the professional school. These characteristics were viewed as analytically distinct from concrete settings of interpersonal influence within the school in that they represent the context within which such influence is carried out (9). Thus, consideration of school level properties such as size is seen as complementary to an analysis of specific sources of influence, such as faculty, and their relationship to students.

Given the preponderance of case studies in the

literature on professional schools, it comes as no surprise to find that only a few studies deal with the organizational context of professional socialization. Indeed, excluding those studies within specific professions which match organizational variables, such as funding levels, to outcome measures such as performance on national board examinations, the literature is almost devoid of any attempt to systematically interrelate organizational properties to professional outcomes. Furthermore, those few studies which do exist are usually based on only a small number of schools within a single profession making it difficult to generalize to other schools and other professions. Instead all that emerges from this literature is a number of "hints" that organizational properties might be important. For example, Lortie (1958) in his study of Chicago law students, finds that the "type" of law school which students attended accounts for much of the variation in their early career patterns. Similarly, Deutscher and Montague (1956) examined the nature of socialization into nursing in both religious and non-sectarian hospitals. Lovell (1964) in his examination of West Point cadets attributes significant weight to the changing social composition of the recruit population in explaining the career plans of the cadets.

In each of these three studies some characteristic of the professional school (or training program) was found to be related to differences in students' attitudes, orientations or behavior. While these results, as well as similar findings from the general literature on higher

education, (c.f. Sanford, 1958; Feldman and Newcombe, 1971) underline the importance of various school characteristics in the examination of the impact of the professional school, establishing the ways in which these characteristics actually "influence" students poses major methodological and theoretical problems. Methodological because in some cases one cannot escape the feeling that "program" and "type of university affiliation" do not actually influence students but that students select these on the basis of pre-existing differences in attitudes, values, and circumstances. The cross-sectional nature of many studies dealing with these characteristics reinforces this suspicion.

The theoretical difficulty which is apparent in attempts to assess the impact of various school characteristics on students, concerns the "causal" linkages between such characteristics and the professional recruit. Given that the influence of these characteristics is not "direct" (as that of faculty and student peer groups) but rather indirect, it remains not only to isolate various characteristics but also specify the way in which they "influence" the student. Unfortunately because of the relative scarcity of research on such conditions, no generalizations concerning these linkages can be drawn from the literature on professional socialization.

In the next chapter this problem will be considered at length, and hypotheses will be developed which link school characteristics to changes in student's professional role orientations. (3) The Effect of the Professional School:

Characteristics of Recruits

The third category which was viewed as essential for a model of professional socialization concerns the individual being socialized and his "receptivity" or predisposition to influence. Just as the structure of the professional school can be viewed as a constraint on the development of interpersonal settings and thus a determinant of the strength of the influence exerted on a given individual so can the background of an individual predispose him to be more receptive to this influence.

While most treatments of recruitment which are found in the literature on professional socialization are descriptive accounts of the characteristics of recruits in a particular profession (eg. Fish and Brown, 1966; Theilens, 1957) or directed toward issues such as occupational mobility (Collishaw and Grainger, 1972) or career choice (Quarentelli, 1961a), a number of investigators have attempted to relate the backgrounds of recruits to socialization outcomes.

Two types of background variables have been considered; first, those pertaining to the status and social origins of the individual and second those which reflect various aspects of the student's career choice strategy.

Status characteristics are usually viewed as indicators of general circumstances, either in an individual's background or related to extra-professional role set. These are often viewed as facilitating or impeding the adoption of various attitudes and behavior patterns.

For example, Mumford (1970) found that the extra-professional roles of interns (i.e. father, husband) influenced their career decisions because they limited such things as the length of time they were willing to put aside for specialty preparation. Similarly, Olesen and Whittaker (1968) found that nursing students who were married had quite different career aspirations than those who were single, and that married students tended to react quite differently to various career possibilities presented by faculty.

In a similar way aspects of students' career choice strategies have been linked to various socialization outcomes. For instance, Martin and Patz (1961) in a study of nursing students show how motives of students can act as impediments to their internalization of professional commitment. They note that nursing students who desire to maintain their identities as women will resist the "moulding" process of the professional school. Other studies by Wright (1967) and Isreal and Sjostrand (1968) stress the importance of early role definitions as an aspect of the recruits "entry perspective" which can have a significant effect on his reaction to the socialization experience. For example, Wright, in a study of sociology graduate students, reports that those who enter sociology with an image of the field that does not fit the model of the discipline portrayed by the school, will not only perceive their experience at graduate school in a different way, but also are more likely to lose interest in sociology altogether.

These studies indicate that a wide variety of status characteristics and career choice strategies may be related to the recruits' receptivity to influence in the professional school. Unfortunately, however, when considered in the context of a potential model of professional socialization, these studies, taken as a whole, do little more than indicate the complexity of the overall relationship between the individual recruit and the school. Little or no attempt has been made to interrelate the various findings of previous research into explicit propositions concerning their role in the students' later socialization. For instance, analysts have investigated career choice strategies such as early role definitions but have not attempted in their research to take into account the mediating influence of other factors such as motives or the timing of career decisions. In spite of this, the literature cited does make it clear that attempts to understand the impact of the professional school should take into account differences in the background and entry perspective of professional recruits.

In the next chapter we examine the problem of the impact of the professional school in more general terms and on the basis of the literature reviewed above and findings from studies in other areas a number of hypotheses will be developed which specify the conditions under which the attitudes, values or behavior of recruits are altered.

FIGURE ONE

TYPES OF FACTORS TO CONSIDER
IN A MODEL OF PROFESSIONAL SOCIALIZATION

FOOTNOTES FOR CHAPTER TWO

¹ Rosow (1963) makes the useful distinction between the influence of the professional school on both values and behavior patterns. In the thesis we are primarily concerned with the former type of influence.

² The acquisition of an 'orientation' is common to many forms of adult socialization; as Levine (1969:645) notes:

Entrance into any adult socialization experience requires some break with the past, some rejection of previous beliefs, values and modes of behavior and in essence the acquisition of a new orientation.

³ Indeed, as Goslin points out, understanding the relationship between attributes of the individual being socialized and the socialization setting is the basic problem of socialization theory and research.

⁴ For other treatments of professional socialization which contrast it with different forms of both childhood and adult socialization see Olmstead (1969) or Olesen and Whittaker (1968).

⁵ In this sense, the professional schools represent a context of socialization more like the family than other contexts of adult socialization such as the undergraduate university. As Parsons and Pratt note:

One of the fundamental differences between the family as a socializing system and the university lies in the fact that parents are socializing their children to be in their turn and among other things, themselves parents. Whereas college teachers are socializing only a minority of their students to become teachers and academic professionals. (Parsons and Platt, 1968:122).

⁶ See for example, Towle (1954), Social Work; Becker (1952), Teachers; Klink (1964), Ministers; Lovell (1964), The Military; McCormack (1956), Druggists; New (1958), Osteopathy; Warkov (1965), Law; Brereton (1963), Police; Bryan (1966), Prostitution.

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⁷ In this sense both approaches parrallel the conflicting models of societal control of the professions outlined in chapter one.

⁸ See for example Sherlock and Morris (1973); Levinson (1967); Anderson and Weston (1968).

⁹ For a discussion of various types of such contextual features see Lazarsfeld and Menzel (1959).

CHAPTER THREE

A MODEL OF PROFESSIONAL SOCIALIZATION

The previous chapter dealt with a number of "preliminaries" to a conceptual model of professional socialization. These included the definition of a number of terms used in the thesis, a brief examination of the differences between the professional school and other contexts of socialization, and a general assessment of the current literature organized around three categories of factors which were viewed as essential components of a model of professional socialization.

This chapter develops a conceptual model of professional socialization from which hypotheses are drawn. These hypotheses will be tested in the remainder of the thesis. The purpose of the model is to specify the conditions under which the professional school influences the professional role orientation of the students it recruits. Consistent with the general categories outlined in Chapter Two this model is developed in three stages. First, the nature of the influence exerted by students and faculty on the professional role orientations of the student recruit is considered; second, hypotheses are developed which link a number of school-level characteristics to the strength of the influence exerted on students; and third, the influence of the school on different types of recruits is examined.

In this thesis the term "model" is used to indicate a particular "type" of explanatory formulation which will be developed, and more importantly a specific strategy by which such a formulation will be arrived at.

As an analytical device, a conceptual model (or to use Kempé's (1965) term, a "theoretical" model) is distinctive in at least two ways; first because the elements of a model stand in a one-to-one relationship to a particular subject matter, its scope is more limited than that of a theory. Secondly, as Kaplan (1965) indicates, models differ from theories in as much as theories attempt to explain an "essentially" different phenomenon with the same set of laws, while a model attempts to show that one phenomenon is essentially the same as another (1). As Broadbeck notes:

...when an area about which we already know a good deal is used to suggest laws for an area about which little is known, then the familiar area providing the form of the laws may be called a model for the new area (Broadbeck, 1968:467).

In this thesis the strategy which is used to develop hypotheses concerning the influence of the professional school consists of drawing propositions from other areas and applying them to professional socialization. Inasmuch as assumptions are made about the similarity of professional socialization to these other areas, these formulations may be viewed as models. Like other models certain simplifying assumptions will be made and a number of pertinent factors which obviously play a role in the process under investigation, will not be considered. Thus, for example, faculty will be viewed collectively as a single reference group rather than individually as role models. In addition certain factors which are obviously important, such as the students' extra professional role set will not be considered (2).

(1) Sources of influence in the professional school
and their relationship to the student-recruit

The starting point for this analysis of the effect of the professional school is an examination of the relationship between the two primary sources of influence within the professional school -- ie. students and faculty -- and the nature of their influence on the individual recruit. Given the purpose of this examination as the development of a model of professional socialization and given the analogous nature of models discussed above, the question arises as to what "areas" should be utilized in order to develop such a model?

Given the "Janus faced" nature of professional socialization discussed in Chapter Two, propositions from at least two areas might be applied to the professional school; the first is based on the subordinancy aspect of the students' role while the second is consistent with the student as a junior colleague. That is to say, to view the student primarily as a junior colleague is to suggest one set of hypotheses concerning the influence of the school, while to view him as a subordinate in an organization is to suggest another.

One model would view students as influenced to the greatest extent by staff who act as role models or reference groups. This conception of the student invites a

traditional learning or attitude change model in which students' adoption of faculty attitudes is seen as a function of elements such as cognitive balance (on behalf of the student) and consistency on the part of the faculty. This is contrasted with the opposing view of the students' role which sees them as influenced more by their peers than "staff" (who may indeed represent negative role models or reference groups). This conception of professional socialization implies a conflicting interest model in which students will tend to reject, rather than adopt, faculty attitudes (3).

The possibility of two, seemingly contradictory, models of the student's role poses the problem of which to choose in developing a model of professional socialization (4). The solution to this problem, as outlined below, suggests that both models can be viewed as complementary if seen as reflecting difference in the nature of the student-faculty relationship as it is perceived by students. That is to say, students as a group collectively define their relationship with faculty and depending on this definition display behavior more consistent with either model.

Literature from a number of areas suggests that recruits come to collectively define their relation with staff. As such a given cohort of recruits constitute a reference group for the individual in Sherif's sense of the term, in that it acts as an "anchoring point in the structuring of his perceptual field" (Sherif, 1953:225). While the strength of this influence may vary from setting

to setting, the one general observation from both the literature on institutions of adult socialization and that pertaining to industrial work settings is that a primary function of such reference group is to mediate between staff or management and inmates or workers.

For example in research on thought reform and coercive persuasion by Lifton (1961) and Schein (1962) the importance of inmate groups in shaping the prisoner's perception of the staff is discussed at length by both authors. show how the ability to affect re-socialization rests in large measure on the efficacy of staff attempts at controlling the operation and leadership of prisoner-inmate groups.

Similarly in a study of patterns of communication within the prison, McCleary (1964) presents findings which support the view of the inmate group as a mediator of staff influences. He shows how attempts at changing the "orientation" of a prison from maintaining custody to rehabilitation are thwarted by the action of inmate groups who feel threatened by the change. Studies of mental hospitals by Goffman (1958) and Seigel (1965) present similar evidence indicating the importance of patient culture in "filtering" the individuals perception of the staff.

The literature on educational institutions also supports this contention (c.f. Coleman, 1960). As Feldman and Newcomb conclude on the basis of their general review of the literature on college impacts:

Though faculty members are often individually influential, particularly in respect to career decisions, college faculties do not appear to be responsible for campus-wide impact except where the influence of students' peers and of faculty compliment and reinforce one another (70:124).

That recruits come to collectively define the nature of their relationship with "staff" is also evident in the general literature of formal organizations. Seashore (1954) for instance has shown how the perception of foremen and managers by primary work groups has important consequences for their level of work, while Gouldner (1947), in his study of a gypsum plant, indicated how, under certain conditions, the primary work group may "sabotage" the goals of superordinates (see also Roy, 1952).

On the basis of these findings from a wide variety of organizational settings, it would appear that one of the major functions which the inmate group or peer subculture performs is to mediate between the staff or management and the individual inmate or worker. Applying this principle to the professional school the student peer group and more generally student culture can be viewed as a focus for the student's construction of reality within the school.

The foregoing raises a basic question for this study. If the essential relationship between faculty and student peer groups in the professional school is such that the latter mediates between the former and the individual, under what conditions will this mediation give rise to behavior on the part of the students consistent with the subordinancy model and when will it be such as to facilitate changes congruent with the junior colleague model? In the context

of our concern with changes in students' role orientations, when does this perceptual function of the student collectivity lead to the acceptance of faculty role orientations and when will it result in their rejection? Part of the answer to this question is hinted at by Frank who notes:

A person's feeling of dependency on others may spring from his perception of them as possessing information that would be useful to him, or as being able to help him in a variety of ways.

Perceived power to harm readily induces outward conformity to escape reprisal, but at the same time generates feelings such as resentment which may impede genuine acceptance of the powerful figure's goals or ideas. Perceived power to help seems to be a particularly potent source of influence (Frank, 1963:27).

Frank's notion of "helpfulness" as a major feature in the adoption of attitudes is basically similar to a concept introduced by Seashore (1962) in the attempt to explain the behavior of workers in relation to staff. For Seashore an important factor in determining the extent to which individual workers will produce to meet management goals is the extent to which management are viewed as "supportive". Although this concept is left loosely defined by Seashore as simply to the degree to which management is viewed as concerned with the welfare of the workers and perceived through its action as facilitating their (the workers') goals, it does suggest an important dimension of students' perception of a faculty. This dimension is important because it acts to indicate the nature of the student-faculty relationship vis-a-vis the two models outlined above. If

students are to display behavior consistent with a junior colleague role it seems reasonable that an important condition for the development of an identity congruent with this role, is the feeling on the part of students that their senior professional colleagues are supportive. That is, they perceive the faculty as concerned with helping them become full fledged colleagues, sincerely interested in their day to day welfare and willing to offer assistance when problems arise. Inasmuch as collegiality implies mutual support an essential component for the development of such collegiality is the perception that such support actually exists. When it does not it would be expected that the subordinancy aspect of the students role would become dominant. If student-faculty relations, as they are perceived by students are characterized more by role distance than close association, by ambivalence than by concern and by close and punitive supervision than supportive assistance and counselling, students would be less likely to view themselves as junior colleagues and more apt to reflect the subordinate dimension of their role.

In that both models imply different consequences in terms of students' adoption of faculty orientations, and given perceptions of supportiveness as a key condition for the primacy of either model, it is hypothesized, that:

Hypothesis One: The influence of faculty on students' professional role orientations varies inversely with the extent to which they perceive faculty as non-supportive."

This hypothesis posits a basic condition for students' adoption of faculty orientations as the perception of faculty by students as "supportive" (5). Unfortunately, the term supportive has not yet reached the position in the lexicon of scientific concepts where a complete and unambiguous definition can be provided. In this study this term is used to imply the extent to which the relationship between students and faculty is characterized by a collegiality rather than role distance and ambivalence. In operational terms the items which are used to indicate students' perception of faculty supportiveness are related to matters such as students' perception of the willingness of faculty to discuss personal problems with students in out of class meetings and the extent to which students see faculty as treating them more like 'young dentists' than students (The operationalization of this variable is discussed in Chapter Four). What is important in the use of this term is the assumption that when students view faculty as non-supportive, they will, as a consequence be more likely to view themselves as subordinates and act accordingly, while when faculty is perceived as supportive, students will be more likely to see themselves as junior colleagues and adopt faculty orientations.

(2) Characteristics of the Professional School

In the previous section the relationship between students and faculty (who were seen as the major sources of influence for the individual recruit) was discussed. The

function of the student collectivity was viewed as primarily adaptive in so far as it acts as an interpretive screen for defining the meaning of various events and people within the school. An important part of this perceptual function concerns the extent to which faculty are viewed as "supportive", for as was postulated in Hypothesis One, the influence of the faculty on students' professional role orientations may vary inversely with the degree to which faculty are defined as non-supportive.

While students' perception of faculty supportiveness is viewed as a basic condition for students adoption of faculty attitude, the influence of faculty may also vary in relation to a number of more general characteristics of the school. Specifically, it is hypothesized that students adoption of faculty attitudes will be related to two characteristics of the school -- (1) the degree of consensus among faculty vis-a-vis their professional role orientations and (2) the size of the student body.

Hypothesis Two: "The influence of faculty on students' professional role orientations varies inversely with the size of the student body."

Hypothesis Three: "The influence of the faculty on students' professional role orientations varies directly with the consensus among faculty in terms of their role orientations."

The rationale for viewing size as inversely related to the adoption of faculty attitudes is as follows:

constraints on the development of organizational features, especially, the extent to which the organization develops a formal structure for coordinating the activities of those within it (Flan and Schroeder, 1972; Etzioni, 1969). In large organizations, the problems of coordination and control, necessitate the formalization of both roles and rules, a consequence of which is a greater degree of bureaucratization and impersonalization. Under these conditions one would expect less contact with faculty and therefore less tendency to adopt faculty attitudes. Second, as Barker and Grump (1968) note, size directly influences the extent of interaction between organizational members. In a smaller school individuals interact with each other more often and more intensively than larger schools. This level of interaction increases among other things the amount of pressure or social control exerted on an individual.

The rationale for postulating consensus is directly related to students adoption of faculty role orientations is relatively straight forward. Literature on Lewinian field theory (Lewin, 1948) through to reference group theory (Merton and Rossi, 1953) indicates that a particular source of attitude change will be more potent in its effect if it displays a relatively high degree of consistency and consensus. In the context of the professional school this suggests that where a high percentage of faculty hold similar role orientations, there will be greater adoption of this orientation by students than where there is considerable conflict among faculty.

The discussion to this point has provided a basic outline of some factors which would be expected to be related to changes in students' role orientations. It is hypothesized that the major source of influence on students' orientations of faculty and that a necessary condition for their influence is students' perception of them as supportive. Given these perceptions of supportiveness, faculty influence is seen as further dependent on both the size of student body and the amount of consensus among faculty.

Obviously these conditions are not independent. In larger schools one would expect that, because of the greater likelihood of role distance and impersonalism, students would tend to view faculty as non-supportive. Likewise in smaller schools, where the probability of inconsistency or lack of consensus among faculty is lower, one would anticipate that faculty would have a greater impact on students (6). The linkages between these various conditions notwithstanding, the above discussion provides us with a number of testable hypotheses concerning the impact of the professional school. In the next section the operationalization of variables within these hypotheses will be discussed and the methods used to test them will be examined. First, however, the third category which must be considered in the overall model - students' receptivity to influence, will be discussed.

Student Receptivity to Influence

In the earlier discussion of career choice strategies and status characteristics of the student in the professions, as it was indicated that both types of factors may be related to students' receptivity to social influence. It was noted in that discussion that some status-related factors were directly related to student receptivity while other influenced students indirectly via career choice strategies. With regard to career choice strategies a review of the literature indicated the importance of students' motives, time of decision to enter a profession, and clearly role definitions vis-a-vis their receptivity to professional school influence.

While a considerable number of factors potentially related to the extent to which students are influenced within the professional school, the task of constructing propositions concerning their role in student socialization is a difficult one. Much of the difficulty centers around the problem of choosing which factors to isolate in the construction of propositions dealing with students' receptivity to influence. Does one place emphasis on status characteristics, career choice strategies, or elements of both?

The approach taken here stresses the career choice strategy of the student. This decision, while somewhat arbitrary, is based on findings that biographical factors often influence student receptivity via their effect on

student's career choice strategies (Theilens, 1964; Cotgrove and Fox, 1972). Since the purpose in this section is not to develop a "theory" of recruitment, but simply to specify the relationship between recruitment factors and student receptivity to influence, hypotheses for all of the above variables will not be developed. Instead we shall concentrate on the timing of career choice, as a factor related to students' predisposition to adopt faculty attitudes. Specifically the following hypothesis will be examined:

Hypothesis Four: "The influence of faculty on students' professional role orientations will be inversely related to the time at which they decided to enter dentistry."

The rationale for this hypothesis is that students who make earlier career decisions will be more committed to a particular role definition and thereby less receptive to competing definitions. Similarly, students who make their career decisions at a later date will have less commitment to a particular role definition and therefore be less resistant to change.

In this chapter a model of professional socialization has been developed based on a number of assumptions about the nature of the influence exerted by students and faculty on the professional recruit. This model represents an attempt to reconcile two alternate views of the nature of the student role - the student as junior colleague and the student as subordinate. The first of these implied that the

and that changes in students' role orientations will tend to be in the direction of faculty. The second suggests that faculty will tend to be viewed as a negative reference group and thus sees students as tending to reject faculty role orientations.

The model which was developed to reconcile these competing views is based on the hypothesis that students can display behavior consistent with either depending on their perception of faculty as supportive or non-supportive. When students perceive faculty as primarily "supportive" then they are expected to act in a manner consistent with the junior colleague model (ie, more likely to adopt faculty role orientations). When they view faculty as "non-supportive", it is hypothesized that students will be more likely to reject their teachers role orientations. The extent to which students will tend to adopt or reject faculty orientations is viewed as further dependent of both characteristics of the school and the timing of students career choices.

The remainder of this thesis consists of an empirical assessment of this model as applied to Canadian dental education. In the next chapter, the methodology to be employed in testing hypotheses derived from this model will be discussed. This will be followed in Chapter Four and Five with an assessment of recruitment into dentistry and in Chapter Six with an analysis of socialization in the dental school with explicit reference to the hypotheses developed

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FOOTNOTES FOR CHAPTER THREE

¹For example, in a theory such as Newton's Law of Gravity, essentially different phenomena (apples falling off trees and the motion of the planets) are subsumed by the same set of laws. In models on the other hand, a theory in one area is used to suggest a theory in another - for example using epidemiological principles about the spread of disease to the spread of rumours. For a more complete discussion of the term model and its numerous meanings see; Bodbeck (1968) Lazarsfeld (1958) or Black (1962).

²As Hempel states "The use of the term 'theoretical model' rather than 'theory' is perhaps meant to indicate that the systems in question have distinct limitations, especially when compared with advanced physical models. To begin with, their basic assumptions are often known to be idealizations or oversimplifications. For example, they may disregard certain factors that are known to be of some relevance to the given subject matter..." In this thesis a number of factors, while important to professional socialization are not considered. These include (1) the phenomena of anticipatory socialization, (2) the relevance of students' extra-professional role set (3) patients and other sources of influence within the school other than students and faculty.

³For a discussion of conflicting interests between subordinates and superordinates see Darendorf (1957) especially pages 120-152.

⁴The possibility of using two seemingly contradictory models describing a single institutional process can be found in other literature of adult socialization. See for example Street (1965); Greenblatt (1955); Day and Hamblin (1964).

⁵An alternate view to the one presented here suggests that the greatest change would come about under conditions in which the subordinacy aspect of the student's role is stressed. See for example Dornbush's (1958) discussion of the military training academy.

⁶While the question of the relationship between the two factors at the level of the professional school and the nature of the student's role is beyond the immediate concern of this thesis, numerous hypotheses suggest themselves. A number of these are considered in chapter eight.

CHAPTER FOUR

A STUDY IN DENTAL EDUCATION IN CANADA:

SOME METHODOLOGICAL CONSIDERATIONS

INTRODUCTION

In the previous three chapters the problem of this thesis, that of determining both the level and direction of the influence which the professional school exerts on its recruits, has been discussed in the context of a number of issues in both the theory of the professions and the literature on professional socialization. In Chapter One, this problem was related to the more general concern in the analysis of the professions with the mechanism by which the needs of society become consistent with the functioning of the professions. Following this, a specific instance of this concern was discussed in relation to the current structure of dental education in Canada. In Chapters Two and Three, the thesis problem was elaborated in relation to the literature on professional socialization and, out of this discussion, a model was developed which specified those factors within the dental school which are related to the level and direction of change in students role orientations.

In this chapter the data, methods, and procedures used in this thesis are discussed. Topics relevant to the methodology are presented in the following order: first, a brief history

of the study from which the data were drawn is presented. Second, the field methods employed in gathering the data are outlined. Third, the response rates and sample sizes from each of the Canadian dental schools are presented. Fourth, the methods used in the operationalization of the variables

to be measured in this study are examined; fifth, problems in estimating changes in students' professional orientations are discussed; and, sixth, a general framework for the presentation of findings in the remainder of the thesis is outlined.

Before proceeding with the discussion of these topics, it should be noted that while this chapter considers the basic methodology employed in this thesis, the discussion of methodology is not restricted to this chapter. As will become apparent in the discussion of our findings, numerous methodological problems have to be considered and where these refer to specific stages of the data analysis process they will be discussed at that point. Thus the purpose of this chapter is to provide a general overview of the basic methods used in the study.

(A) The Study of Dental Education

The data to be utilized in this thesis are drawn from a national study of dental education/ carried out from September 1971 to March 1973.

In March of 1970 the Association of Canadian Faculties of Dentistry (ACFD) with support from the Department of National Health and Welfare undertook a three year study of Canadian dental education (1). The purpose of this study was to investigate a wide range of issues which then confronted dental education in Canada. While these issues reflected problems as diverse as recruitment to dentistry and the continuing education of dentists after practice, underlying

each of these was a general concern with the role of dental education in facilitating changes in the structure of dental practice. Most of the research questions specified in the original protocol of this study reflect this concern. These included: (1) What role is dental education currently playing in preparing dental students to practice in a work setting which may be considerably different than the traditional solo practice fee-for-service dental office? (2) Given the change in emphasis in recent years from treatment to the prevention of dental disease, to what extent is the dental school preparing students to implement preventive principles in their dental practices? (3) Given the significant increases over the past two decades in dental knowledge and the likelihood that such increases will continue, how can the dental school either through recruitment or training produce graduates who are committed to a program of continuing education? (4) Given the recent expansion of the duties of dental auxiliaries, to what extent are students being trained in their proper use and acceptance in the dental office?

Thus, the ACFD Study of dental education received its impetus because of the possibility of a number of major changes in the practice of dentistry. It was recognized that such changes had potentially significant implications for dental education and, hence, the purpose of the study was to gather information which would indicate the extent to which dental education was preparing dental recruits for the practice of dentistry which in all likelihood would be

considerably different than the traditional dental practice.

In order to investigate these and other problems, a research project, based at the Faculty of Dentistry, University of Manitoba, began operation in the fall of 1970. The project was staffed by a Research Director (in which capacity the author of the present thesis served for the first year and a half) and a Research Assistant (2). In addition, a committee of specialist consultants acted in a research advisory capacity, guiding the general direction of the project's activities (3).

The initial task of this project consisted of translating the general aims of the study into specific research questions and deciding upon the appropriateness of various methods to be used in the collection of data. While a number of studies were undertaken by this project, the two which are the most relevant to this thesis are a survey of dental students conducted in January of 1971 and a parallel survey of dental school faculty members carried out in the fall of the same year. The purpose of both surveys was to collect baseline data on a wide variety of background characteristics and career-relevant attitudes of both dental students and faculty members. It is these data which will be utilized in the thesis and on which we will comment in the remainder of this chapter.

(b) Field Methods

During the fall of 1970 a comprehensive questionnaire was drawn up to be administered to dental students and later

to dental school faculty members. In January of 1971, the penultimate version of the questionnaire was pre-tested using a group of dental graduate students at the University of Manitoba, Faculty of Dentistry. Undergraduate dental students could not be used in this pre-test since it was the intention of the study to survey the entire population of dental students in Canada.

It was decided, both on the basis of financial and logistical considerations, to group-administer the final questionnaire to each of the thirty-five classes of dental students which then comprised the population of dental students in Canada. The questionnaire was administered during the month of January 1971 and early February to each of the classes at each of the dental schools in Canada. (A copy of the questionnaire may be found in Appendix A). Questionnaires for the Université de Montreal were translated into French (4). Students completed the questionnaire in a classroom sitting during a one-hour period which was set aside for that purpose by the dental school administration in each university.

Written instructions on the questionnaire and verbal instructions given by the research officer administering the questionnaires informed the students that no member of the staff or anyone else connected with dental education would have access to any of the individual replies. Students were also told that the nature of their participation was voluntary and that those who felt they could not complete the questionnaire were not obliged to do so. (It was felt

essential to make this comment given the relatively regimented nature of some of the dental schools). After each of the questionnaires were completed, they were handed by the students to the research officer of the project who returned them to the Projects office in Winnipeg.

To complement the student data gathered in the winter of 1971, a parallel study of dental school faculty members in Canada was conducted in the autumn of that year. The questionnaire which faculty members completed, contained many of the same attitudinal items which were found on the student's questionnaire. (A copy of this questionnaire may be found in Appendix E).

The questionnaires for faculty were distributed in October of 1971 through the Dean's Office in each of the dental schools in Canada. Appended to each of the questionnaires was a covering letter from the President of the Association of Canadian Faculties of Dentistry outlining the objectives of the research and encouraging the cooperation of each of the faculty members.

Faculty questionnaires were sent directly by faculty members (using a pre-paid self-addressed envelope) to the research project's offices in Winnipeg. Faculty members were asked to write their name on the outside of the questionnaires, in order to identify non-respondents. After a period of three weeks, non-respondents were sent a letter reminding them of the questionnaire and encouraging them to complete it. For those faculty members who did not wish to include their name on the questionnaire, a small card was

included which could be completed and mailed separately from the questionnaire to inform the investigators that they had completed the questionnaire.

(C) The Student and Faculty Studies: Response Rates and Sample

The number of students completing the project's questionnaire at each of the dental schools in Canada compared with the population within each school is shown in Table 4.1. In all, 83% of Canadian dental students completed the questionnaires. With the exception of the University of Manitoba, the response rates within each school exceeded 80%. The lower response rate at the University of Manitoba (70%) is for the most part accounted for the low response rate of the fourth year students at that school. This low response rate is due to two factors; one, these students had been surveyed the year before and reacted negatively to the present survey, and two, a number of students at the time of the survey were out of town on internships or rotations. (5)

The problem of clinical rotations resulted in a generally lower response rates for fourth year students across the country. This was especially true of schools such as the University of Toronto where students are required to rotate through hospitals and dental clinics many of which are some distance from the dental school. At the Universite de Montreal, this problem was compounded by a snow storm which literally paralyzed the city in the week that the survey was undertaken.

The complementary data gathered from dental school

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TABLE 4.1: SAMPLE SIZE FOR STUDENT SURVEY

<u>School</u>	<u>Population Size*</u>	<u>Completed Questionnaire**</u>	<u>%</u>
<u>University of British Columbia</u>			
First Year	40	35	87
Second Year	36	29	80
Third Year	31	25	80
Fourth Year	20	16	80
TOTAL	127	105	83
<u>University of Alberta</u>			
First Year	50	41	82
Second Year	46	39	85
Third Year	51	44	80
Fourth Year	47	42	89
TOTAL	194	166	86
<u>University of Saskatchewan</u>			
First Year	11	9	82
Second Year	10	10	100
Third Year	10	10	100
TOTAL	31	29	94
<u>University of Manitoba</u>			
First Year	33	32	97
Second Year	28	20	71
Third Year	24	18	75
Fourth Year	28	5	20
TOTAL	113	75	66
<u>University of Western Ontario</u>			
First Year	53	46	87
Second Year	40	35	88
Third Year	30	23	77
Fourth Year	9	7	78
TOTAL	132	111	84
<u>University of Toronto</u>			
First Year	125	124	99
Second Year	119	109	92
Third Year	117	102	87
Fourth Year	130	84	65
TOTAL	491	419	85
<u>McGill University</u>			
First Year	28	35	92
Second Year	40	36	90
Third Year	37	33	89
Fourth Year	39	25	64
TOTAL	144	129	90
<u>University of Montreal</u>			
First Year	82	82	100
Second Year	87	81	93
Third Year	72	47	65
Fourth Year	71	43	61
TOTAL	312	253	81
<u>Dalhousie University</u>			
First Year	27	22	82
Second Year	24	23	96
Third Year	22	22	100
Fourth Year	22	22	100
TOTAL	95	89	94
TOTAL OF ALL SCHOOLS	1,639	1,376	83.9%

*Source: Canada Dental Registry, 1971 ** Source: ACFD Research Project, 1971

faculty members yielded a significantly lower response rate compared with the student survey. In all, fifty-three percent of the faculty members completed and returned the questionnaires which were distributed to them. In Table 4.2, we show the response rates of faculty members from each of the Canadian dental schools. The response rates varied considerably between schools as is evident in the high of 83% at the University of Toronto, to the low of 38% in the Universite de Montreal. At most of the schools, however, between 55 and 65% of the faculty members completed the questionnaire. The reason for the especially low response rate at the Universite de Montreal was mainly due to the fact that the questionnaires were sent out at the time of a strike of the university's support staff. This strike lasted over four months and resulted in many of the faculty members not receiving a copy of the questionnaire.

In Table 4.3 the response rates of dental school faculty members in Canada are broken down by the various sub-populations within each school. The sub-populations included are determined by the nature of the faculty members' appointment (full-time versus part-time) and the department to which the faculty members belong. An analysis of the resultant four categories, broken down by school, indicates considerable variation in the response rates from each of the sub-populations in the various dental schools. A consistently higher percentage of full-time clinical and full-time non-clinical faculty members completed the questionnaire than did their part-time colleagues. The

TABLE#2: SAMPLE SIZES FOR THE FACULTY STUDY

	<u>Population Size</u>	<u>Completed Questionnaires</u>	<u>%</u>
University of British Columbia	75	49	65.3
University of Alberta	90	53	58.8
University of Saskatchewan	14	10	71.4
University of Manitoba	70	39	55.7
University of Western Ontario	72	45	62.5
University of Toronto	200	162	81.0
McGill University	101	54	53.4
University of Montreal	94	36	38.2
Dalhousie University	45	33	73.3

TABLE 43: RESPONSE RATES BY TYPE OF APPOINTMENT AND**DEPARTMENT AFFILIATION FOR EACH OF THE****CANADIAN DENTAL SCHOOLS**

	<u>Population Size * Completed Questionnaires</u>		<u>%</u>
<u>University of British Columbia</u>			
Full Time Non Clinical	8	5	62
Part Time Non Clinical	5	4	80
Full Time Clinical	22	20	90
Part Time Clinical	40	20	50
<u>Univeristy of Alberta</u>			
Full Time Non Clinical	8	7	87
Part Time Non Clinical	2	-	-
Full Time Clinical	23	15	65
Part Time Clinical	57	31	54
<u>University of Saskatchewan</u>			
Full Time Non Clinical	5	4	80
Part Time Non Clinical	1	-	-
Full Time Clinical	6	5	83
Part Time Clinical	2	1	50
<u>University of Manitoba</u>			
Full Time Non Clinical	13	7	54
Part Time Non Clinical	7	2	28
Full Time Clinical	21	15	71
Part Time Clinical	29	15	52
<u>University of Western Ontario</u>			
Full Time Non Clinical	10	8	80
Part Time Non Clinical	6	5	62
Full Time Clinical	22	15	68
Part Time Clinical	32	17	53
<u>University of Toronto</u>			
Full Time Non Clinical	18	15	83
Part Time Non Clinical	35	29	83
Full Time Clinical	25	23	92
Part Time Clinical	122	95	78
<u>McGill University</u>			
Full Time Non Clinical	4	1	25
Part Time Non Clinical	12	7	58
Full Time Clinical	15	8	53
Part Time Clinical	70	38	54
<u>University of Montreal</u>			
Full Time Non Clinical	8	4	50
Part Time Non Clinical	6	3	50
Full Time Clinical	22	8	36
Part Time Clinical	58	21	36
<u>Dalhousie University</u>			
Full Time Non Clinical	3	3	100
Part Time Non Clinical	3	3	100
Full Time Clinical	16	15	93
Part Time Clinical	23	12	52

*Source: Registry of Canadian Dental School Faculty Memebbers, 1971

reason for this lower response rate on the part of part-time faculty members is not entirely clear. At least two explanations suggest themselves;

(1) While most part-time faculty members in dental schools teach on a week to week basis, a number involved in areas such as dental law and ethics teach only once or twice a year and as a result were not in the dental school to pick up their questionnaires; and (2) because of the part-time nature of their appointment it would seem reasonable that the level of commitment of many of the part-time faculty members to the dental school is considerably lower than those of full-time faculty members. Whatever the reason for the different response rates for these various sub-populations, the result is a difficult methodological problem which must be considered if an adequate measure of dental school ideology is to be developed. This problem will be discussed in greater detail later in this chapter.

(D) The Operationalization of Variables.

In the first three chapters, a number of concepts and terms were introduced both in the process of specifying the problem of this thesis and developing a model in the context of which this problem will be empirically assessed. In this section the meaning of these terms will be discussed with specific reference to dental education and, on the basis of this discussion, the operational definitions and indicators to be used in their measurement will be explicated.

In all, six variables are specified in this thesis

which require measurement. For two of these, size of the student body and the timing of career choice, the measurement is relatively straight forward and will not be considered here. The remaining four variables are discussed below. They are; students' professional role orientations, faculty role orientations, students' perception of faculty supportiveness and consensus among faculty.

(1) Professional Role Orientations

As stated in Chapter One, the problem of this thesis concerns the influence of the dental school on the professional role orientations of the dental recruit. In Chapter Two (pages 33-34), the term "professional orientation" was defined in general terms as an observer category or analytical device for summarizing the professionally relevant opinions and beliefs which an individual may hold. In operational terms, our definition of professional role orientations as applied to dentistry, attempts to summarize the position of individual in terms of changes in the structure of dental practice and the definition of the dentists role.

As was discussed in Chapter 1, dentistry is currently undergoing a transition which includes not only specific events such as the increased use of dental auxiliaries, but also a shift in the general definition of the dentist's role. The nature of this shift is from a predominately fee-for-service, solo practice, "business oriented" view of the profession in which the dentist is basically conceived

of as a fixer of teeth and gums to that of a work setting characterized by a high division of labour in which a strong business orientation is viewed as a negative attribute, and social and community responsibility are stressed. Included in this emerging view of the dentist's role is a conception of the dentist as an oral diagnostician utilizing scientific knowledge rather than manual skills in the treatment of patients.

In order to summarize an individual's position in terms of these shifts in the structure of dentistry, we will term as a "modern orientation" that which is consistent with the emerging "alternate" model of dentistry and as a "traditional" orientation that which is consistent with the established pattern of dental practice.

Our concern in this thesis then, is with the conditions under which students will tend to adopt a modern versus a traditional conception of the dentist's role. It should be noted, however, that inasmuch as both types of orientations represent opposite ends of the same continuum, individuals may have professional orientations which are not clearly modern or traditional but which fall somewhere between the two.

Inasmuch as both types of role orientation are viewed as summaries of an individual's position in terms of concrete issues, opinions and beliefs, the measurement of students role orientations involved the utilization of students' responses to items reflecting a particular stand on various concrete issues within the dental profession. It

was decided to scale these items, yielding an overall measure of students' traditional modern orientation. Because of the ex post facto nature of our measurement of students' professional orientations, the manner in which the original attitudinal items were structured, and the multi-dimensional quality of the traditional - modern variable, a number of the more standard attitude scaling techniques could not be employed. For example, because only three or four items clearly defined a particular dimension of students' professional orientations, Likert techniques proved inappropriate. Similarly, because items were not designed to reflect different levels within a particular dimension, Guttman scaleogram analysis could not be used since the criteria of reproducibility could not be met. A further factor which influenced the choice of methods to be used in the measurement of students' professional orientation was that items which were included in the questionnaire completed by students, cross-cut more than one of the analytical dimensions which were subsumed by the verbal definition of traditionalism - modernity. Thus for example, responses to the item "dental services should be provided at public expense for children" reflected an attitude not only toward the economic underpinnings of dentistry but also the level of social responsibility which dental students displayed.

As a result of these considerations, it was decided to utilize a factor analytic design in the measurement of the dependent variable (students' professional orientations). In

all, forty-five items which comprised a section of the questionnaire dealing with attitudes of students to various aspects of dentistry were subjected to factor analysis. (See Appendix C). The matrix of correlation coefficients among the items was subjected to a principal component factor analysis. Twelve factors with eigenvalues greater than unity emerged. Where rotated to simple structure using the varimax criterion, five easily interpretable factors emerged. Three more of the remaining factors were suggestive but not clearly interpretable. The factor analysis was redone setting eight as the number of factors to be extracted. Again, five interpretable and three weak and somewhat ambiguous factors emerged. The five strong and interpretable factors were used in subsequent analysis.

While this method of factor analysis was employed independently for both the student and faculty data, in both cases the same five interpretable factors emerged. (A list of the items along with the factor loadings for both the student and faculty data may be found in Appendix D). The fact that independent factor analysis of the two samples yielded the same components (and item loadings) attests, we believe, to the validity of this approach.

The five components which are utilized in the measurement of traditional-modern orientations of students and faculty are: (A) Business Orientation (B) Research Orientation (C) Community Orientation (D) Social Responsibility, and (E) Manual Skills Orientation. Factor scores were then calculated for each of the students based on the product of the factor weight and standardization scores for each of the

items. This procedure yielded a score for students along each of the five components. In order to arrive at an overall measure of students traditional-modern orientations, students scores for each of the components were further standardized and an overall measure calculated using the following formula:

$$\begin{aligned} \text{Traditional-Modern Professional Orientation} = & \\ & \text{Research Orientation} + \text{Community Orientation} - \\ & \text{Manual Skills Orientation} + \text{Social Responsibility} \\ & - \text{Business Orientation} \end{aligned}$$

In operational terms, then, a student is viewed as highly traditional if he or she scored high on business orientation and technical or manual skills (two salient defining characteristics of the established view of dentistry) and low on research orientation, community orientation, and social responsibility. Likewise, a student was defined as highly modern if he or she scored low on both business orientation and technical or manual skills orientation and high on the other three components. Because the factor analytic solution yielded components which were mutually orthogonal, each of these components could be considered separate independent indicators of students' overall professional orientation.

This procedure, provided us with a measure of students' professional role orientations. While the use of factor analysis violated a number of assumptions of this technique,

(the most serious of which concerns the ordinal nature of the data utilized) its use is defensible, we believe, for a number of reasons. First given the large number of items involved and the fact that these items were formulated long before the development of the concept of "traditional - modern orientations", this method seemed the most useful for the construction of a measure of professional orientations. Second, there is currently in sociology, considerable debate concerning the effect of violating the assumptions of interval level measures, (c.f. Lahowitz, 1970) Third, in the area of attitude measurement, this has become a relatively accepted technique (see for example Summers, 1970) Fourth, the use of the factor analytic design allowed for multi-dimensional scaling and produced measures which could be considered interval level and would allow in subsequent portions of the thesis the use of more powerful statistical techniques than would otherwise be the case.

(2) The Professional Orientation of Faculty

Given the hypotheses outlined in Chapter Three, it is necessary to measure two aspects of faculty members' professional orientations: the overall professional orientation within each school and; (2) the degree of consensus among faculty in terms of these orientations. Thus it is necessary to provide two measures for each of the dental schools, the first of which estimates the "direction" of faculty orientations, while the second indicates the "dispersion" of such orientations.

While these orientations are measured in the same manner for individual faculty, as they were in the case of students, the development of school level measures for each of these is made awkward by two problems which precluded the use of simple arithmetic means and standard deviations. First, as mentioned earlier in this chapter, the response rates between various subpopulations within each of the schools differ substantially such that any attempt to estimate the school level orientation on the basis of simple means or standard deviations would prove highly invalid and second, the amount of teaching contact which various faculty members have with students varied considerably across the schools from less than one hour per week to ten or more hours. Because of both of these problems, the estimate of both the central tendency and dispersion of the school level professional orientation of faculty members requires the use of a two step procedure which takes into account both variations in sample size and difference in contact hours which faculty members have with students. In the first step of this procedure a weighting factor is assigned to each of the faculty members at each of the dental schools in Canada. This weighting factor is determined by the response rate of the subgroup within the dental schools to which each of the faculty members belong (in Appendix F lists the weight factors used for each of the sub-populations in each of the dental schools) Once each of the faculty scores had been weighted, it was then necessary to compute, on the basis of hours of teaching contact with students, a further refined

measure of a faculty members' professional orientation.

Upon completion of this two step procedure, the means and standard deviations of each of the schools (and, as we will indicate later, a number of sub-populations within the school) are calculated and utilized as estimates of the direction and consensus of the professional orientation of faculty members within each of the dental schools in Canada.

(3) Students' Perception of Faculty Supportiveness

One of the key variables which was outlined in our discussion of conditions under which students will be influenced within the professional school concerns the extent to which they view faculty members as supportive. It was hypothesized that when students viewed faculty as non-supportive they would be less inclined to adopt faculty attitudes than when they viewed their teachers as supportive.

Because this variable had not been defined prior to the collection of data it was necessary to utilize a number of items in the questionnaire which seemed to best reflect the meaning of supportiveness. In all seven items (Appendix F) were used to measure students' perception of faculty support. These items were scaled using Likert techniques and on the basis of "item analysis" of the seven items, six of these were included in a scale which measured students' perception of faculty supportiveness. Utilizing the technique of "checks for internal consistency" outlined by Edwards (1957), it was decided that such items did in fact

constitute a Likert scale(6).

Individual scale scores were computed for each of the students in the study and on the basis of these an overall measure of students perception of faculty supportiveness was determined.

(E) Problems in Estimating Changes in Students'

Professional Orientations

Because of the cross-sectional nature of the data gathered in the original ACFD Study, a major methodological problem of this thesis concerns the estimation of changes in students' professional role orientations as they proceed through the dental school. The method most commonly utilized to measure such changes involves comparing the groups under study in terms of some measure of central tendency of dispersion (usually the mean or standard deviation). Differences between groups are then associated with the existence of a particular treatment - in this case, attendance at dental school.

While this method is a useful first step in the analysis of a particular organizational effect, a number of factors must be considered even if the roughest estimate of change is to be developed. Stated in a form of rival hypothesis (to that which asserts that differences between groups reflect true changes), these factors are: (1) differences between groups are not the result of actual changes but due to differences in selection. In the case of the dental school, differences across years are not due to actual changes but due to differences between the cohorts at

entry, (2) differences between groups are not the result of actual changes but due to mortality or drop-outs. As Campbell and Stanley (1967:122) note, referring to 'this problem in education research:

...This problem is most frequently met in those studies aimed at ascertaining the effects of college education by comparing measures on freshmen who have not had 'X' with seniors who have had 'X'. One such study shows freshmen women to be more beautiful than senior women and we recoil at the implication that the harsh course training is debaughtifying. Instead we point to the hazards in the way of a beautiful girl finishing college before getting married.

(3) Differences between groups are not the result of the actual changes but due to sampling or measurement error.

Each of these potential rival hypotheses must be considered in utilizing aggregate level cross-sectional data in measuring changes in dental students' professional orientations. Only then can the validity of the estimate of changes be arrived at.

In this study the mean differences between years at each of the Canadian dental schools will be utilized as an indicator (subject to an examination of the above factors) of changes in student's professional orientations while still at dental school. The mean score rather than the standard deviation (or some other measure of dispersion) is employed because of our concern with both the level and direction of students' changes. While the standard deviation acts as an indicator of the amount of change, it

does not provide information on the direction, thus necessitating the choice of the mean (given our assumption of interval level data).

Because the use of the differences between mean scores as an estimator of change in students' professional orientations hinges on the extent to which each of the three rival hypotheses can be discounted, data on each of these factors will be considered in subsequent chapters. In our discussion of recruitment in Chapters Five and Six, the matter of selection will be considered at length and findings introduced to indicate the validity of this hypothesis. In Chapter Seven the remaining two problems will be dealt with.

(F) The Presentation of Data: A Framework For The Remainder of This Thesis

In this chapter, and the three which proceeded it, we have attempted to prepare the reader for the presentation of findings on recruitment and socialization into dentistry. In Chapter One, this consisted of an initial statement of the problem of this thesis and an elaboration of this problem in terms of a number of general issues and the theory of the profession and some specific concerns related to changes in the structure of the dental practice. In Chapter Two, this problem was discussed in greater detail and the literature on professional socialization was briefly reviewed as a first step in the development of hypotheses concerning the impact of the professional school. In Chapter Three, a model of professional socialization was

devised which attempted to take into account both the operation of factors at various levels within the school and a number of paradoxical aspects of the students role which were isolated in Chapter Two. The resultant model viewed changes in the level and direction of students professional role orientations as initially dependent on the student peer groups perception of the faculty as supportive. It was hypothesized that when students perceived faculty members as supportive they would tend to adopt their role orientations while under conditions of non-support they would tend to reject faculty attitudes. The degree of change was further viewed as dependent on the size, consensus, and timing of students career decisions. In this chapter, we have introduced the study which will be used to test this model and discussed a number of methodological problems.

In the remainder of this thesis findings from the study of dental education will be presented. We begin in Chapters Five and Six with an analysis of recruitment into dentistry which will prepare the reader for the discussion in Chapter Seven of socialization in the dental school.

The findings on recruitment are presented for both substantive and methodological reasons. Substantively it was felt that a discussion of recruitment represents an important first step in the overall analysis of professional socialization. Consideration of who enters the professional school, what backgrounds and career choice strategies they display and the relation of these to the new recruits' professional orientations seemed to be an essential

prerequisite for an analysis of what happens to students while they are in the professional school.

From the perspective of the model and hypotheses developed in Chapter Three, the consideration of recruitment represents a crucial methodological step in the overall analysis. This is because of the cross-sectional nature of the data to be utilized in the analysis of school effects. Given this data, it will be necessary to examine a number of competing hypotheses in the analysis of the data. Since differences between cohorts will be used as a measure of changes in students' orientations, it is necessary to contend with the possibility that such differences are due to variation in recruitment. Through the analysis in Chapter Five and Six we will be in a position to better understand the role of these factors.

FOOTNOTES FOR CHAPTER FOUR

¹This study was carried out with the support of the Canadian Federal Government; National Health Grant 607-125-585. Dean J.W. Neilson was the Principle Investigator.

²For a more detailed discussion of this study see Reid (1970). Some of the results of this research have been published in mimeo form by the Association of Canadian Faculties of Dentistry Research Project. See Reid, Cowan and Fish (1971).

³The project's consultants were: Prof. Bruce A. McFarlane, Department of Sociology and Anthropology, Carleton University, Ottawa; Prof. David Fish, Faculty of Medicine, University of Manitoba; and Dr. R.M. Grainger, Research Director, Association of Canadian Medical Colleges.

⁴Copies of the French versions of both questionnaires are available on request.

⁵At many of the Canadian dental schools students are required in their fourth year to spend some time in a hospital, a rural dental practice or a community clinic. These periods are referred to as rotations.

⁶One drawback of this scale is the fact that only six items were used. In addition the fact that no "negative" items were included precluded the use of reliability checks as outlined by Edwards (1957:155-158).

CHAPTER FIVE

THE DENTAL RECRUIT:

An Analysis of the Background
Characteristics, Social Origins and
Career Choice Strategies of Dental
Students in Canada

INTRODUCTION

Each spring in Canada witnesses the ritual of thousands of students, most of whom are enrolled in post-secondary education programs, applying for acceptance to one or more of a number of professions and professional schools. For these students, the process of completing forms, taking special tests and attending interviews has a special significance for its outcome will determine the nature of their work careers, their life styles, and their status in the community. Those who are successful are admitted as novices into the professional world and begin the transformation from neophytes to practitioners. For those who fail to gain admittance, usually the majority, there is the frustration and anxiety over dashed career plans, the chance to try again, and more often the search for a new occupation.

A relatively small group of those seeking admission into professional schools in Canada are aspiring dentists. For them, the prospect of being accepted is rather dismal -- only one in four will make it. Yet the potential advantages of dentistry seem to outweigh the risks of non-acceptance or rejection since, every year, approximately sixteen hundred applicants apply for about four hundred and fifty places in the dental schools (Canadian Dental Education Register, 1971). For these individuals, gaining admission is a precarious business. Unlike those professions which recruit large cohorts (eg. law and engineering) which are later

reduced in size through students dropping out or failure, the dental school because of physical constraints, such as the number of dental chairs, etc. cannot recruit many more students than are intended to graduate.

For the applicant this means that gaining admission is not solely based on "predictable" standards such as grades (in 1970 over three-quarters of those who failed to gain admission had the minimum academic qualifications set by the schools, (Canadian Dental Education Register, 1971) but also on less "certain" criteria such as aptitude tests, chalk carving tests, and in some cases interviews. The process of selection used by Canadian dental schools while differing slightly across the country includes these basic ingredients (1).

The schools, in an attempt to retain a degree of objectivity, admit students as much as possible on the basis of explicit universally accepted criteria which are applied equally to all students. The student, on the other hand, tries to stress particular attributes which he or she possesses in order to stand out from the others. Thus in those areas of application forms titled "Other Interests" the student attempts to appear unique above the average applicant.

In this sense, the relationship between the school and the individual applicant is similar to other relationships between individuals and institutions in society. For example, in the medical world, doctors attempt to handle cases conventionally while the patient struggles to become

an exception and treated in a special way. Likewise, the therapist attempts to fit a case into the convenience of his office while the patient struggles to gain a mode of management specifically suited to himself (Freidson, 1970: 320; also see Roth, 1968).

In reality, selection into dentistry involves a combination of the universal and the particular. Although students are accepted on the basis of universally applied criteria such as grades and aptitude tests, a small percentage may be accepted or rejected on the basis of other more subtle criteria. Thus, the applicant with a Ph.D. in economics becomes unique enough to be accepted almost solely on that basis. Likewise, being a foreign student seems to increase the likelihood of being rejected by a Canadian dental school.

The end result of this process of selection is evident each autumn when approximately four hundred and fifty students enroll for classes at one of the ten Canadian dental schools. The question of how they arrived, and why they were chosen rather than other applicants while tangential to this study (this study focuses on what happens to them after they have "made it") is nevertheless of some substantive and methodological importance as it relates to the major problem of this thesis.

In this chapter, we consider the background characteristics and career choice strategies of those Canadian dental students who participated in the 1971 ACFD Study of dental education. These students comprise

approximately 80% of the total population of dental students from cohorts entering Canadian dental schools in 1967, 1968, 1969, and 1970. This examination of the backgrounds of these students is organized around three categories: first, their status characteristics such as age, sex, and marital status; second, characteristics of their social and cultural origins including occupation and education of parents, regional backgrounds and mother tongue; and third, the career choice strategies of dental students such as the timing of their career decisions and their motives for entering dentistry.

The purpose of this analysis is to answer a number of questions related to recruitment into dentistry. First, what types of students enter dentistry, and why do they choose that career? Second, does the pattern of recruitment differ for the four cohorts examined in this study? Third, to what extent does the pattern of recruitment vary between the various dental schools in Canada? Fourth, how does the pattern of recruitment into dentistry compare with recruitment into other professions in Canada, notably medicine?

In order to provide answers to these questions, these data will be presented in a number of ways. Throughout the analysis students responses have been broken down by year of entry into dental school for the purpose of comparing between the four cohorts who entered in 1967, 1968, 1969, and 1970. In addition, where applicable, further analysis by school has been included to indicate differential patterns

of recruitment into each of the dental schools in Canada. Also, where applicable, additional data of relevance to each of the topics is included. These additional data fall into two categories; First, for a number of student characteristics, especially those dealing with family origins, baseline data are presented for the purpose of comparing dental students with their age group in the Canadian population. Second, in a number of instances, we have included comparable data from previous studies of professional education in Canada.

(A) Status Characteristics

(1) Sex

Dentistry like most other old professions in North America has traditionally been a male occupation. In the United States, less than 2% of practicing dentists are women (Young and Smith, 1973). In Canada, a study by McFarlane in 1964 on women dentists indicates a similar situation (McFarlane, 1965). While in recent estimates Chehib (1973:72) indicates that while the number of women practicing in Canada has increased 122% from the time of McFarlane's study in 1964 to 1970, this represents an increase of from 1.6% of all dentists in 1964 to 2.9% in 1970. Thus, the percentage of dentists who are women has changed little over the past ten years.

Given these figures, it is not surprising that the vast majority of students enrolled in Canadian dental schools are male. Indeed, at the time of the study, women made up only slightly more than 5% of the student body (see Table 5.1). This figure becomes especially revealing when one considers that in 1961, 4% of dental students were women indicating an increase of only slightly more than 1% during the 1960's.

Recent statistics supplied by the Canadian Dental Association show that women's participation in dentistry is likely to rise at a faster rate during the 1970's, since between 1970 and 1972 the number of women enrolled in Canadian dental schools increased to 8.1%. In spite of

TABLE 5.1

WOMEN IN CANADIAN DENTAL SCHOOLS BY YEAR OF
ENTRY COMPARED WITH CANADIAN MEDICAL SCHOOL STUDENTS (1972)
AND THE BASE POPULATION

	Year of Entry into Dental School					Canadian Medical Students	Base Population	
	1967	1968	1969	1970	Total	1972 ¹	1970 ²	1966 ³
Male	97%	94%	94%	93%	94%	92%	79%	51%
Female	5%	5%	6%	7%	6%	8%	21%	49%
	—	—	—	—	—	—	—	—
	100%	100%	100%	100%	100%	100%	100%	100%
n=	(244)	(320)	(384)	(425)	(1373)			

Source: A study carried out under the auspices of the Association of Canadian Faculties of Dentistry under Federal Health Grant 606-7-231; 1970-71.

1. Dental Education Register, Canadian Dental Association, (1973:6).
2. Neil Collishaw and R.M. Grainger "Canadian Medical Student Selection and Some Characteristics of Applicants, 1970-71", Journal of Medical Education, Vol. 47, 1972:254-266.
3. The Population in Canada Aged 15 to 29 in 1969, Vital Statistics - Preliminary Annual Report, 1969 Dominion Bureau of Statistics.

these changes, however, the percentage of women entering dentistry remains insignificant compared to the extent of their participation in European countries such as Denmark (40%), the Soviet Union (80%), and Latvia (95%) (McFarlane, 1965) (2).

The participation of women in dentistry is also considerably lower than their involvement in medicine which is also viewed as a traditionally male occupation. In Canadian medical schools, women presently account for 21% of the student population.

• While the basis of this sex imbalance among dental students has not been investigated thoroughly in Canada, Talbot (1961), referring to this pattern in the United States suggests that a combination of reasons may account for the predominance of men. She notes that direct discrimination against women is probably only a minor factor since only a very small percentage of applicants were women. Instead, the appropriate careers in the health sciences for women remain nursing and dental hygiene (3). For those women who actually entered dentistry, it is not surprising to find that their cultural backgrounds tend to be different from the average Canadian female. For example, McFarlane (1965) less than 30% of women dentists practicing in 1964 were Canadian born, the majority having been born in European countries, especially the Baltic states where dentistry is a female profession.

The findings presented above on women in Canadian dental schools indicate that dentistry is slowly becoming a

more acceptable career for women. Whether this is due to a change in the culturally define legitimacy of this career or simply a result of a conscious attempt on the part of the dental school to admit more women is not clear. It seems reasonable that changes in social values concerning the role of women in the world of work have had the effect of both increasing the number of women who aspire to professional careers and decreasing some of the traditional resistance of professional educators.

(2) Age and Marital Status

Just as it came as little surprise to find the vast majority of dental students in Canada are male (with, albeit, increasing inroads made by women), it is equally predictable that the great majority of these students are in their early twenties (Table 5.2). In this respect, students entering Canadian dental schools are similar to those entering other professions in Canada. Given the relative youth of students entering the dental school, it is not surprising to find that over two-thirds of these students are single when they enter (Table 5.3). Because of the cross-sectional nature of the data gathered in the study of Canadian dental schools, it is difficult to determine for all four cohorts, the marital status of students at entry. If one assumes, however, that the differences between cohorts reflect changes in marital status during dental education then it is evident that slightly less than one third of the students become married during this period.

TABLE 5.2

THE AGE OF CANADIAN DENTAL STUDENTS AT ENTRY
BY YEAR OF ENTRY INTO DENTAL SCHOOL

Age	<u>Year of Entry</u>			
	1967	1968	1969	1970
20 or less	4%	4%	5%	5%
21 - 22	56%	54%	56%	52%
23 - 25	31%	32%	29%	31%
26 - 28	5%	4%	4%	5%
29 or more	4%	6%	5%	6%
	—	—	—	—
	100%	100%	100%	100%
n=	(244)	(320)	(384)	(425)

This compares with Hollingshead's (1961) findings that 37% of the dental students in the United States were married, increasing by approximately 10% when they entered dental school, with this figure each year so that 68% of students were married by fourth year. A lower percentage of students in Canada are married (only 23% of the freshmen and 50% of the senior dental students) and there is no significant increase in the number of married students between second and third year.

The percentage of students with children also varies considerably between our study and findings based on American students. Kohn (1958) for example reports that 20% of first and 48% of fourth year students in the United States had children. This compares with 8% of first year and 16% of fourth year students in Canada.

The extent to which these differences indicate real variation in the marital status of Canadian versus American dental students is not entirely clear. Two alternate hypotheses seem equally plausible; First, it would seem reasonable that given the military draft in the United States and the change in draft status which results from being married, we should expect to find a higher percentage of married American students. In addition, because of the military draft there is also a greater likelihood that American students are older when they enter the dental school (Hollingshead in 1961 reported that 30% of dental students were veterans). An alternate explanation is that students in the 1970's compared with those in the 1960's

TABLE 5.3

MARITAL STATUS OF CANADIAN DENTAL STUDENTS
BY YEAR OF STUDY INTO DENTAL SCHOOL

<u>Marital Status</u>	<u>Year</u>				Total
	1	2	3	4	
Married with children	8%	8%	12%	16%	10%
Married no children	15%	14%	25%	34%	21%
Single engaged	9%	10%	11%	10%	10%
Single "going steady"	22%	25%	14%	12%	19%
Single unattached	45%	43%	36%	27%	39%
N/A	1%		2%		1%
	—	—	—	—	—
	100%	100%	100%	100%	100%
n=	(425)	(384)	(320)	(244)	(1373)

1. Students were asked to check which category best described their current status.

(when the studies by Hollinshead and Kohn were carried out) are less likely to marry early and have children, regardless of their national origin.

The above analysis of the basic status characteristics of dental students in Canada reveals few, if any, surprises which depart from the conventional stereotype of the dental recruit. As one would expect students who enter the dental school are for the most part single males in their early 20's. In the next section we examine other characteristics of these students including their social origins, the timing of their career choices, and their motives for entering dentistry.

(B) The Dental Recruit in Canada: Social And Cultural Origins

(1) Occupational and Educational Attainment of Parents

Given the findings of previous research on occupational mobility in both Canada and the United States (4), it is not surprising to find that dental students in Canada are disproportionately drawn from families with high income, high education, and high occupational status.

Both the fathers and mothers of Canadian dental students have attained educational levels considerably higher than the parents of other individuals in the 15 to 29 year age group (Table 5.4 and 5.5). For example, only 22% of the fathers of dental students surveyed in 1971 had attained an educational level of elementary school or less compared with 57% of the base population. Likewise, the

mothers of these dental students generally attained educational levels much higher than the population at large. These findings are consistent with results presented by Moore (1959) and Sherlock and Morris (1972) on United States dental students.

In spite of the relatively high educational levels attained by Canadian dental students, comparative data on medical students in Canada (Collishaw and Grainger, 1972) reveals that dentistry recruits from the lower educated sectors of the population to a greater extent than medicine. Forty-five percent of Canadian medical students come from families in which the father had at least part of a post-secondary education, compared to 30% of the dental students.

As might be expected, given the educational level of the fathers of Canadian dental students, their occupational status is also considerably higher than the general population. Analysis of the socio-economic status (SES) of dental students' fathers' occupations (as measured by the Blishen scale, 1966), reveals that almost one third of Canadian dental students come from high SES backgrounds compared to only 10% of the general population (Table 5.6).

Investigating the occupational origins of the dental students in greater depth indicates that the largest percentage of dental students' fathers are in the categories of "owners and managers" (34%), "professional and technical" workers (23%) (Table 5.7). This is contrasted with Canadian medical education where a slightly higher percentage of

TABLE 5.4

DENTAL STUDENTS FATHER'S EDUCATIONAL ATTAINMENT BY
YEAR OF ENTRY INTO DENTAL SCHOOL COMPARED WITH CANADIAN
MEDICAL STUDENTS AND THE BASE POPULATION

<u>Father's Education</u> ¹	<u>Year of Entry</u>					<u>Canadian Medical</u> <u>Students</u> ²	<u>Base</u> <u>Population</u> ³
	1967	1968	1969	1970	Total		
Elementary or less	24	23	22	22	22	15	57
Secondary	45	47	46	48	47	40	37
Post-secondary	30	29	31	29	30	45	7
N/A	1	1	1	1	1		
	—	—	—	—	—		
	100%	100%	100%	100%	100%		
n=	(244)	(320)	(384)	(425)	(1373)		

1. Each category includes those who only partially completed that level of education.
2. Neil Collishaw and R.M. Grainger. "Canadian Medical Student Selection and Some Characteristics of Applicants, 1970-71", Journal of Medical Education Vol. 47, 1972:254-266.
3. The Population in Canada Aged 40 to 65 in 1969, Vital Statistics - Preliminary Annual Report, 1969 Dominion Bureau of Statistics.

TABLE 5.5

DENTAL STUDENTS MOTHERS EDUCATIONAL ATTAINMENT
BY YEAR OF ENTRY INTO DENTAL SCHOOL

Mother's Education

	1967	1968	1969	1970	Total	Base Population ¹
Elementary	21	22	23	17	22	56
Secondary	63	62	62	66	64	41
University	<u>16</u>	<u>16</u>	<u>15</u>	<u>16</u>	<u>14</u>	<u>3</u>
	100%	100%	100%	100%	100%	100%
n=	(244)	(320)	(384)	(425)	(1373)	(2,263,228)

1. Dominion Bureau of Statistics, 1961 Census of Canada, Bulletin 7:1-10, Females over 45 Years, Ottawa: Queen's Printer, 1965 Table XVII, p-. 10-28.

TABLE 5.6

DENTAL STUDENTS SOCIO-ECONOMIC STATUS¹
BY YEAR OF ENTRY TO DENTAL SCHOOL

<u>SES</u>	<u>Year of Entry</u>				Total
	1967	1968	1969	1970	
Low	28%	34%	31%	32%	30%
Medium	31%	31%	32%	32%	32%
High	32%	32%	35%	33%	34%
	—	—	—	—	—
	100%	100%	100%	100%	100%
n=	(244)	(320)	(384)	(425)	(1373)

1. As measured by the Blishen scale (Blishen, 1961).

students come from "professional and technical" backgrounds and a slightly lower percent of students fathers are "owners and managers".

The occupational origins of the 1972 Canadian dental students our study are significantly different in a number of respects from those examined by McFarlane in 1964. (1) There is an increase from 23% to 29% in the number of students whose fathers fall into the "professional and technical" category, (2) there is a decrease from 34% to 29% in students whose fathers' are "owners and managers", (3) there is an increased proportion from category C (clerical, sales, transport and communication) and a decrease from category E (craftsmen, production process workers, etc.) (4) there is a significant drop in the percentage of students whose fathers are either dentists or physicians (5).

These differences would appear to indicate that a shift (from the early to the late 1960's) has occurred the pattern of recruitment into dentistry. It is interesting to note that this shift is characterized more by changes within lower and higher levels of the occupational system than by the movement into dentistry by a large percentage of individuals either set of categories. Thus, while the percentage of students whose fathers' are "owners and managers" drops 5% from 34% to 29%, the percentage from "professional and technical" increases by about the same amount that is still drawn from the upper echelons of the status hierarchy. Likewise the percent whose fathers' are in clerical and sales (Category C) increases by 7% (9% to

TABLE 5.7

DENTAL STUDENT'S FATHERS OCCUPATIONS¹ (HIGH SCHOOL YEARS) BY YEAR OF ENTRY
IN DENTAL SCHOOL COMPARED WITH CANADIAN MEDICAL STUDENTS (1972),
DENTAL STUDENTS IN 1964, AND THE BASE POPULATION

Father's Occupation ²	Year of Entry				Canadian Dental Students (196)	Canadian Medical Students (1970)	Base Population ³ (1969)
	1967	1968	1969	1970	Total ³		
A. Owner's and Managers	28	31	25	32	29	34	14
B. Professional and technical	29	26	33	26	29	23	7
Dentists.....	(3%)	(6%)	(4%)	(3%)	(4%)	(5%)	
Professions.....	(5%)	(3%)	(4%)	(2%)	(4%)	(7%)	
C. Clerical, service transport, sales and communication	14	18	16	17	16	7	26
D. Farmers, loggers and miners	8	5	8	7	6	8	5
E. Craftsmen, production process worker, laborer, and not elsewhere specified	16	19	17	15	17	21	36
	100%	100%	100%	100%	100%		
n=	(244)	(320)	(384)	(425)	(1373)		

1. Students were asked to list the occupation of their father during their high school years.

2. Statistics Canada, (1961) Occupation Categories.

3. Does not include those in "Occupations not stated".

4. Adapted from Bruce A. McFarlane, Dental Manpower in Canada, Queens Printer, 1965:124.

5. Neil Collishaw and R.M. Grainger, "Canadian Medical Student Selection and Some Characteristics of Applicants, 1970", Journal of Medical Education, Vol. 47, 1972:254-266.

6. Base population is 1969 male population aged 40 - 69, Vital Statistics - Preliminary Annual Report 1969, Dominion Bureau of Statistics.

16) while the other two categories dropped by an almost equivalent amount. It is not without interest, however, that recruits from the "bottom" have dropped off, from 21% to 17%.

While complete analysis of these changes is beyond the scope of this thesis, two possible explanations may be suggested. One is that these changes reflect shifts consistent with the transition to a post-industrial occupational structure (ie. a dominance of professional, technical, sales and clerical occupations). The magnitude of changes in the general occupational structure in Canada over the past seven years have, however, been insufficient to account for these differences (6).

The second possible explanation for these differences is that, since the study reported by McFarlane, the opening of three new dental schools in the West of Canada has altered the overall pattern of recruitment into dentistry. When these "new" schools are compared with the older, more established ones (Table 5.7 Subscript A) some variations in recruitment patterns are evident, although again not enough to account for these differences (it is noteworthy, however, that what differences do exist suggest that the newer schools recruit students from lower occupational backgrounds to a greater extent than the established ones).

(2) Cultural and Regional Origins

In the present study the cultural and regional origins of dental students in Canada are examined with respect to

TABLE 5.7 (A)OCCUPATIONAL ORIGINS OF DENTAL STUDENTS
IN "NEW" AND "OLD" SCHOOLS¹

Occupational ² Category	New	Old
1	25	31
2	28	31
3	18	16
4	10	6
5	<u>18</u>	<u>16</u>
	100%	100%
n=	(242)	(1096)

1. This distinction based on schools which have been instituted since 1964. The "new" schools are: University of British Columbia, University of Saskatchewan, and the University of Western Ontario. The "old" schools are: University of Alberta, University of Manitoba, University of Toronto, McGill University, University of Montreal, and Dalhousie University.
2. Based on the 1961 Dominion Bureau of Statistics Census categories.

mother tongue, place of birth, province of high school years, and size of community during the students' high school years.

The first language of slightly over two thirds (68%) of dental students in Canada is English. Of the remaining students, almost one half are francophones (18%) with the others listing one of a variety of European and Asian languages as their mother tongue (Table 5.8). It should be noted that the percentage of francophone students shown is slightly lower than one would expect for two reasons; First, a slightly lower percentage of students at the Universite de Montreal (the French speaking dental school surveyed) participated in the study compared with students at other schools, and second, this study did not include Laval Universite Dental School which had admitted its first class of students in 1971. In spite of these considerations (which would increase the percentage of francophone students to no more than 22% or 23%) French speaking students are significantly under-represented in Canadian dental education. English students, on the other hand, are over represented while students with a first language other than the two charter ones are represented to about the same extent as the population at large. This pattern differs from that evident in the Canadian medical schools in which francophone students are only slightly under represented (28%), English students are slightly over represented (62%), and students with other first languages are significantly under represented (Collishaw and Grainger, 1972).

TABLE 5.8

DENTAL STUDENTS MOTHER TONGUE¹ BY YEAR OF
ENTRY INTO DENTAL SCHOOL

Mother Tongue	1967	Year of Entry			Total	Base 2 Population	Canadian Medical ³ Students
English	64%	73%	66%	68%	68%	54.9%	62.4%
French	16%	14%	20%	19%	18%	31.7%	28.4%
Polish	00%	1%	0%	1%	*	13.7%	9.2%
Ukrainian	2%	2%	2%	1%	2%		
Italian	00%	1%	1%	2%	1%		
German	2%	0%	2%	1%	1%		
Asian	3%	3%	4%	4%	4%		
Other	7%	5%	5%	4%	6%		
N/A	6%	1%	0%	-	1%		
	100%	100%	100%	100%	100%		
n=	(244)	(320)	(384)	(425)	(1373)		

1. Students were asked to list their "first language".

2. Base population is 1969 male population aged 15-39, Vital Statistics, "Preliminary Annual Report 1969", Dominion Bureau of Statistics.

3. Source: Neil Collishaw and R.M. Grainger, "Canadian Medical Student Selection and Some Characteristics of Applicants, 1970", Journal of Medical Education, Vol. 47, 1972:254-266.

With regard to the province of birth, data presented in Table 5.9 indicate that dental students are disproportionately drawn from certain regions. Surprisingly, Saskatchewan, which had just opened a dental school, has been able to maintain a relatively high percentage of students in each of the Canadian dental schools. Less surprising is the over representation of students born in Ontario, especially given the fact that three out of every five students in Canada receive their dental education in that province.

Foreign born students make up about 20% of the dental student population in Canada. This is similar to the percentage of all foreign born males in this age group (20%). While more detailed breakdown of the country of origin of this group is not available, it seems reasonable to assume, on the basis of the data on mother tongue of dental students, that a sizeable proportion come from English speaking areas especially the British Commonwealth countries and the United States.

In contrast to the province of birth of Canadian dental students, Table 5.10 relates their province of residence during their high school years to the school which they entered. As this table indicates, more than 70% of the students at each of the Canadian dental schools, with the exception of Dalhousie University, attended high school in the province of their dental school. With respect to the regional background of its students, Dalhousie University displays the most cosmopolitan pattern of recruitment

TABLE 5.9

DENTAL STUDENT'S PROVINCE (OR COUNTRY) OF BIRTH
BY YEAR OF ENTRY TO DENTAL SCHOOL

Province of Birth	Year of Entry				Total
	1967	1968	1969	1970	
British Columbia	5%	6%	6%	5%	6%
Alberta	8%	9%	6%	8%	8%
Saskatchewan	5%	6%	5%	3%	5%
Manitoba	2%	4%	4%	6%	4%
Ontario	28%	28%	27%	29%	28%
Quebec	19%	23%	24%	22%	22%
Maritimes	5%	5%	6%	5%	5%
Foreign born	21%	18%	22%	21%	21%
N/A	<u>5%</u>	<u>1%</u>	<u>0%</u>	<u>1%</u>	<u>1%</u>
	100%	100%	100%	100%	100%
n=	(244)	(320)	(384)	(425)	(1373)

TABLE 5.10

ORIGINS OF CANADIAN DENTAL STUDENTS REGISTERED
IN 1962-63 AND 1970-71 BY DENTAL SCHOOL

Province of High School Years	University of British Columbia	University of Alberta	University of Saskatchewan	University of Manitoba	University of Western Ontario	University of Toronto	McGill University	University of Montreal	Dalhousie University
<u>1970-71</u>									
Home Province	70%	70%	93%	71%	93%	88%	81%	89%	34%
Other Province	13%	22%	-	11%	3%	4%	6%	4%	47%
Outside Canada	<u>17%</u> 100%	<u>8%</u> 100%	<u>7%</u> 100%	<u>8%</u> 100%	<u>4%</u> 100%	<u>8%</u> 100%	<u>13%</u> 100%	<u>7%</u> 100%	<u>19%</u> 100%
n=	(106)	(166)	(29)	(75)	(111)	(419)	(129)	(253)	(89)
<u>McFarlane 1962-63</u>									
Home Province	*	58%	*	66%	*	90%	48%	94%	29%
Other Province	*	41%	*	32%	*	2%	15%	3%	54%
Outside Canada	*	<u>2%</u> 100%	*	<u>2%</u> 100%	*	<u>8%</u> 100%	<u>37%</u> 100%	<u>3%</u> 100%	<u>17%</u> 100%

Adapted from Bruce A. McFarlane, 1965:47.

followed by the University of Alberta, the University of British Columbia, and the University of Manitoba.

These findings when contrasted with those reported by McFarlane (1965:47) indicate a number of shifts in the pattern of recruitment into dentistry. The most notable change concerns McGill University which in 1964 recruited only 48% of its students from the province of Quebec but which presently recruits slightly more than 80% from that province. While part of this change is due to the development of new dental schools in British Columbia, Saskatchewan, and Ontario which have reduced the number of applicants from students in these provinces, the major reason for this change is due to provincial government pressure and to restrictions on the number of students recruited from abroad especially the United States. In terms of recruitment abroad, the University of British Columbia now follows only slightly behind Dalhousie University with regard to the proportion of its students who attended high school outside of Canada.

Further, even more potentially significant shifts in the regional backgrounds of dental students in Canada are evident when one compares the size of community of origin of students participating in our study and the findings reported by McFarlane (1965:59) for those registered in 1963. In 1963, 27% of dental students came from communities of 10,000 or less compared with 22% in 1971. This shift of 5% is offset by an increase in the percentage of students from communities whose population size is between 10,000 and

TABLE 5.11

SIZE OF DENTAL STUDENTS COMMUNITY OF ORIGINS
BY YEAR OF ENTRY INTO THE DENTAL SCHOOL

Size of Community	Year of Entry				Total	Canadian Dental ¹ Students	Canadian Medical ² Students	Base Population ³
	1967	1968	1969	1970				
Under 10,000	22%	24%	21%	22%	22%	27%	20%	36%
10,000 - 99,000	22%	24%	26%	26%	25%	21%	25%	15%
100,000 or over	<u>56%</u>	<u>51%</u>	<u>52%</u>	<u>51%</u>	<u>52%</u>	52%	54%	49%
	100%	100%	100%	100%	100%			
n =	(244)	(320)	(384)	(425)	(1373)			

¹ Adapted from Bruce A. McFarlane, Dental Manpower in Canada.

² Source: Neil Collishaw and R.M. Grainger, "Canadian Medical Student Selection and Some Characteristics of Applicants, 1970", Journal of Medical Education, Vol. 47, 1972:254-266.

³ Base population is 1969 male population aged 15-39, Vital Statistics, "Preliminary Annual Report, 1969", Dominion Bureau of Statistics.

100,000 persons. This change in the pattern of recruitment in dentistry reflects fairly accurately a shift in the general Canadian population with a drop during the 1960's in the percentage of the Canadian population in small communities from 41% to 36%. It is interesting to note, however, that the decline in recruits from small communities has not been matched by an equivalent increase in the percentage of recruits from large cities but rather by an increase in those coming from middle size communities.

In this respect, dentistry like medicine currently draws a greater percentage of its recruits from cities of 10,000 to 100,000 population than would be expected on the basis of the distribution of the Canadian population (Table 5.11).

Up to this point we have outlined the social, cultural, and regional origins of dental students in Canada. We have examined in general terms the pattern of recruitment into dentistry and compared it with that of dental students of almost a decade ago and of medical students enrolled in 1970-71. In addition these data have been presented for each of the four cohorts who participated in the ACFD Study in order to indicate the extent to which changes in recruitment across Canada are evident for the years 1967 through 1970.

While the data on the four cohorts clearly indicate no significant difference with respect to the characteristics examined, a question which has major methodological significance for the remainder of this thesis concerns the

extent to which differences were evident between the cohorts within each of the schools. Because of the cross-sectional nature of the data used in this study, consideration of this aspect of recruitment is crucial since variation along the independent variables between the years at each of the dental schools represents potential confounding factor in the estimation of changes in students professional orientation. Thus, differences between cohorts within each of the nine schools represented in this study are briefly examined in this section.

Rather than show detailed breakdowns for each of the years in each of the schools for all of the factors so far considered, we present in Table 5.12 the significance levels association with CHI Square values for each of these factors. These values can be considered as indicators of the extent to which statistically significant differences exist between the cohorts within each of the dental schools (6).

As is evident in Table 5.12, in only two cases is the significance attached to the CPI Square value less than .05. These cases are the province of residence during high school at Dalhousie University and father's occupation of students at the University of Western Ontario.

In addition in four cases there are differences significant between .05 and .1 level. In the first of these cases, the University of Saskatchewan, there is a significant difference between students with respect to sex. At Western Ontario, students in the four years are different in terms of their SES, the four cohorts at the University of

TABLE 5.12

THE SIGNIFICANCE OF DIFFERENCES ACROSS COHORTS WITHIN EACH OF THE DENTAL SCHOOLS IN CANADA, FOR SELECTED VARIABLES (BASED ON THE CHI-SQUARE VALUES)

	Sex	Age ¹	Fathers' Education	Socio-Economic Status ²	Fathers' Occupation ³	Mother's Tongue ⁴	Birth Place	Province of Residence in High School	Size of Community
University of British Columbia	.46	.56	.55	.66	.44	.82	.73	.42	.92
University of Alberta	.25	.58	.51	.36	.83	.43	.61	.73	.39
University of Saskatchewan	**.09	.21	.47	.36	.29	.37	.73	.68	.86
University of Manitoba	.42	.68	.94	.84	.59	.74	.57	.36	.67
University of Western Ontario	.34	.71	.19	**.10	*.02	.14	.13	.38	.47
University of Toronto	.18	.44	.59	.57	**.06	.69	.73	.43	.59
McGill University	.53	.41	.27	.75	.18	.93	.57	.88	.29
University of Montreal	.68	.63	.99	.58	.67	.20	.25	.29	**.07
Dalhousie University	.28	.55	.71	.28	.99	.18	.31	*.04	.65

1. Age is trichotomized.

2. Trichotomized into high, middle, and low.

3. The five (1961) census categories are used.

4. The languages other than English and French are grouped together.

* Better than .05 level of significance.

** Better than .10 level of significance.

Toronto are significantly different in terms of their fathers' occupations, while at the Universite de Montreal, differences are evident in the size of students' community of origin.

While this analysis of differences between cohorts within each of the Canadian dental schools indicates that students display generally similar backgrounds, the existence of significant differences for some characteristics at some of the schools represents an important methodological problem. In the next chapter we will examine the relationship between these characteristics and the professional orientations of first year students in order to assess the implication of these differences for estimating changes in students' professional orientations.

(C) The Dental Recruit in Canada: Career Choice Strategies --

Reasons For Entering Dentistry and the Timing of Career Decisions

In the previous two sections a number of characteristics of dental students in Canada were examined. These included attributes such as age, sex, and marital status, and aspects of students social and cultural origins such as fathers' education and occupation, mother tongue and the size of the students' community of origin. In this section the focus of our analysis shifts from the question of who enters dentistry to why and when they decided upon dentistry as a career.

As in the previous section, both topics will be

considered in terms of the four cohorts which participated in the ACFD Study. Initially, this will consist of a description of the motives and timing of dental students recruited between 1967 and 1970. Following this, differences between cohorts within each of the schools will be examined.

(1) Reasons for Choosing Dentistry as a Career

Investigating the reasons why individuals choose a career such as dentistry involves a number of methodological problems which make the understanding of this aspect of career choice rather difficult. In the first place, it seems reasonable that some students had no clear cut reason for choosing dentistry - they have always wanted to be a dentist. When they are asked on a questionnaire to articulate why they choose dentistry, they may have considerable difficulty and their responses may be unreliable. Secondly, the responses of students in later years of the dental school when asked why they choose dentistry may reflect a retrospective bias and again lead to problems of reliability and validity (8). While it is not possible to assess the seriousness of either problem in view of the data utilized in this thesis, the possibility of measurement errors as a result of these problems necessitates a cautious interpretation of the findings presented below.

A number of reasons have been suggested as to why students enter dentistry (Sherlock and Morris, 1972). They include; (1) students are attracted to dentistry because

they like to work with their hands, (2) dentistry is the second choice occupation for students who are unsuccessful in gaining admission into medicine, (3) monetary gain is the major reasons for entering dentistry, and (4) students are in dentistry because their fathers are dentists. While this latter reason is clearly not a major factor since findings presented earlier in this chapter shows that less than 5% of the fathers of dental students are dentists themselves, what about the other three reasons?

The first of these implies that dental students enter dentistry because they have special manual or mechanical interests - a desire to work with their hands. The importance of this reasons for students' career choice has been examined by a number of investigators (9). McFarlane for example (1965) reports findings from the 1963 survey of dental students which indicate that "twice as many dental students cited this reason than cited any other single reason". Our study indicates that, while manual dexterity is important for many students in deciding to enter dentistry (Table 5.13), for only a few students is it the most important reason (Table 5.14).

A second reason commonly given for students entering dentistry is referred to by Sherlock and Morris as the "second choice" hypothesis. According to this view, most students enter dentistry only because they were unable to get into their first choice occupation - medicine. A number of past studies of dental education have refuted this claim. For example, Mann and Parkin (1963) in their study of dental

TABLE 5.13

IMPORTANCE OF "OPPORTUNITY TO WORK WITH YOUR HANDS"
IN CHOOSING DENTISTRY BY YEAR OF ENTRY INTO DENTAL SCHOOL

		Year of Entry				
		1967	1968	1969	1970	Total
Importance of "opportunity to work with your hands" in choosing dentistry as a career	Very Important	17	18	20	23	20
	Moderately important	63	62	61	61	61
	Slightly important	15	13	14	12	14
	Not important	<u>5</u>	<u>8</u>	<u>5</u>	<u>4</u>	<u>5</u>
		100%	100%	100%	100%	100%
n=		(244)	(320)	(384)	(425)	(1373)

TABLE 5.14

MOST IMPORTANT FACTOR IN CHOOSING DENTISTRY.
BY YEAR OF ENTRY INTO DENTAL SCHOOL

Most Important Factor	1967	1968	1969	1970	Total
Work with hands	13	10	9	10	10
Interesting work	12	13	11	12	12
Work for other	20	24	23	23	23
Money	9	13	7	8	9
Field not overcrowded	1	1	*	1	1
Be own boss	24	24	30	28	27
Be a "professional"	*	1	1	1	1
Suited personality	5	5	4	3	4
Life Style	<u>16</u>	<u>11</u>	<u>12</u>	<u>12</u>	<u>13</u>
	100%	100%	100%	100%	100%
n=	(244)	(320)	(384)	(425)	(1373)

students found that "the great majority (89%) were seeking admission to only a dental school". Similar findings were reported by Quarentelli (1969) and Fish and Brown (1966).

- These studies suggest that dentistry rather than viewed as a second choice by dental students is seen as a superior alternative in that it offers more practical advantages hours, less demanding work, less responsibility than medicine and with many of the same rewards serve mankind.

In the present study students were not asked what occupations they had considered before dentistry. They were however, asked to indicate their alternate career paths if they had not gone into dentistry. These findings, (presented in Table 5.15) indicate that only slightly over one-third of the students would choose medicine or surgery as an alternate occupation, thus substantiating results from previous research in both Canada and the United States.

A third reason which has been advanced to explain why students enter dentistry concerns the factor of monetary gain. The role which the expectations of high income play in the students' decision to enter dentistry is consistently mentioned in the literature. For example, Yohn (1958) states that monetary reward and the improvement of economic status are the two most important motivating factors in students' decisions to enter dentistry. Similar findings are presented by Sherlock and Cohen (1966). They state when the mini-max strategy (i.e. easy access and high reward) is applied to the problem of recruitment into the professions, it becomes clear that the best combination of these factors is to be found in dentistry compared with other professions

TABLE 5.15

ALTERNATE CAREER CHOICES BY YEAR OF ENTRY
IN DENTAL SCHOOL

Second Choice of An Occupation	Year of Entry				Total
	1967	1968	1969	1970	
College or University Teaching	8%	6%	6%	7%	6%
Scientific Research	11%	10%	12%	15%	12%
Elementary or High School Teaching	8%	6%	12%	10%	9%
Pharmacy	3%	5%	5%	7%	5%
Medicine or Surgery	38%	38%	31%	36%	36%
Engineering	5%	4%	4%	2%	4%
Law	4%	4%	3%	3%	4%
Architecture	4%	5%	3%	1%	3%
Business or Commerce	6%	11%	6%	6%	7%
N/A	<u>13%</u>	<u>11%</u>	<u>18%</u>	<u>13%</u>	<u>14%</u>
	100%	100%	100%	100%	100%
n=	(244)	(320)	(384)	(425)	(1373)

such as law, medicine and university teaching.

There can be little doubt that the expectations of high monetary reward play a role in students' decision to enter dentistry. However, such an explanation for students' decisions fails to take into account the fact that the monetary rewards for almost all professions are relatively high. Thus while monetary gain may be a consideration in the decision to become a professional, the choice of a specific profession is often based on other considerations. We find, for example, for the dental students registered in 1970-71 that monetary reward is listed as the most important factor in deciding upon dentistry as a career by less than 10%. (Table 5.14) Instead of these factors the major reason given by students for entering dentistry is independence.

The importance of this factor in the decision to become a dentist is perhaps most dramatically indicated in Table 5.16. This table shows the percentage of students responding to the question, "If you had the choice between entering dentistry which was salary versus another comparable fee-for-service profession, which one would you choose?" As this table indicates, almost half of the students presently enrolled in Canadian dental schools would choose a comparable profession. Thus while a wide number of factors seem to be considered in the choice of dentistry as a career, it would seem that the independence of the occupation (which in the minds of students is reflected by the fee-for-service method of payment) is the major reason.

TABLE 5.16

PREFERENCE FOR SALARIED DENTISTRY OVER ANOTHER FEE
FOR SERVICE PROFESSION BY YEAR

	Year of Entry				Total
	1967	1968	1969	1970	
A. (Dentistry, salaried)	40%	42%	47%	48%	45%
B. (Fee for Service, comparable profession)	48%	48%	46%	44%	46%
N/A	<u>12%</u>	<u>10%</u>	<u>7%</u>	<u>8%</u>	<u>9%</u>
	100%	100%	100%	100%	100%
n=	(244)	(320)	(384)	(425)	(1373)

Later in this chapter, we will examine the extent to which significant differences are evident between cohorts within each of the schools with respect to their reasons for choosing dentistry.

The Timing of Career Decisions

The literature on professional socialization contains numerous references to the manner in which professional recruits "time" their career decisions. For example, Rogoff (1957) compares the time at which medical students first thought about becoming a doctor to when they finally decided to enter medicine. Similarly, Theilens (1957) in his study of law students, examines early in late deciders, while O'Shea (1961) and Helfrick and Quarantelli (1974) analyse this process in dentistry.

In the present study, two aspects of the timing of students' career choices are investigated. Like Rogoff, we examine both when students first thought about dentistry and the time at which they finally decided to enter that profession (Tables 5.17 and 5.18).

For both elements of students' career choice strategies there exists considerable variation within each of the cohorts. Thus, while almost two-thirds of the students first thought about entering dentistry before they entered university, the remaining one-third considered this career either during university or after their first degree. Likewise, almost one-third of the students report that they definitely decided to enter dentistry before leaving high

TABLE 5.17

WHEN STUDENTS "FIRST THOUGHT" ABOUT BECOMING
DENTISTS BY YEAR OF ENTRY INTO
DENTAL SCHOOL

When First Thought About Becoming A Dentist	Year of Entry				
	1967	1968	1969	1970	Total
Before High School	19%	18%	21%	20%	20%
During High School	38%	41%	45%	46%	42%
Between High School and University	11%	9%	8%	11%	10%
During University	23%	25%	19%	19%	22%
After Basic Degree	<u>6%</u>	<u>5%</u>	<u>4%</u>	<u>8%</u>	<u>6%</u>
	100%	100%	100%	100%	100%
n=	(416)	(370)	(311)	(237)	(1334)

TABLE 5.18

WHEN DEFINITELY DECIDED TO BE A DENTIST BY
YEAR OF ENTRY INTO DENTAL SCHOOL

When Definitely Decided To Be A Dentist	1967	1968	1969	1970	Total	Canadian Dental Students ¹ 1963
Before High School	2.5	3.0	5.4	4.6	4	7
During High School	34.3	31.4	26.1	24.9	28	47
Between the end of High School and University	8.6	10.0	10.2	8.9	9	*
During University	44.4	44.6	47.5	47.0	46	34
After Basic Degree	<u>10.1</u>	<u>11.1</u>	<u>10.8</u>	<u>13.8</u>	<u>11</u>	<u>12</u>
	100%	100%	100%	100%	100%	100%
n=	(349)	(314)	(271)	(198)	(1132)	

1. Adapted from Bruce A. McFarlane, Dental Manpower in Canada, Ottawa:
Queen's Printer, 1965:124.

school while for two-thirds this decision came after high school graduation (for most during college).

Comparing the timing of career decisions between cohorts reveals that students' in the later years (ie. those who entered in 1967 and 1968) are most likely to report about having thought of and decided upon dentistry at an earlier age than either first or second year students.

Whether this indicates a shift in the timing of career decisions for dental students or simply represents measurement error given the unreliability of retrospective data is difficult to determine. Comparison with findings reported by McFarlane from the 1963 study of dental education suggests that differences between the cohorts represents the continuation of changes in the timing of career decision through the 1960's. Thus, while McFarlane reports that 47% of students registered in 1962-63 decided to enter dentistry during their high school years, we find that beginning with the cohort recruited in 1967, a continuing decline in students who made their career decisions at this time (a drop from 34% to 25%). Similarly, there is a tendency for increasing percentage of students to make the decisions during university. Thus, in this sense, the differences may be viewed as reflecting actual changes in recruitment patterns.

An alternate explanation for the observed difference between the four cohorts with respect to the timing of career decisions is that they reflect variations, due to the dental school experience, in the reliability of this

retrospective data. This explanation is suggested by Helfrick and Quarantelli in their study of Ohio dental schools in which similar discrepancies between freshmen and senior students were noted. They provide some convincing evidence to support this explanation since their study included a longitudinal component in which they readministered a questionnaire to the same group of students as they proceeded through the dental schools. In comparing students responses from first year with their responses in subsequent years they note, "there was a tendency (for students in later years) to report slightly earlier points of time both as to thinking and deciding about dentistry" (Helfrick and Quarantelli, 1974:125).

Given these findings and in the absence of comparable longitudinal data, it seems clear that no final conclusions can be drawn regarding the extent to which differences between the cohorts reflect actual changes in the timing of career decisions. However, it is likely, given differences between all the students in our study and those examined in 1963, that at least some of the variation between cohorts is due to actual shifts in when students decided to enter dentistry. It would be expected, however, that the magnitude of the difference would be slightly inflated.

Given our concern with estimating changes in students' professional orientations, a more important question is to what extent there are significant differences (both in terms of the timing of career choice and reasons for entering

dentistry) between cohorts within each of the schools.

In Table 5.19 are shown the significance levels associated with both aspects of the timing of career decisions considered above and the major reason for choosing dentistry. As one will note there exists for two of the schools, differences between cohorts at the level of .05 (Manitoba and Western Ontario). While at three of the schools (Saskatchewan, Montreal, and Dalhousie) there are differences significant at the .1 level. When these are combined with the differences associated with background variables considered in the previous section, it is evident that for all of the schools, except British Columbia and Alberta, there exists significant differences along one or more of the variables. While the magnitude of these differences is relatively small (only in three cases do they exceed the .05 level), the possibility is nevertheless left open that differences which we observe in our treatment of students' professional orientations are due to differences in recruits.

In the next chapter, the background characteristics and career choice strategies of first year dental students are related to their professional orientations. The purpose of this analysis is to discover to what extent differences between students with respect to their background characteristics and career choice strategies reflect variation in the professional orientations they hold upon entering the dental school.

TABLE 5.19

THE SIGNIFICANCE OF DIFFERENCES WITHIN SCHOOLS BETWEEN COHORTS
RESPECT TO THE TIMING OF CAREER DECISIONS AND REASONS
FOR ENTERING DENTISTRY

	Reasons For Entering	First Thought	Definitely Decided
University of British Columbia	.30	.24	.56
University of Alberta	.70	.75	.43
University of Saskatchewan	.22	.45	.08**
University of Manitoba	.05*	.34	.37
University of Western Ontario	.86	.29	.01*
University of Toronto	.22	.15	.24
McGill University	.28	.10**	.36
University of Montreal	.39	.06**	.10
Dalhousie University	.07**	.19	.79

* .05 level or better.

** .10 level or better.

FOOTNOTES FOR CHAPTER FIVE

¹For a general discussion of selection in Dentistry see Heller et al (1965).

²For a discussion of women in the professions in general, see Epstein (1971); Theodore (1971); Mattfeld and Aken (1967); and Frithiof (1962).

³A number of investigators have examined the reason why women have not generally aspired to be dentists. See for example Richards and Lefcowitz (1967); Kriesberg and Treiman (1969); Linn (1971); and Rosenzweig et al (1968).

⁴See for example Schoenfeldt (1968); Broom (1959); Caro and Philbald (1965); Blau and Duncan (1967).

⁵This finding is not surprising in view of the evidence by McFarlane (1965) that the sons of dentists choose their father's career to a lesser extent than those of other professionals including Physicians, Lawyers and Notaries, Pharmacists and School Teachers.

⁶Because the value of Chi-Square is sensitive to the sample size - these probability levels must be considered only approximate indicators of the differences. Especially given the fact that the population of the schools varies considerably.

⁷For a theoretical discussion of some of the reasons for unreliability in retrospective data see Strauss (1970:122-131).

⁸This aspect of dental students' reasons for entering dentistry has been examined by a number of investigators; Wylie (1955); Quarantelli (1961a); Sherlock and Morris (1972).

CHAPTER SIX

FROM RECRUITMENT TO SOCIALIZATION

THE PROFESSIONAL ORIENTATIONS OF DENTAL STUDENTS AT ENTRY

In the previous chapter, we examined the background characteristics and career choice strategies of dental students in Canada. This discussion focussed on two aspects of recruitment into dentistry: across school differences between the four cohorts which participated in the ACFD Study and variations between cohorts within each of the schools.

In this chapter, we examine the relationship between the background characteristics and career choice strategies introduced in Chapter 5 and the professional orientations which students display at entry. Since differences were evident between cohorts within most of the schools for at least one of the characteristics examined, we attempt to discover in this chapter if such characteristics reflect differences in students' role orientations. Thus, in view of the finding, for instance, that statistically significant differences exist between the class years at the University of Saskatchewan in terms of the sex of recruits we attempt in this chapter to estimate the extent to which males versus females hold different role orientations at entry. If such difference are evident then it is likely, at least at the University of Saskatchewan, that variation across the cohorts with respect to students' professional orientations does not reflect actual changes.

In order to assess the relationship between background characteristics and students' professional orientations at entry, we present our findings, not on the total population of students surveyed but only for the first year students.

The rationale for proceeding in this way is based on the belief that only through examining first year students (ie, those who have just entered the dental school) can we arrive at the best estimate of the true relationship which exists between background characteristics and professional orientations. Thus, while in the previous chapter we attempted to answer the question of what kinds of students come to the dental school in this chapter we ask what kinds of professional orientations do different types of students display when they arrive at the dental school. In Chapter 7 we will examine what happens to these students while at the dental school.

In examining the relationship between background characteristics and students' professional orientations we follow the pattern established in Chapter 5. That is to say, we begin with an analysis of the status characteristics of first year dental students followed by an examination of students' social, cultural, and regional origins and finally a discussion of the relationship between students' career choice strategies and their professional orientations at entry.

(A) Status Attributes

In Chapter 5, we noted that the average dental student in Canada was a single male in his early twenties. With regard to differences between the cohorts both across and within the dental schools, no significant variation was evident with respect to the age of students at entry. For

the sex of recruits, significant differences (at the .1 level) were evident at the University of Saskatchewan, while students varied considerably between the cohorts in terms of their marital status. (Although as was indicated, it was not possible to determine the extent to which cohorts differed in terms of their marital status at entry). Given this variation in recruitment between cohorts, the question arises as to what differences these students display in their professional orientations?

Findings relating both variables to students' professional orientations at entry are presented in Tables 6.1 and 6.2.

The first of these tables indicates that only a weak relationship exists between the sex of the recruit and his or her professional orientation. What slight differences do exist suggest that female dental students are more likely to hold a modern professional orientation than their male counterparts. In view of the findings on the practice characteristics of women dentists presented by McFarlane on Canadian and Talbot on American women dentists, the fact that Canadian women dental students are slightly more disposed towards a modern professional orientation than their male counterparts should come as no surprise. Both of these studies have shown that women dentists are more likely to engage in public health, salaried dentistry (attributes consistent with a modern orientation) (1).

In the case of marital status, again only a weak relationship is evident. What differences do exist,

TABLE 6.1.

PROFESSIONAL ORIENTATION BY SEX OF RESPONDENT

Professional Orientation ¹	Sex of Respondent	
	Male	Female
Modern	29%	37%
Mixed	37%	32%
<u>Traditional</u>	<u>34%</u>	<u>31%</u>
	100%	100%
n=	(401)	(29)

N= (430)²

Cramer's V= .10

-
1. The professional orientation scale (traditional and modern) was trichotomized.
 2. First year students only.

TABLE 6.2

PROFESSIONAL ORIENTATION BY MARITAL STATUS OF RESPONDENT

Professional Orientation	Marital Status of Respondent			
	Married with Children	Married without Children	Single, Engaged	Single, Unattached
Modern	29%	17%	16%	35%
Mixed	31%	42%	36%	36%
Traditional	40%	41%	47%	29%
	100%	100%	100%	100%
n=	(35)	(65)	(38)	(289)
N=	(477)			
Cramer's V=	.11			

indicate almost paradoxically that those students who are the most likely to hold modern orientations toward dentistry are those who are single and unattached and those who are married with children. This indicates, at least on the surface, that the degree of family responsibility of dental students, has no direct bearing on the professional orientation which they hold. It might have been expected that given the "higher" risk associated with the modern orientation, (ie. the modern orientation represents a model of dentistry which has yet to be fully implemented) students with greater levels of responsibility would be more inclined to view dentistry along "traditional" lines. The fact that almost twice as high a percentage of students who are single and unattached or married with children hold modern orientations compared with their fellow recruits clearly indicates that this is not the case. One possible explanation for these differences is that students are single and engaged or just newly married with no children face the greatest degree of uncertainty about their future and as a result are more likely to hold conventional-traditional or "more certain" notions about dentistry. Such an explanation, however, cannot be tested in the context of this thesis.

Even though students who are single or married with children hold different professional orientations than those who are married with no children or single and engaged, the overall strength of this relationship indicates that marital status is not a very good predictor of students'

orientations. The vast majority of dental students who enter the Canadian dental school are single and within this category then exists fairly wide differences between students.

Thus while students differ in a number of cases from year to year with respect to the two status characteristics which we have examined, our analysis indicates that these attributes are only weakly related to their professional orientations.

(B) Social, Cultural and Regional Origins

In Chapter 5 we showed that the pattern of recruitment into dentistry in Canada with respect to social, cultural and regional origins varies only slightly between the four cohorts considered in this study. However, when differences between these cohorts within each of the schools were examined a number of significant variations were evident. The existence of such differences necessitates an analysis, in this section, of the relationship between those factors considered and students professional orientations at entry.

(1) Occupational and Educational Attainment of Parents

Findings relevant to the relationship between the occupational and educational attainment of students' parents and their professional orientations are presented in Tables 6.3, 6.4, 6.5, and 6.6.

These data would seem to indicate that the origins of students with respect to parental occupation and education

TABLE 6.3

PROFESSIONAL ORIENTATION BY RESPONDENTS
FATHERS EDUCATION

Professional Orientation	Elementary or Less	Secondary Partial or Complete	Post Secondary Partial or Complete
Modern	30%	31%	27%
Mixed	36%	40%	32%
Traditional	34%	29%	41%
	100%	100%	100%
n=	(94)	(206)	(125)
N=	(425)		
Somer's Q= .03			

TABLE 6.4

PROFESSIONAL ORIENTATION BY RESPONDENTS' MOTHER'S EDUCATION

Professional Orientation	Elementary or Less	Secondary Partial or Complete	Post Secondary Partial or Complete
Modern	29%	31%	24%
Mixed	38%	37%	34%
Traditional	<u>33%</u>	<u>32%</u>	<u>42%</u>
	100%	100%	100%
n=	(90)	(264)	(67)
N= 421 Somer's D=.06			

TABLE 6.5

SOCIO-ECONOMIC STATUS (BLISHEN) OF FATHERS' OCCUPATIONS

Professional Orientation	Low	Medium	High
Modern	31%	34%	30%
Mixed	37%	37%	36%
Traditional	<u>32%</u>	<u>29%</u>	<u>34%</u>
	100%	100%	100%
n=	(150)	(137)	(141)
N= 428			
Somer's D = .06			

TABLE 6.6

DENTAL STUDENTS PROFESSIONAL ORIENTATION BY FATHERS' MAIN OCCUPATION
(DURING THE STUDENTS' HIGH SCHOOL YEARS)

Professional Orientation	Owners & Managers	Dentists	Physicians	Other; Professional & Technical	Clerical, Service Transport	Farmers, Loggers Miners	Productive Process Workers
Modern	28%	(1)*	29%	30%	34%	31%	31%
Mixed	36%	(5)	28%	29%	34%	49%	44%
Traditional	<u>36%</u>	(3)	<u>43%</u>	<u>41%</u>	<u>32%</u>	<u>20%</u>	<u>25%</u>
	100%	-	100%	100%	100%	100%	100%
n =	(138)	(9)	(14)	(93)	(73)	(35)	(55)

Cramer's V = .07

are only slightly related to students professional orientations.

Thus while 27% of students whose fathers attended university display a modern orientation, 30% of those whose fathers' never attained an education level beyond Elementary School hold similar orientations. In the case of students socio-economic status, a similar pattern is noted with about one in three students in both the high and low SES categories displaying a modern orientation. In the case of fathers' occupation (broken into occupational categories) the pattern is indicated. (A statistically insignificant but nevertheless interesting finding regarding fathers' occupations is that those students who are least likely to hold a modern orientation are the sons' of dentists. Given their close contact with traditional models of dental practice, this finding is not surprising).

These findings on the social origins of dental students appear at least on the surface, inconsistent with evidence from other studies (Cotgrove and Box, 1972; Caro and Philblad, 1965) which indicate that students from differing social class backgrounds hold different occupational role images. While a full analysis of the reason for this inconsistency is beyond the scope of this work it might be at least suggested that a number of factors operating both in the process of choosing a career and being chosen have the effect of cancelling out initial differences between SES groups within the pool of potential applicants. In terms of choosing a career it seems reasonable that students with

role images at variance with those perceived as the established role definition will be less likely to apply (Ginzberg, 1951; Katz and Martin, 1962). In addition, the process of selecting applicants for a given occupation may either intentionally or unintentionally select those consistent with a given conception of an occupational role (2). Thus, for example, in dentistry using the chalk carving test as a tool in the selection process may result in the recruitment of students with strong "manual and technical skills" orientation (a component of the traditional role orientation).

(2) Cultural and Regional Origins

In the previous chapter we noted that there exists considerable diversity among dental students in Canada in terms of both their cultural and regional origins. While these differences have remained relatively constant across the dental schools for the four cohorts examined, there were significant differences between cohorts within a number of schools for one or more aspects of cultural and regional origins. It is the existence of such differences which leads us to ask, in this section, if these four factors are related to students professional orientations at entry.

In Table 6.7, the linguistic backgrounds of students recruited in 1970 are related to their professional orientations. While the association between for both variables is relatively low (Cramer's $V=.20$) there exists not only a statistically significant but substantively

TABLE 6.7

PROFESSIONAL ORIENTATION BY RESPONDENTS' MOTHER TONGUE

Professional Orientation	English	French	European	Asian	Other
Modern	23%	55%	29%	26%	31%
Mixed	39%	28%	35%	37%	31%
Traditional	<u>38%</u>	<u>17%</u>	<u>36%</u>	<u>37%</u>	<u>38%</u>
	100%	100%	100%	100%	100%
n =	(296)	(82)	(17)	(19)	(16)

Cramer's V = .20

important difference between Francophones and students of other language groups. Thus, over half of the Francophones hold a predominately modern orientation compared with less than one quarter of the English students and slightly more than one quarter of students from other backgrounds. This is contrasted with the finding that English students are over twice as likely as their French speaking counterparts to hold a traditional orientation toward the dental profession. In the case of students whose mother tongue was other than English or French, the slight difference evident in terms of the percentage who hold modern orientations is offset by their similarity with Anglophones with respect to traditional orientations.

The rather substantial differences between English and French students would, at least on the surface, tend to support the position of Brazeau (1958) that linguistic differences often manifest themselves in different attitudes and values. This argument is given even greater credibility when one considers the findings presented above which indicate that social class backgrounds (the factor which is usually thought to be highly confounded with ethnic or linguistic characteristics) are not related to students' professional orientations.

Because linguistic differences (especially between English and French) are highly confounded with the regional origins of students, and since students who come from different regions display varying professional orientations (Table 6.8) it is necessary to consider the question of

TABLE 6.8

PROFESSIONAL ORIENTATION BY PROVINCE OF RESIDENCE
DURING RESPONDENTS HIGH SCHOOL YEARS

Professional Orientation	British Columbia	Prairies	Ontario	Quebec	Maritimes	Other
Modern	25%	26%	18%	49%	24%	23%
Mixed	38%	40%	42%	28%	23%	38%
Traditional	<u>37%</u>	<u>34%</u>	<u>40%</u>	<u>23%</u>	<u>53%</u>	<u>39%</u>
	100%	100%	100%	100%	100%	100%
n =	(24)	(83)	(164)	(105)	(17)	(7)

Cramer's V = .22

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whether it is "region" or "language" which is responsible for these differences. Thus, it may be that differences between English and French are not the result of basic linguistic differences but regional factors such as the nature of secondary education or the zeitgeist of the region.

If this were the case, we would expect to find that students from the same region but with different linguistic backgrounds holding similar professional orientations. This is not the case, however, as is evident in Table 6.9. The relationship between professional orientations and regions of high school education controlling for linguistic differences (English and French only) appears to lend considerable support to the view that English and French students hold relatively different orientations because of their respective cultures and languages and not the regions in which they are educated.

That regional differences are only slightly related to students' professional orientations is further indicated in Table 6.10 which shows that the size of students community of origins is unrelated to their professional orientations.

These findings are interpreted with a degree of caution since it is possible that differences between English and French students are the result of variation in the effect of the dental schools. Such an alternative explanation must be considered since the data base which is used in this chapter consists of the responses of first year students who had

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TABLE 6.9.

PROFESSIONAL ORIENTATION BY AREA OF RESIDENCE DURING
HIGH SCHOOL YEARS, CONTROLLING FOR MOTHER TONGUE

	<u>English</u>			n=	<u>French</u>			n=
	Modern	Mixed	Traditional		Modern	Mixed	Traditional	
British Columbia	32%	32%	37%	(19)	*	*	*	
Prairies	26%	33%	41%	(85)	20%	80%	-	
Ontario	17%	42%	41%	(145)	* 1	*	*	
Quebec	33%	37%	30%	(30)	56%	24%	20%	(
Maritimes	20%	20%	60%	(15)	50%	50%	*	
Other	-	40%	60%	(5)	*	*	*	
			N =	(296)			N =	(

* One respondent or less in category

TABLE 6.10

PROFESSIONAL ORIENTATIONS OF FIRST YEAR DENTAL STUDENTS
IN CANADA BY SIZE OF COMMUNITY OF ORIGIN

Professional Orientation	<u>Size of Community of Origin</u>		
	Under 10,000	10,000 - 100,000	Over 100,000
Modern	26%	32%	32%
Mixed	40%	32%	37%
Traditional	<u>34%</u>	<u>36%</u>	<u>31%</u>
	100%	100%	100%
n =	(96)	(114)	(219)

N = (420)

Somer's D = -.05

already been exposed to the dental school albeit for only one term. While this alternate hypothesis cannot be adequately tested without data on students prior to entry --some suggestive evidence related to this problem will be examined in the next chapter.

(C) Career Choice Strategies

In Chapter Five we noted that in five of the dental schools in Canada there exists statistically significant variation between cohorts with respect to one or more dimensions of students' career choice strategies. Given the retrospective nature of students' responses to the items dealing with reasons for entering dentistry and the timing of their careers, it was suggested that at least part of the difference between years was due to the effect of the school in altering the students' level of commitment to his chosen occupation and thereby changing his perception of how and when he came to choose dentistry as a career. Thus, in a sense, differences between cohorts within the schools were to be expected.

Because of the changeable nature of students' perception of their career choice strategies, the analysis of the relationship between these strategies and students' professional orientations is less reliable in the case of background characteristics. Such an analysis does, however, at least indicate the extent to which these orientations are at least initially related to professional orientations.

Thus, in this section, students' professional

orientations at entry are related to the two dimensions of their career choice strategies considered earlier.

The first of these, the timing of career decisions (both with respect to when dentistry was first considered, Table 5.11 and finally decided upon as a career, Table 6.12) is only slightly related to students' professional orientations. Indeed, the only category which appears substantially different from the rest with respect to professional orientations is that of "between high school and university". The reasons for the higher percentage of students in this category who display a modern orientation is that French speaking students, who are required to attend a CFGEP (college d'enseignement general et professionnelle) after high school and before entering university, constitute the highest proportion of this group, and as noted above, Francophones are much more likely to hold modern orientations.

In the case of students' reasons for entering dentistry, there is again little relationship to their professional orientations (Table 6.13). What differences do exist indicate that students who choose dentistry to "work with their hands" or because it allows them to "work for others" are more modern in their orientations than those who entered because of the monetary rewards or independence of the career.

On the basis of these results it appears that career choice strategies are virtually unrelated to students'

TABLE 6.11

PROFESSIONAL ORIENTATIONS OF FIRST YEAR DENTAL STUDENTS IN CANADA BY WHEN THEY FIRST THOUGHT ABOUT BECOMING DENTISTS

Professional Orientation	High School	During High School	Between High School and University	During University	After Basic Degree
Modern	24%	33%	43%	26%	30%
Mixed	45%	38%	20%	39%	26%
Traditional	<u>31%</u>	<u>29%</u>	<u>37%</u>	<u>35%</u>	<u>44%</u>
	100%	100%	100%	100%	100%
n =	(80)	(162)	(49)	(99)	(27)

N = (417)

Somer's D = .02

TABLE 6.12

PROFESSIONAL ORIENTATIONS OF FIRST YEAR STUDENT IN CANADA BY
WHEN THEY DEFINITELY DECIDED TO BECOME DENTISTS

Professional Orientation	High School	During High School	Between High School and University	During University	After Basic Degree
Modern	25%	24%	36%	28%	30%
Mixed	31%	49%	35%	36%	30%
Traditional	<u>44%</u>	<u>27%</u>	<u>29%</u>	<u>36%</u>	<u>40%</u>
	100%	100%	100%	100%	100%
n =	(16)	(87)	(31)	(165)	(48)
N =	(347)				
Somer's D =	.01				

TABLE 6.13

PROFESSIONAL ORIENTATIONS OF FIRST YEAR DENTAL STUDENTS IN
CANADA BY THE MOST IMPORTANT REASONS
FOR CHOOSING DENTISTRY AS A CAREER

Professional Orientation	Work with Hands	Interesting Work	Work for Others	Money	Independence	Other*
Modern	32%	31%	32%	22%	24%	26%
Mixed	44%	50%	40%	39%	33%	38%
Traditional	<u>24%</u>	<u>19%</u>	<u>28%</u>	<u>39%</u>	<u>43%</u>	<u>36%</u>
	100%	100%	100%	100%	100%	100%
n =	(41)	(48)	(75)	(36)	(96)	(92)
N = (388)						
Cramer's V = .15						

* 'Others' include: "Field not overcrowded", "Be a 'professional'", "Suited personality", "Life Style".

professional orientations at entry. These findings coupled with those related to the background characteristics of recruits indicate that different types of students do not generally hold different professional orientations when they enter the dental school. One notable exception, of course, is the relatively large difference evident between English speaking students and their French speaking counterparts. The fact that both of their groups display considerable variation with respect to their professional orientations, presented the major substantive finding of this chapter. However, in the context of our methodological concern with estimating changes in students' orientations based on differences between cohorts, this finding is not especially significant because French students are enrolled almost exclusively at one school (the University of Montreal) where they constitute over 90% of the student population in each year.

In the next chapter, we shift our attention from the question of what types of students enter dentistry and what professional orientations they bring with them, to a consideration of the problem of socialization in the dental school with emphasis on the role of the school in the alteration of these orientations.

FOOTNOTES FOR CHAPTER SIX

¹Some reasons for womens' preference for salaried and public health models of dental practice is suggested by McFarlane (1965:67) who notes:

It appears, then, that participation in dental public health work and the school dental service is an adjustment which the married woman dentist makes to the exacting demands of a combination of professional practice and marriage and, for both the single and married women dentists it provides them with an opportunity to work with children. In addition, if they participate on a part-time basis after graduation it assists them in launching a career in the world of private practice.

²While a good deal of evidence suggests that the disproportionate distribution of students from lower class backgrounds in professional schools is because only a few apply (Collishaw and Grainger, 1972), the importance of conscious attempts to maintain class distinctions within professional schools should not be completely ruled out. Witness the following statement made by the British Royal College of Surgeons to the Royal Commission of Doctors and Dentists Remuneration in 1958.

...there has always been a nucleus of medical schools of students from cultured homes...This nucleus has been responsible for the continued high social prestige of the profession as a whole and for the maintenance of medicine as a learned profession. Medicine would lose immeasurably if the proportion of such students in the future were reduced in favour of the precocious children who qualify for subsidies from the local authorities and state purely on examination results.

Quoted from Robson (1973)

CHAPTER SEVEN

FROM DENTAL RECRUIT TO DENTAL PRACTITIONER:
PROFESSIONAL SOCIALIZATION IN THE CONTEXT OF THE DENTAL SCHOOL

Up to this point our discussion of dental education in Canada has consisted largely of an examination of the process of recruitment into dentistry. In this examination, we have attempted to provide answers to a number of questions including: What types of students enter dentistry, why, and when they chose dentistry as their career, and what professional orientations different types of recruits bring with them into dental school. In our treatment of these questions we have touched upon numerous general problems including: The role of dental schools and its system of selection as a vehicle for upward mobility into society, the relationship between background characteristics and career choice strategies, and their role in determining students' professional orientations upon entry into the dental school.

In this chapter, we shall attempt to come to an understanding of what happens to students after they enter the dental school, in their transition from neophytes to practitioners. In doing so we shift our attention from the individual dental student and the pattern of recruitment into dentistry to the dental school and its role in the socialization of dental recruits. In the first part of this chapter the process of dental education and the structure of the dental school are examined. Included in this treatment will be a presentation of findings which indicates the changes which students undergo during their course of dental training. In the latter part of the chapter, we analyse these changes in relation to the model of professional

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socialization developed in chapter three.:

The Canadian Dental Schools

There are at present, ten dental schools in Canada of which nine were surveyed in 1971. The tenth school, Laval University, had only just begun admitting students at the time of our survey, and will thus be excluded from this analysis. The remaining schools display considerable variation in terms of a number of characteristics including age, size, and the composition of the student body (table 7.1).

The oldest and largest dental school in Canada is at the University of Toronto. It was established in 1875 by the Royal College of Dental Surgeons and currently recruits about 150 students a year. It is located in downtown Toronto and draws the majority (see Chapter 4) of its students from Southern Ontario. The second oldest dental school in Canada (established in 1889) is located at McGill University and is considerably smaller than the University of Toronto with an average class size of approximately 40 students. Historically McGill University has been more cosmopolitan in its pattern of recruitment than the other schools in Canada (McFarlane, 1965) although in recent years it has drawn an ever larger proportion of its students from the Quebec English-speaking population. In Western Canada, the first dental school was established at the University of

groups or cohorts and thirdly they pass through a relatively standard process of training. The fact that students are processed in batches rather than individually has the effect of producing "classes" of students, each of which have a particular relationship to the dental school and the curriculum.

In spite of these differences between students they all share an essentially similar position in the status hierarchy of the school. Students by definition lack the special training and qualifications of their teachers, and therefore stand in an inferior position relative to their teachers in the school hierarchy. In this sense students are subordinate members of the dental school. They have little power to shape their lives in the dental school. They are selected to enter the school by the faculty on the basis of faculty defined objectives and subjective criteria. On entering the school they are required to follow the often tenuous directions of study given to them by the faculty, and at the end of their period of study it is the faculty who decide if they should be allowed to graduate or not.

Concomitant with their relatively powerless position, students are also dependent on faculty. The faculty member has the power, at regular periods to reward (pass) or punish (fail) the dental students. While most dental schools have low drop-out failure rates compared to other faculties in the University, the individual faculty member may, nevertheless, delay the student's graduation and therefore threaten to some extent his or her future. In

Alberta. It was originally formed as a school within the Faculty of Medicine in 1917 and maintained this status until 1944 when it was organized as an independent faculty in the university. Until the early 1950's the University of Alberta (which now recruits approximately 50 students per year) had acted as the training centre for would-be dentists from across Western Canada. Now, however, with dental schools established in all four western provinces, this school draws an increasing proportion of students from Alberta.

The only dental school in the Atlantic Provinces is located at Dalhousie University in Halifax. This school serves mainly the Atlantic Provinces and recruits about 25 students per year.

The University of Montreal dental school was until recently the only French-speaking school of dentistry in Canada. It recruits about 140 students per year who are almost all drawn from the French-speaking population of Quebec.

The remaining four dental schools were all established after 1956, and for the most part function as provincial rather than national schools. The first of this new generation of dental faculties was instituted at the University of Manitoba in 1957. It currently accepts approximately 30 students each year, as does the University of British Columbia School of Dentistry which was established in 1964. In 1968, a second Ontario dental school was established in London at the University of

Western Ontario. It currently admits between 40-50 students per year. The 'youngest' dental school in Canada considered in this study (established in 1969), is situated at the University of Saskatchewan in Saskatoon and has an average size cohort of ten students.

The Process of Dental Education

In spite of the diversity in both age, size, and composition which the Canadian dental schools display, the process of training to which the dental recruit is exposed at each is remarkably similar. This similarity is due for the most part to the relatively standard criteria utilized by the Canadian Dental Association in accrediting the dental schools.

The system of accreditation was instituted both in Canada and the United States in the early 1930's as a result of the deliberation of groups such as the Dental Education Council of America and the Gies Commission of Dental Education which pointed to the extreme variation and quality of dental education which existed at that time (1). As a result of the reports of these and other inquiries, dental schools were forced, in order to meet standards of accreditation to develop a relatively standard curriculum which survives today.

Courses of dental education in Canada and the United States usually consist of four years of training in which the first two are largely devoted to pre-clinical preparatory work while the final two are spent in the dental school clinic learning basic treatment skills. This distinction between the pre-clinic and clinical years is a salient feature of the dental school curriculum.

To a certain extent the first two years (i.e. the pre-clinical years) represent a continuation of the scholarly or theoretical education which characterized the student's pre-dental university education. The clinical years, on the other hand, because of the stress placed on the development of manual skills and the treatment of patients stand in sharp contrast to these first two years. During pre-clinical years the primary orientation of the curriculum is scientific and theoretical. Students are expected to integrate and understand a wide variety of scientific principles relevant not only to dentistry in particular but to the health sciences in general. These include such areas as Microbiology, Biochemistry, and Human Anatomy (including the dissection of cadavers). In addition they are required to develop certain basic manual skills in pre-clinical labs in areas such as Dental Materials and Operative Dentistry.

In the clinic, on the other hand, the emphasis is less on the learning of scientific knowledge and to a much greater extent on the development of technique. Much of the training involves the mastery of various "rules of

thumb" (many of which are not based on scientific principles) in the treatment of dental disease.

While in both the pre-clinical and clinical years some emphasis is placed on the development of these basic manual skills the nature of the student's training differs considerably between each. In the pre-clinical years what time is spent by the students in pre-operative labs consists of cutting cavity preparations and performing other restorative techniques on mannequins and other similar mock-ups of the mouth. The student in the clinic on the other hand performs these same procedures using living patients.

In the clinic, students are required through their work on patients to treat each of the dental diseases which a practitioner may face in dental practice. Because of the nature of the system of recruiting patients, the sequence of the student's training in the clinic is often less integrated than it is in the pre-clinical years during which time material is presented to students in a relatively systematic and integrated fashion beginning with basic principles through to more detailed material on specific types of dental problems. In the clinic, on the other hand, the student is exposed to a more or less random set of dental problems which are not necessarily presented to him in any particular order (2).

The nature of the supervision which is found in the clinic is also quite different from that found in the non-clinical setting. In the non-clinical setting, the style

of supervision is relatively relaxed and students are encouraged to experiment individually or in groups learning the subject matter through a trial and error method. In the clinic situation, however, a number of problems impede the development of a relatively "free" learning environment. Many of these difficulties centre around a basic dilemma which exists in the training of professional recruits. This dilemma arises from the conflicting requirements of developing an effective "learning" situation and at the same time maintaining professional responsibility toward the patient or client. To ensure that patients in the clinic receive treatment commensurate with the highest professional standards requires close supervision of students and the regulation of types of duties that students at various levels may perform. The application of such principles, however, undermines the freedom and experimentation which could facilitate the most effective learning on the part of the student. Thus in the clinic situation, the norm of professional responsibility necessitates the close supervision of students in which their work is checked frequently (3).

Because of these differences, the process of dental education consists of two almost separate stages of training. The first two years are characterised by a fairly rigorous course of study in the "theory" of basic health sciences. The last two consist of learning the manual skills and techniques, "the tricks of the trade" on which a dentist relies for his livelihood.

This distinction between clinical and pre-clinical years is not simply one of the differences in curriculum, of changes from deductive to inductive approaches but it also implies, as we shall see in the next section, a changing set of social relationships.

The Structure of the Dental School

In this section our attention shifts from the individual student and the process by which he is transformed from a recruit to a dentist to the structure of the dental school. Inasmuch as the basic units of such an examination "are not persons as such but selected aspects of interaction" (Smelser, 1967:5) this change in focus also represents a shift in the level of analysis from individuals to the more general network of relationships within which their action is embedded.

Our analysis of the structure of the dental school centers around, at least initially, the relationship between the two dominant positions of student and faculty member. As indicated earlier, the relationship between their roles is a persuasive feature of the professional school and thus serves as a natural starting point for this analysis of dental education.

The students who enter a professional school differ in at least three important respects from inmates who are admitted to other adult socialization agencies such as prisons and mental hospitals; first, they enter voluntarily, second, they are processed by the institution in defined

groups or cohorts and thirdly they pass through a relatively standard process of training. The fact that students are processed in batches rather than individually has the effect of producing "classes" of students, each of which have a particular relationship to the dental school and the curriculum.

In spite of these differences between students they all share an essentially similar position in the status hierarchy of the school. Students by definition lack the special training and qualifications of their teachers, and therefore stand in an inferior position relative to their teachers in the school hierarchy. In this sense students are subordinate members of the dental school. They have little power to shape their lives in the dental school. They are selected to enter the school by the faculty on the basis of faculty defined objectives and subjective criteria. On entering the school they are required to follow the often tenuous directions of study given to them by the faculty, and at the end of their period of study it is the faculty who decide if they should be allowed to graduate or not.

Concomitant with their relatively powerless position, students are also dependent on faculty. The faculty member has the power, at regular periods to reward (pass) or punish (fail) the dental students. While most dental schools have low drop-out failure rates compared to other faculties in the University, the individual faculty member may, nevertheless, delay the student's graduation and therefore threaten to some extent his or her future. In

addition poor undergraduate grades in dentistry may inhibit a student's entry into a post-graduate program.

Given this dependency of students on faculty directives and evaluations, it would be expected, from the perspective of students, that their activity takes place primarily within the context of formally or informally defined faculty expectations. Since faculty members' perception of students play such an important role in the fate of the individual student at the dental school, it is not surprising to find that students often adopt a low profile. For example, as Becker et al. (1961) notes, some of the students in the medical school which they studied tried desperately not to be noticed by faculty members. As mentioned in our earlier discussion in Chapter 3, the potential threat which the faculty members represent may act as an important impediment in the students' internalization of their teachers goals and ideals.

While faculty members have considerable power over students, this power exists only within formally specified areas. In this sense, a dental school displays at least a rudimentary degree of bureaucratization. Faculty positions are defined as offices and recruitment is based on merit with most positions being eligible for legally based tenure. Members of the faculty are expected to apply universalistic criteria in their evaluation of students and may be called upon to rationalize their decisions by their peers. In addition, while faculty members may have considerable influence over students, the latter are not totally

powerless. Unlike other centres of education, the individual faculty member is faced with the prospect of students becoming his peers after they graduate. With students as potential peers, the faculty member is forced to a greater extent than would otherwise be the case, to conform with student expectations of the faculty role. In addition, students may employ a number of strategies to sanction a given member of the faculty who has deviated from student's expectations of the faculty role (4).

In spite of the prospect of becoming peers, interaction between the students and faculty members in the dental school is often marked by role distance. The type of informal interaction and camaraderie which one often finds in a graduate department between faculty and students is found less often in the dental school.

Many of the full-time faculty members who have little informal interaction with students would usually not welcome any increase in such contact. As professional educators, they may feel they might be faced with the problem of a conflict of interest. If they had a great deal of informal interaction with the students, they might be placed in the situation of having to decide whether to pass or fail a marginal student who is also a good friend. In this way the dental school is like the graduate school in which the role of students as junior colleagues and subordinates confront the faculty member with the dilemma of maintaining sufficient role distance and at the same time attempting to develop a sense of professional collegiality within the

faculty.

While the major criterion of differentiation which exists within the dental school is that between students and faculty members there also exist, important structural distinctions within each of these groups. For the student body, important status distinctions exist based on the student's position along the time continuum from entrance to graduation. Thus as mentioned earlier, one of the defining characteristics of the student in the dental school is what "year" he is in. Students tend to interact more with students in their own year than with those in other years and thus, structurally speaking, the student body consists of four relatively homogeneous groupings of students defined by year of graduation.

With the faculty, other even more important structurally defined differences exist. While the faculty members display a hierarchical ordering of officials from Dean and Department Head through to Professor, Associate Professor, Assistant Professor, Lecturer, Instructor, and Demonstrator, an important feature of this ordering is that individuals in the higher ranks tend to be full time faculty members, while those in the lower ranks, especially in the Demonstrator and Lecturer categories, are appointed on a part-time basis.

Faculty members who teach in the school only part-time compared with those who teach full-time have, for the most part, different academic interests. The full-timer is usually committed to teaching and research in the academic

environment whereas the part-timer gains his livelihood from the world of practice, and may in fact actually lose money due to the time spent in the school. The part-time faculty member because of his involvement in the practice of dentistry, usually has a stronger commitment to the current structure of dental practice than his full-time faculty colleagues. Full-time faculty members usually possess an advanced degree beyond the basic professional qualification, the D.D.S., and often have a masters degree or a doctorate in a basic science discipline. In contrast, part-time faculty members usually have only the basic professional qualification, the D.D.S.

Parallel to the distinction between part-time and full-time faculty members is one which exists along departmental lines between clinical and non-clinical areas. That is to say there are important differences between faculty members who teach in the clinic and those who teach in non-clinical departments such as biochemistry or anatomy.

Non-clinicians are almost by definition most interested in the scientific bases of dentistry. Some members of this group have not studied for a dental degree and many of those who possess a dental degree no longer practice dentistry. Instead the primary interest of this group is in the etiology and pathology of dental disease.

Clinicians, on the other hand, are primarily responsible for teaching the technical skills of dentistry. Their academic departments are defined in terms of areas of treatment (the teeth, the gums, etc.) rather than

intellectual disciplines in the accepted sense of the term .

Most clinicians spend, at least some time practicing dentistry and a majority of the clinical staff are employed on a part-time basis spending most of their time practicing in the community.

When we consider the nature of faculty appointments and departmental affiliation, three important groups emerge: (1) the non-clinical full-time faculty member, (there are only a few part-time non-clinical staff), (2) the clinical full-time faculty member, (3) the clinical part-timer. The first of these groups teaches predominately in the first two years of the curriculum. Most possess an advanced degree and only a few practice dentistry. The full-time clinicians teach in all four years. While the majority of their attention is focussed on the clinical segment of the students training, they also give lectures and supervise labs in areas such as operative dentistry for first and second year students. The third group, the part-time clinicians, teach almost exclusively in the clinic and consists almost entirely of practitioners from the community.

This brief analysis of the structure of the dental school and the process of dental education indicates that becoming a dentist does not consist of passing through one single homogeneous phase of training, but rather involves two almost separate stages of education. Each is marked by a different subject matter, different faculty members, different styles of supervision and indeed a different

reward system. In the next section we examine the significance of these and other characteristics for the socialization of the dental recruit.

The Socialization of Dental Recruits?

School Based Changes In Students Professional Orientations

In this section we examine what changes are evident in the professional orientations of students while at dental school and relate these changes to both the process of dental education and the structure of the dental school. In carrying out this examination a model (developed in Chapter 3) will be utilized in an attempt to explain variations in both the level and direction of changes which students undergo.

Before proceeding with an examination of our findings as they related to this problem, however, it is first necessary to make a brief methodological note on the measurement of changes using cross-sectional data. As was indicated in Chapter Four in order to utilize differences between each of the years within the schools as an estimate of changes, it is necessary to consider three alternate or rival hypotheses (to that which states that differences are due to actual changes) these are:

- (1) Differences between the cohorts are not the result of actual changes but due to differences between the cohorts at entry.
- (2) Differences between the cohorts are due to experimental mortality or drop-outs. That is differences between students in early and later years are the result of students with a particular attitude leaving the institution.
- (3) Differences between cohorts are not the result of actual changes but due to sampling or measurement error.

Each of these potential rival hypotheses must be considered in utilizing aggregate level cross-sectional data in measuring changes in dental students professional orientations. Only then can a relatively approximate estimate of changes be determined.

In this study the mean differences between years at each of the Canadian dental schools will be utilized as an indicator (subject to an examination of the above factors) changes in students' professional role orientations while at dental school, the mean score rather than the standard deviation (or some other measure of dispersion) is employed because of our concern with both the level and direction of student's changes. While the standard deviation acts as an indicator of the amount of change, it does not provide information on the direction, thus necessitating the choice of the mean (given our assumption of interval level data).

The mean professional orientation score for each of the years at each of the schools in Canada is given in Table 7.2. These scores measure the degree to which a class is characterized by more of a 'modern' or 'traditional' professional role orientation. A low score indicates a modern orientation (ie. strong intellectual, social and community orientation and technical or manual skills orientation) while a higher score indicates what we have termed a traditional orientation (ie. strong business and technical or manual skills orientation, weak intellectual, social and community orientation).

The mean professional orientation score for each of the

Table 7.2

MEAN PROFESSIONAL ORIENTATION SCORE FOR EACH DENTAL CLASS¹

Schools	Year			
	1	2	3	4
University of British Columbia	.24	.57	-.04	1.5
University of Alberta	.24	.48	.76	.78
University of Saskatchewan	-.01	.88	-.58	2
University of Manitoba	-.31	-.64	.45	-.55
University of Western Ontario	.74	.66	.15	-.16
McGill University	-.17	-.76	-.72	-.77
University of Montréal	-.71	-.87	-.58	-.69
Dalhousie University	.93	.02	.65	.14
University of Toronto	.74	.66	.15	-.16

1. Negative scores indicate a modern orientation, positive scores a traditional orientation.
2. No fourth year class.

years at each of the dental schools is given in Table 7.2.

Before discussing the question of the extent to which differences in these scores indicate actual effect of the dental school, a number of interesting findings which emerge from this table should be noted. (1) There is a relatively high variation in the mean scores of first year students, which would seem to indicate that students differ substantially across the schools upon entry. At schools such as Toronto and Dalhousie, students appear to enter with a predominately traditional orientation while students at Montreal and to a lesser extent Manitoba and McGill, have modern orientations. (2) For students in their final years at each of the schools, a similar variability may be noted. Those at Alberta and the University of British Columbia have predominately tradition orientations while those at McGill, Montreal, and Manitoba have a more modern orientation. (3) The pattern of differences between each of the years at each of the various schools in Canada indicates no universal trends. At some schools such as Toronto, consistent increases in modernity may be observed while at other schools, such as Montreal, modernity is maintained with only small fluctuations in each of the years are evident. At other schools, such as the University of British Columbia, Manitoba, and Dalhousie, mean student appear to fluctuate almost randomly between first and fourth year. It is noteworthy that both of the Quebec schools are characterized in all years by a modern orientation.

While such differences are interesting and potentially

useful for further analysis, the question remains as to what extent these differences between means indicate actual changes which students undergo in the dental school. Let us examine this question in terms of each of the three rival hypotheses outlined above.

(1) Selection

If the rival hypothesis of the differential selection were valid, we would expect to find systematic differences between each of the cohorts in each of the dental schools. However, as was discussed in Chapter 5, such differences are not evident at most schools.

(2) Experimental Mortality

This hypothesis states that perceived differences between the years are due to differential drop-out rates. The drop-out rate at Canadian dental schools is on the average less than ten percent (Canadian Dental Education Register, 1972). This would also tend to give further credibility to the assertion that these differences indicate actual changes across the years.

(3) Sampling and Measurement Error

The hypothesis which states that differences between the years are of such a magnitude that they can be explained in terms of normal sampling or measurement error is more difficult to contend with than the above two. It was decided to utilize a one way analysis of variance between

each of the years within each of the dental schools in Canada in order to examine this problem. The results of this analysis (Table 7.3) indicates that only at the University of Toronto are the differences between the means across the years of a sufficient magnitude that they could not be explained simply by chance fluctuation in either measurement or sampling. This would appear to indicate, at least on the surface, that only at the University of Toronto can the assertion that the differences between the means of each of the years are due to random fluctuation be considered highly improbable.

One difficulty, however, in drawing conclusions from the significance level attached to each of the schools, is that the number of students enrolled plays a major role in determining the overall level of significance. Thus while at the University of Toronto, which has a high student enrollment, a difference between the years of 0.8 leads to a significant F ratio, a difference of 1.5 at the University of British Columbia, is insignificant. In addition, at some schools where enrollment is fairly low such as the University of Saskatchewan, it would be necessary to have a very high difference between each of the years in order for it to be statistically significant.

When the results of this analysis of variance are applied literally we are left with the conclusion that only at the University of Toronto are the differences such that it is unlikely they could have occurred by chance alone. If this conclusion were entertained it would be then necessary

Table 7.3MEAN DIFFERENCES (1st TO 4th YEAR) AND ANOVA SIGNIFICANCE LEVELS

Schools	Mean Difference (1st-4th year)	F	Significance
University of British Columbia	1.2	1.7	IS
University of Alberta	.53	.5	IS
University of Saskatchewan	.59	1.8	IS
University of Manitoba	.24	1.1	IS
University of Western Ontario	.33	.5	IS
University of Toronto	.90	4.2	.001
McGill University	.60	.5	IS
University of Montreal	.03	.3	IS
Dalhousie University	.79	1.4	IS

for us in our analysis of the source of change in students' professional orientations to examine the question of why Toronto appears to influence its students while the other eight schools do not.

It would seem however, that the question is not simply do some schools effect their students, while others do not; but rather why do some schools appear to influence students more than others. Statistically significant or not, the pattern of differences between each of the years at the various dental schools in Canada indicates (for exploratory purposes) a wide number of different school effects.

Thus in spite of the possibility that some of these differences between the years at each of the dental schools might be due to sampling or measurement error that the use of differences between means as an indicator of changes in students' professional orientations is, we believe, useful for a number of reasons. First, utilizing mean difference scores provides one with a relatively conservative estimate of changes which students undergo while at dental school. This is because a number of students change in opposite directions and will tend to cancel each other out and these changes will not appear in the mean difference scores. Second, we have at our disposal not one experimental situation, but nine; thus allowing for a high degree of comparability between various kinds of institutional experiences. Third, the examination of aggregate versus individual differences, while not the ideal method, is from the perspective of the overall problem of this thesis fairly

appropriate. As was indicated in Chapter one the major problem to which this study is directed concerns, in general terms, the ability of professional education to influence the professional as a whole. This emphasis on the collective rather than the individual effects of professional education makes the use of aggregate measures much more defensible. Fourth, because of the relatively exploratory nature of our study and the heavy weight which is placed on understanding the role which various factors play in the overall process of professional education, the use of cross-sectional data, while not the best method, constitutes an important step in the overall understanding of the nature of professional education in the absence of longitudinal data.

The Effect of the Professional School on Students' Professional

Orientation: A Test of the Model

In our discussion of changes which students experience while at dental school, we noted that students in the different schools appear, at least on the basis of the aggregate level comparisons of mean differences, to undergo a wide variety of changes. At some schools, such as the University of Toronto, students become more modern through each successive year while at others, like the University of Alberta, they appear to become more traditional. At still others, either no changes are apparent or changes appear to be almost random. In this

section we attempt to explain this variation in both the level and direction of change which students appear to undergo while at dental school using a model developed in Chapter Three.

This model outlined four types of factors' under which the influence of the faculty on students' professional orientations would be expected to vary. Two of these were related to the professional school while the third concerned the background of students and their receptibility to influence.

At the level of the professional school it was hypothesized that students' acceptance or rejection of faculty attitudes hinged on their perception of faculty as supportive or non-supportive. When students viewed faculty as supportive this was seen as an indicator of the extent to which their role is characteristic of junior professional colleagues thereby increasing the likelihood that they will accept (subject to a number of further conditions) faculty professional orientations. Students' perception of faculty as non-supportive, on the other hand, was viewed as an indicator of the extent to which they would display adaptive behavior consistent with their subordinacy role and tend to reject faculty attitudes.

While consideration of students' perception of faculty supportiveness yields an initial indication of the direction of changes in students' orientations, the degree of change which students actually undergo was seen as contingent on both the size of the school and the degree of consensus

among faculty in terms of their professional orientations. Thus it was hypothesized that students' adoption of faculty attitudes would be inversely related to the extent of faculty differences and the size of the school.

In the case of students' receptivity to influence it was further hypothesized that students who made late career decisions regarding dentistry would be more likely to change their orientations (again subject to the conditions outlined above) than those who made early decisions.

Before discussing findings relevant to these hypotheses, it is first necessary to consider the general strategy of analysis and the methods by which each of the variables are measured.

Because of the relatively small number of cases in the study (nine schools) and the nature of the indicators used to measure the variables, it is clear that any attempt to test these hypotheses must be considered exploratory. Thus it was decided that the best method for testing these hypotheses would be the use of interval level multi-variate techniques (i.e., multiple regression and correlation analysis). The fact that these data violate a number of assumptions commonly associated with the use of regression and correlation analysis make it necessary to interpret our findings with caution. It should not however preclude their use as methodological tools in the assessment of our model of professional socialization. The potential "payoff" of such techniques in contributing to an understanding of the nature of professional socialization far outweighs, we

believe, the methodological inappropriateness of their use. This method allows for an assessment of the relative importance of each of the independent variables as well as providing a visual 'plot' of the relationships which facilitates a more in depth analysis. In addition it enables an analysis of the interaction between variables and the 'control' of possible confounding factors in the test of hypotheses. Thus, while the data do not conform to all of the assumptions for utilizing interval level multi-variate techniques it is felt that if interpreted cautiously these methods would allow for a more incisive analysis than would otherwise be the case.

The strategy for testing our hypotheses using these methods is to first examine changes in students' professional role orientations related to the three 'school' factors outlined earlier. Following this an analysis of the timing of students' career decisions will be undertaken. The examination of school factors begins with an investigation of two types of changes in students' professional orientations. First, aggregate measures for each of the three independent variables are developed for each of the schools. These are then related to mean differences between the first and fourth year classes at each of the schools, which is used as an indicator of the dependent variable. Using these measures we will arrive at a general indication of the ability of these three independent variables to account for the variations in the changes which students undergo at dental school (ie. between first and fourth year).

Following this we will examine the pre-clinical and the clinical years as two stages of dental education. In this analysis we will attempt to develop a more refined model by measuring each of the variables relative to the pre-clinical and clinical years.

Changes From First to Fourth Year: An Initial Test of the Model

In this initial test of the model developed in Chapter Three the absolute difference between the scores of first and fourth year students at each of the schools in Canada is utilized as a measure of the extent of change during undergraduate dental education. The absolute differences are assigned a sign depending on whether the difference is in the direction of the orientation of faculty (+) or away from these orientations (-). (As was discussed in Chapter four the mean score of faculty members - adjusted for variation in sub-population sample size and hours of contact with students - was used as the measure of faculty orientations). This then provides us with an indicator of the extent to which students have adopted the overall orientation of their faculty. The mean scores of faculty members, the absolute difference between first and fourth year and the sign given to each of these differences are presented in Table 7.4.

While the general methods utilized in measuring each of the three independent variables used in the study were discussed in Chapter four, it is necessary to consider in this section the calculation of summary measures for each of

Table 7.4

FIRST TO FOURTH YEAR ABSOLUTE DIFFERENCES, FACULTY
MEANS AND SIGNS FOR THE DEPENDENT VARIABLE

School	1st to 4th year Difference	Faculty Means	Sign ¹
University of British Columbia	1.2	.37	+
University of Alberta	.53	.65	+
University of Saskatchewan	.59	-4.9	+
University of Manitoba	.24	.11	-
University of Western Ontario	.33	-.10	-
University of Toronto	.90	.53	-
McGill University	.60	.44	-
University of Montreal	.03	-.66	+
Dalhousie University	.79	-.54	+

1. A "+" indicates movement toward faculty mean
 A "-" indicates movement away from faculty mean

these variables. (1) Students Perception of Faculty Support -- The percentage of students falling within the lowest quartile of the supportiveness scale (i.e. the proportion who view faculty as non-supportive) is used. (2) Faculty Consensus -- The standard deviation of weighted faculty scores was calculated and used as the measure of consensus. (3) Size -- The actual size of the student body at the time of the study is used.

The measures for each of these variables at the various dental schools in Canada are shown in Table 7.5.

Analysis of the zero order relationship between each of these and our dependent variable (See figures 7.1, 7.2, and 7.3) indicates: (1) Strong relationship in the predicted direction between size and change (2) A weak relationship although again in the predicted direction between support and change (3) A moderately strong relationship, not in the predicted direction, between consensus and change. While these findings provide us with an initial hint of the relationship between each of the independent variables and change in students' professional orientations, the methodological problem of collinearity coupled with our theoretical interest in the interaction effects of support and both size and consensus, necessitates a closer examination of these data. In order to assess both the net and interactive effects of the independent variables, three regression models are specified (Table 7.6).

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Table 7.5

SCHOOL WIDE MEASURES OF SUPPORTIVENESS, CONSENSUS, AND SIZE

School	Supportiveness ¹	Consensus ²	Size ³
University of British Columbia	27	4.5	127
University of Alberta	25	3.6	194
University of Saskatchewan	3	9.5	31
University of Manitoba	31	5.7	113
University of Western Ontario	11	5.2	132
University of Toronto	19	4.4	491
McGill University	25	3.5	154
University of Montreal	40	5.5	312
Dalhousie University	16	5.1	95

1. The percentage of students falling into the lowest quartile of the supportive scale.
2. The standard deviation of faculty
3. Actual size

Figure 7.1

FILE STATIONS (OFFSHORE) DATE = 02/04/70
SUBJECT: TOTAL
SCATTERING OF (00-4) CMBHF

Figure 7.2
(ACROSS) SURF

PCB TO TRY THE SCATTERGRAM

03/07/74

PAGE

FILE STUDENTS (CREATION DATE 03/04/74)

SUBFILE TOTAL

SCATTERGRAM OF (DOWN) CHANGE

Figure 7.3

(ACROSS) CONSENSU

RUN TO TRY THE SCATTERGRAM

STATISTICS..

CORRELATION (R) -

STD ERR OF EST -

PLOTTED VALUES -

0.11486

0.79397

8

R SQUARED

INTERCEPT (A) -

EXCLUDED VALUES -

0.01319

-0.34842

0

SIGNIFICANCE -

SLOPE (B) -

MISSING VALUES -

0.39327

0.50233

0

PAGE 7

MODEL I : $\text{CHANGE} = a + b_1\text{support} + b_2\text{size} + b_3\text{consensus}$

MODEL II : $\text{CHANGE} = a + b_1\text{support} + b_2\text{size} + b_3\text{support} \times \text{size}$

MODEL III : $\text{CHANGE} = a + b_1\text{support} + b_2\text{consensus} + b_3\text{support} \times \text{consensus}$

The first model indicated the basic relationship (without interaction effects) between change and the three independent variables. Analysis of the direction and magnitude of the Beta coefficients, reveals: a) The net effect of size on change is virtually the same as in the simple bivariate case, again in the hypothesized direction, (b) the relationship between consensus and change is considerably weaker although still in the opposite direction to that which was expected, (c) the support change relationship controlling for size and consensus is now positive in indicating a specification error in the original zero-order relationship. Again the magnitude of the Beta coefficient is relatively small (.17).

Models II and III are intended to test the hypothesis that support systematically effects the adoption of faculty role orientations. In order to test this hypothesis, two jointly classified variables are constructed (b_3 support $\times$ size and b_2 support $\times$ consensus). In Model II the relative effects of the interaction between support and size is compared with the independent effects of both variables. In Model III the same strategy is employed to examine the interaction between support and consensus.

In both cases the size of the Beta coefficients indicates no substantial improvement in a predictive power of either equation when the interaction term is included. This would suggest that the effects of size and consensus are not dependent upon support as had been hypothesized.

The findings presented in Table 7.6 would appear to indicate that only our hypotheses concerning the relationship between size and change in students' orientations is supported by the data.

On the surface these findings would seem to suggest that students in small schools are more likely to change their attitudes in the direction of faculty than those in large schools. Such a conclusion must, however, be made with care since the t-value associated with the regression coefficient for size (Model I) fails to meet the .05 level of significance. Analysis of a plot of both variables (Figure 7.1) reveals that the strength of the relationship between size and change is due mainly to two data points (Montreal and Toronto) which fall toward the right hand corner of the scattergram. When these two cases are omitted from the analysis the strong relationship with size disappears.

Before the implications of these findings for our analysis of professional education can be fully discussed, it is first necessary to consider the second method for testing these hypotheses. As was mentioned earlier it was possible to test these hypotheses not only on a school wide basis but also in terms of pre-clinical and clinical years.

TABLE 7.6

CHANGE IN PROFESSIONAL ORIENTATIONS
FROM FIRST TO FOURTH YEAR:

REGRESSION COEFFICIENTS AND OTHER STATISTICS

EXPLANATORY VARIABLES	MODEL I		MODEL II		MODEL III	
	b	beta	b	beta	b	beta
Constant	.288		.534		-.180	
Support	.012 (.39) ¹	-.17 (-.08) ²	.003 (.07)	.045 (-.08)	.012 (.47)	.19 (-.08)
Size	-.003 (1.5)	-.57 (-.55)	-.003 (1.0)	-.54 (-.54)		
Consensus	.035 (.19)	.08 (.23)			-.014 (.04)	-.03 (.23)
Support x Size			.075 (.04)	.17 (.26)		
Support x Consensus					-.023 (.45)	-.043 (-.19)
R ²	.32		.34		.09	
s.e.e.	.752		.743		.870	
n	9		9		9	

1. b/standard error *denotes significance at .05 level (two tailed test)

2. Zero order r.

CHANGES IN PRE-CLINICAL AND CLINICAL YEARS: A REFINED TEST OF THE MODEL

In our discussion of the structure of the dental school and the process of dental education it was clear that becoming a dentist does not necessarily involve passage through a single socialization process, but rather exposure to two quite different stages of education. It was noted that the pre-clinical years differ from the clinical years, both in terms of the nature of the training which students receive, the type of faculty to which they are exposed to and the style of supervision. On the basis of these considerations it was felt that a more refined test of the model developed in Chapter 3 might be obtained by examining changes in relation to both pre-clinical and clinical faculty. If indeed the interests of faculty are quite different between the clinical and pre-clinical years, it is possible that these members of the faculty indeed influence students professional orientations under the hypothesized conditions but that this influence is hidden in the analysis of school wide changes. That is to say, the effects of each of these stages may cancel each other out. Thus in calculating measures appropriate to both pre-clinical and clinical years and utilizing these measures as a test of hypothesis it may be possible to arrive at a more refined test of the hypothesis.

In order to test the model using pre-clinical and clinical scores, it is necessary to find appropriate measures for each of the variables. In the case of the dependent variables, differences between first and second,

year are used as a measure of pre-clinical changes and differences between second and fourth year as measures of clinical changes. These measures are then "scored" with either a positive (+) or a negative (-) sign according to whether or not they represented moves toward or away from the scores of the pre-clinical and clinical faculty. (The absolute difference between first and second and second to fourth at each of the Canadian dental schools along with the 'mean' orientation of clinical and pre-clinical faculty and the final measure of our dependent variable are found in Table 7.7).

Calculation of faculty means is based on the weighted scores of faculty members at each of the schools in Canada. Three groups are identified within the faculty in the calculation of pre-clinical and clinical scores. The first group consists of non-clinical full-time and part-time faculty members, the second, clinical part-time faculty members while the third is made up of full-time clinical faculty members. In the calculation of scores for the pre-clinical years the scores of non-clinical full-time and part-time faculty as well as clinical full-time staff members are utilized. In the case of the clinical years the full-time and part-time clinical members scores are used. The reasons for using scores of full-time clinical faculty members in the calculation of the pre-clinical scores is that at all of the schools most clinical full-time faculty members have some teaching contact with students in the first and second year especially in areas such as operative

Table 7.7

ABSOLUTE DIFFERENCE 1-2, 2-4, FACULTY MEAN SIGN, CLINICAL -- NON-CLINICAL

School	Absolute Difference Pre-clinical Clinical	Faculty Mean Clinical Non-clinical	Sign Clinical Non-Clinical
University of British Columbia	.28	.98	-1.2 .87 - +
University of Alberta	.24	.30	.33 .85 + +
University of Saskatchewan	.57	*	-4.9 * + *
University of Manitoba	.33	.09	.37 .33 - +
University of Western Ontario	.50	.83	-1.1 .54 + +
University of Toronto	.06	.82	- .56 .93 + -
McGill University	.59	.01	- .46 .75 + -
University of Montreal	.16	.18	-1.3 -.98 + -
Dalhousie University	.91	.12	-1.99 -.10 + -

* no clinical years.

dentistry, oral anatomy, and dental materials. Thus, it is felt that in order to arrive at an accurate estimate of the mean score of pre-clinical faculty members, this group should be included.

In the case of the University of Saskatchewan, a slightly different method is used in calculating measures of both the independent and dependent variables. At the time at which the survey was conducted, there were only three years to students at the University of Saskatchewan all of which were in the pre-clinical stage of training. (It was the intention at the University of Saskatchewan to have a five year program for training dental students with the first two to two and one half years being pre-clinical and the remainder clinical. However, because the school had just been established, the clinic had not been completed at the time of the study). As a result it was decided to utilize the first to third year difference between students scores as a measure of changes in their professional orientations. Thus at the University of Saskatchewan we consider only the pre-clinical period with no measure for the clinical period. This results in nine cases for pre-clinical changes and eight for clinical changes.

The method used to operationalize each of the independent variables is as follows: (1) Students perception of faculty support -- as in the case of the overall measure of students perception of faculty support, the percentage of students falling within the lowest quartile of the supportiveness scale (i.e. the proportion

who view faculty as non-supportive) is used. In this case, however, the scores of first and second year students are used in the calculation of students perception of faculty supportiveness in the pre-clinical years and those of third and fourth year students for the calculation of their perceptions of faculty supportiveness in the clinical years. (Except of course, in the case of the University of Saskatchewan where the scores of students in all three years are used to measure pre-clinical perception of faculty supportiveness) (2) Faculty consensus -- the standard deviation of weighted faculty scores for both clinical and non-clinical faculty (as was discussed above) is calculated and used as a measure of consensus. (3) Size -- the actual size of the first and second-year class and the third and fourth year class are used to measure the pre-clinical and clinical size respectively. (The measures utilized for each of these are shown in Table 7.7).

The Findings

Analysis of the zero order relationship between each of the measures (as calculated in the pre-clinical and clinical years) and the dependent variable (See Figures 7.4, 7.5, and 7.6) indicates: (1) A strong relationship in the predicted direction between support and change, (2) a strong relationship again in the predicted direction between size and change, (3) a weak relationship, although in the expected direction, between change and consensus.

As in the case of the examination of changes in

Table 7.8

CLINICAL, NON-CLINICAL MEASURES OF SUPPORTIVENESS, CONSENSUS, AND SIZE

School	Supportiveness		Consensus		Size	
	Pre-clinical	Clinical	Pre-clinical	Clinical	Pre-clinical	Clinical
University of British Columbia	31	24	5.6	4.6	76	30
University of Alberta	14	37	4.7	3.6	96	98
University of Saskatchewan	3	*	9.5	*	31	*
University of Manitoba	27	42	7.0	6.4	61	52
University of Western Ontario	14	7	4.0	6.2	93	39
University of Toronto	16	23	4.0	4.3	240	240
McGill University	12	39	3.6	3.6	68	75
University of Montreal	36	45	6.9	5.6	169	143
Dalhousie University	9	25	4.3	5.4	52	44

221

Figure 7.4

RUN TO TRY TWO SCATTERGRAMS

FILE STUDENTS (C-EAT) DATE 4/03/04/74

SUMFILE WORK

SCATTERGRAM IN (10-0) C-74 INE

03/04/74

PAGE 2

(ACKUSS) SUPPUNT

Figure 7.5

4.21C RUN TO TRY THE SCATTERGRAM

FILE STUDENTS (CREATION DATE = 03/14/71)
SUBFILE NONCL CLIN
SCATTERGRAM OF (DO-H) CHANGE

03/04/74

PAGE 0

(ACROSS) CONSENSU

Figure 7.6

4.1.1 RUN TO TRY THE SCATTERGRAM

FILE STIMULUS (C-FAT10) DTP = 13/10/1961
SUSFILE MONICL CLC
SCATTERGRAM OF (UC-N) (7)3.12

03/00/74 PAGE 4

(ACROSS) SIZE

students' professional orientations from first to fourth year, the data pertaining to preclinical and clinical changes are subjected to more detailed analysis. Specifically, the three models specified above are employed to estimate both the independent and interaction effects of support, size and consensus.

In Model I analysis of the relationship between each of the independent variables and the dependent variables reveals a considerable improvement in both the magnitude of the Beta coefficients and the significance levels associated with them. The Beta values for both size and support indicate a strong relationship (in hypothesized direction) with the dependent variable. In the case of consensus we note some improvement in the strength of the relationship with change, the regression coefficient, however, is not statistically significant.

Analysis of the regression coefficients for Models II and III indicates that consideration of the interaction between support and both size and consensus offers no significant improvement in the predictive power of either model. Both size and consensus are better estimators of the dependent variable when considered independently than when jointly classified with support.

Before discussing the implication of these findings for the model developed in Chapter Three, it is necessary to consider the third component of that model, namely, the receptivity of students to influence.

In Chapter Three it was hypothesized that not only

TABLE 7.9

CHANGE IN PROFESSIONAL ORIENTATIONS:
FIRST TO SECOND AND SECOND TO FOURTH YEAR:

REGRESSION COEFFICIENTS AND OTHER STATISTICS

EXPLANATORY VARIABLES	MODEL I		MODEL II		MODEL III	
	b	beta	b	beta	b	beta
Constant	1.27		.868		.792	
Support	-.017 *(2.39)1	-.44 (-.51)2	-.015 *(2.00)	-.402 (-.52)	-.017 (.89)	-.461 (.52)
Size	-.003 *(3.00)	-.52 (-.56)	-.003 *(3.00)	-.467 (-.57)		
Consensus	-.059 (.40)	-.19 (-.03)			-.034 (.41)	-.108 (-.03)
Support x Size			.084 (.62)	.126 (.32)		
Support x Consensus					-.019 (.15)	-.081 (.04)
R ²	.53		.51		.28	
s.e.e.	.368		.376		.458	
n	17		17		17	

1. b/standard error * denotes .05 level of significance

2. Zero order r.

would the influence of the dental school on students vary depending on school factors such as support, size and consensus but that different types of students would display varying degrees of receptivity to the influence. Specifically it was hypothesized that students who had made their decision to enter dentistry at a relatively late date would be more receptive to influence than early deciders. In the context of our overall model of professional socialization this implies that we would expect the three 'school level' independent variables to be better predictors of the extent to which students change their orientation in the direction of faculty, in the case of late versus early deciders.

In order to test this, a regression model was specified for both early and late deciders. Early deciders were operationally defined as those who had definitely decided to enter dentistry before high school while late deciders were defined as those who had made their decisions after high school.

On the basis of the results of the 'refined' test of the three hypotheses related to school factors, discussed above, it was decided to examine the effect of the timing of career decisions using both preclinical and clinical measures of the variables. For the independent variables - support, size and consensus the same measures were used as in the 'refined' test. In the case of the dependent variable, measures were calculated for each school based on the first to second and the second to fourth year

differences for both early and late deciders. (Because of the very small number of cases at the University of Saskatchewan, it was excluded from this stage of the analysis). This method yielded four measures along the dependent variable for each school; (1) differences between first and second year for early deciders, (2) differences between first and second year for late deciders, (3) differences between second fourth year for early deciders, (4) differences between second and fourth year for late deciders.

These different scores were then signed (+) or (-) depending on the extent to which they represented a move toward or away from the mean score for preclinical or clinical faculty.

The results of regression analysis (Model I only) for both early and late deciders (Table 7.10) indicates no significant differences in the regression coefficients for either model. In both cases, the relative magnitude and direction of the Beta coefficients are similar to those observed without partitioning on the basis of the timing of career decisions, (although for both cases the regression coefficients are not statistically significant).

What differences are evident while not statistically significant suggest that early deciders, rather than late as was hypothesized, are more receptive to influence. However, it must be stressed that these differences could be due to normal measurement of sampling error.

TABLE 7.10

CHANGES IN PROFESSIONAL ORIENTATIONS FROM FIRST TO SECOND
AND SECOND TO FOURTH YEAR - PARTITIONED FOR
EARLY AND LATE DECIDERS (MODEL I)

EXPLANATORY VARIABLES	Nature of Sample					
	Early		Late		Pooled	
	b	beta	b	beta	b	beta
Constant	.680		.99		.846	
Support	-.025 (1.4)	-.40 (-.39)	-.015 (1.0)	-.27 (-.32)	-.021 (2.0)	-.34 (-.36)
Size	-.003 (1.5)	-.28 (-.32)	-.002 (1.0)	-.26 (-.27)	-.003 (3.0)	-.27 (-.30)
Consensus	.069 (.43)	.10 (.01)	-.059 (.37)	-.09 (-.15)	.005 (.07)	.008 (-.07)
R ²	.25		.17		.20	
s.e.e.	.774		.704		.692	
n	16	16	16		32	

Discussion

As is often the case in sociological research, we find that our results do not simply prove or disprove our ideas about the relationship between the various phenomenon. Rather, we find a curious mixture of hypotheses half supported, fully confirmed, and not verified at all. In the case of size, the evidence is rather substantial in support of its hypothesized relationship with students' adoption of faculty attitudes. For consensus and the timing of career decisions, the findings reveal little relationship with the dependent variable.

The most puzzling finding from the perspective of the model of professional socialization concerns students' perception of faculty support in its relationship to change in students' role orientations. In the conceptual model, it was postulated that a primary determinant of students' adoption of faculty attitudes was their perception of faculty as "supportive". Thus, it was expected that the greater the proportion of students who viewed faculty as supportive, the more likely they would be to change their professional orientations in the direction of faculty. The findings presented above, while indicating that perceptions of supportiveness play an important role in this process, do not confirm the hypothesis that such perceptions are a necessary condition in the adoption of faculty attitudes. In the original model it was specified that students would tend to adopt faculty attitudes only when they perceived faculty as supportive. The finding that in the case of

small schools, students would tend to adopt faculty attitudes regardless of how they perceive faculty necessitates a reconsideration and perhaps revision of the model. This matter will be considered in more detail in the next chapter.

The findings presented above indicate that the relationship of consensus to changes in students' attitudes is not as strong as was expected. While consensus does exert a moderately strong influence on changes in students' professional orientations, its relationship with the dependent variable is both less consistently strong and less statistically significant than is the case with either support or size. This would seem to indicate the differences among faculty members with respect to their professional orientations play little if any role in students' adoption of the attitudes of faculty.

Such a conclusion should, however, be made with care since this finding may be a function of the way in which consensus was measured. This is, while faculty may display on the basis of the standard deviation of their scores, either conflict or consensus, students may not necessarily perceive it as such. Thus, while members of faculty may appear on the basis of our indicator to be in considerable conflict, the existence of a core group within the faculty who hold a similar orientation may be perceived by students. Likewise where the staff of a given school display considerable consensus in terms of their professional orientations, differences between a number of 'key' faculty

members may make the level of consensus within the school seem much lower than our measure would indicate.

With respect to timing of career decisions, while no statistically significant differences emerged between early and late deciders, the differences in the Beta coefficients associated with both groups suggest that early rather than late deciders are more receptive to influence under the specified conditions. While the explanation for this finding is properly the subject of future research, it does indicate that greater commitment (a characteristic we have associated with early deciders) may act to facilitate rather than impede the acquisition of faculty orientations.

Perhaps, the most important feature of our analysis (at least from the perspective of future research) was the considerable improvement in the model which resulted from our analysis of preclinical and clinical changes. This procedure clarified considerably the nature of the relationship and is strongly advised for future research. One of the problems at looking simply at "net" school changes is that there often exist various subprocesses within an educational institution which indeed do influence students but in opposite directions. In such a case, the independent variables may be operating in a direction which is hypothesized but because of differences in the direction of changes their effects tend to cancel each other out.

In the chapter which follows we will consider the findings presented above both in the context of the general model of professional socialization which was developed in

Chapter Three and in relation to a number of the practical and theoretical concerns (outlined in Chapter One) which initiated this inquiry.

FOOTNOTES FOR CHAPTER SEVEN

¹For a discussion of these proceedings and their effect on dental education in both Canada and the United States see Homer (1947) and Hollingshead (1971).

²While some attempt is made to have students in the clinic begin with 'easier' procedures and move on to more difficult tasks, this principle is often difficult to implement since most patients confront the student with a variety of problems - many of which require immediate attention.

³This dilemma is similar to dilemmas found in other educational settings; see for example Boyle (1967).

⁴In this way students, like subordinates in other organizations may sabotage the goals of their superiors. See Brent's (1957) treatment of "bureaucratic sabotage" and Gouldner's (1947) discussion of this phenomenon.

CHAPTER EIGHT

SUMMARY AND CONCLUSIONS

This thesis has examined the role of the dental school in bringing about changes in the professional orientations of dental recruits. Specifically, a model which specified a number of factors related to students adoption of faculty professional role orientations was developed and tested using data gathered from a national study of dental students and faculty members in Canada. In this model, students adoption of faculty orientation was used as a function of the degree to which they perceived faculty as "supportive", the size of the student body, their consensus among faculty in terms of their professional orientations, and the age at which students decided to enter dentistry. In this chapter, we briefly summarize the major findings of this study and examine them with reference to a number of concerns which initiated this inquiry.

In the results presented in this study we have indicated the types of individuals who are admitted into the Canadian dental schools, what professional orientations different types of recruits to this professional had when they entered the dental school and what factors within the school play a role in changing these orientations. For example, in Chapter Five, the background characteristics and career choice strategies of Canadian dental students were discussed. The findings reported in that chapter revealed little change in the pattern of recruitment into dentistry in Canada from 1967-1970, although some differences were evident when these students were compared with dental students registered in 1963. While there has been little

change in the pattern of recruitment across Canada, analysis of between cohort differences for each of the schools revealed some variation in recruitment within the schools.

The existence of such differences raised a question as to whether different types of students displayed variation in the professional orientations they bring with them into the dental school. In Chapter Six, analysis of the relationship between the background characteristics and career choice strategies and the professional orientations of first year dental students showed that for only two characteristics -- province of origin and mother tongue -- was there a relatively high degree of association. Subsequent analysis of both of these characteristics indicated the relationship between region and professional orientations disappeared when mother tongue was controlled for.

Following the discussion of recruitment in Chapters Five and Six, we proceeded in Chapter Seven to consider the central problem of this thesis -- understanding the effect of the dental school in the development and change of students' professional role orientations. We began this discussion of the dental school with a brief overview of the process of dental education in Canada and an analysis of the structure of the dental school. In that discussion, it became clear that a salient point of structural differentiation within the dental school was the distinction between clinical and pre-clinical stages of the recruits'

training. It was indicated that the difference between the stages was not simply one of curriculum but one which involves different types of social relationships, variations in styles of supervision, and differentiation in terms of faculty roles.

Because of the obvious importance of distinguishing between the two stages of training (pre-clinical and clinical years) it was decided to use a two-step approach in testing hypotheses concerning the role of the dental school and the socialization of the dental recruit. The first step consisted of an examination of changes in students' role orientations from first to fourth year, using measures for the independent variables calculated on a school wide basis. The second step involved the examination of changes in both the pre-clinical and clinical years using measures appropriate to both.

This procedure was used to test four hypotheses concerning students' adoption of faculty attitudes: (1) the influence of faculty on students' professional role orientations varies inversely with the extent to which the perceived faculty is not supportive. (2) The influence of faculty on students' professional role orientations varies inversely with the size of the student body, (3) the influence of faculty on students' professional role orientations varies directly with consensus among faculty in terms of their role orientations, (4) the influence of faculty on students' professional role orientations varies directly with the time at which they decided to enter

dentistry.

In order to test these hypotheses, three regression models were specified, the first of which identified the net effects of each of the school level independent variables while the later two were employed to examine interaction effects of these variables. These models were tested in both steps of the procedure outlined above.

Results of the first step confirmed both substantively and statistically, the hypothesis concerning the role of size in students' adoption of faculty attitudes. The relationship between students' perception of faculty supportiveness and the dependent variable, while in the hypothesized direction, indicated that this factor played less of a role than had been expected. For consensus, no significant relationship with the dependent variable is evident. In addition, analysis of the interaction between both size and consensus and students' perception of faculty supportiveness failed to produce any substantial improvement in the overall model.

In the second stage of the analysis, the hypotheses were tested using measures appropriate to the pre-clinical and clinical stages of the dental training. Use of this procedure resulted in a model (Model I) which accounted for almost twice the variation in the dependent variable compared with the step used in stage one ($R^2 = .53$ compared with $.32$). Not only was the importance of size confirmed ($Beta = -.55$) but, in addition, perceptions of faculty supportiveness which had previously been virtually unrelated

to students' adoption of faculty attitudes, emerged with a strong relationship in the expected direction (Beta = $-.44$). The regression coefficient associated with consensus while in the expected direction was not statistically significant and accounted for only 4% of the dependents in the dependent variable. As in the first step of the analysis, no interaction effects were evident.

The final stage of this analysis consisted of an examination of the effect of size, perceptions of faculty supportiveness, and consensus with students' partitioned into those who had made early and those who had made late career decisions. While no statistically significant differences were evident between these groups, the data indicated that early deciders, rather than those who choose dentistry at a late date, were more receptive to influence under the specified conditions.

Conclusions should be drawn with care from the findings summarized above, since the use of cross-sectional survey data (gathered prior to the specification of the hypotheses tested in this thesis) created a number of design and measurement problems some of which have only been partially overcome. The design problems which must be considered in drawing conclusions from the results concern (1) variations in sample sizes for both students and faculty and (2) the use of cross-sectional data in estimating changes in students' role orientations. The first problem was partially circumvented in the case of faculty by adjusting

the scores of various subpopulations in the schools on the basis of sample-population ratios. This method was not employed for students since the size of the sample exceeded 70% in all of the schools, thus, providing a reliable estimate of population parameters.

The second design problem -- that of using cross-sectional data and the estimation of changes in students' orientations -- was more formidable. The research literature on education is replete with warnings of the many logical and methodological errors involved in the use of this method (Astin, 1972; Feldman and Newcombe, 1972). While we have attempted to specify the more important of these and examine our data with specific reference to them (Chapters Five and Six; Chapter Seven, pp. 163-65), we still cannot be entirely certain that differences between the cohorts are not a function of differences at entry.

In addition to these design problems, it was also necessary to take into account the number of measurement problems. Indeed, a measurement of all the variables with the exception of size presented certain difficulties. While the measurement of our dependent variable involved a design problem -- outlined above, the translation of estimates of change so that they reflected moves toward or away from faculty, presented us with a number of difficulties (one of the more important of which concerned exactly what constitutes a movement away from or toward faculty). In addition, measurement of students' perceptions of faculty supportiveness, consensus among faculty, and the timing of

Career decisions, each posed its own special problem. For the first of these only a limited number of items reflecting this factor were specified in the original survey and as a result the Likert scale which was developed contains fewer items than it should have. For the second, problems inherent in estimating dispersion based on "weighted" data resulted in slightly biased indicators for schools with low sample responses. A slight bias is also evident in the case of the third variable, the timing of a student's career decision, because of the retrospective nature of the item used to measure this variable.

Given these limitations, it is necessary to maintain a degree of caution in drawing conclusions from our findings. Thus, our results must be considered as suggestive rather than confirmative. In this sense, they should not be seen as offering solutions to problems isolated by past research, but rather as indicative of some potentially fruitful lines of inquiry for future research.

With these limitations in mind, we will briefly assess our findings with reference to three related concerns which initiated this analysis of dental education in Canada. They are (1) the development of a model of professional socialization, (2) the problem of the mechanisms by which the activities of the professions and the needs of society become congruent, (3) the role of dental education in facilitating the transition to more productive forms of dental practice.

(1) The Model of Professional Socialization

In drawing conclusions from the results of our analysis as they apply to the model of professional socialization, it is necessary to consider two questions; first, "to what extent does the evidence support the model developed in Chapter Three?" and second, "what revisions in this model are suggested which could be useful to future research?"

While the first question was partially answered in the discussion of our findings in Chapter 7, a more general assessment of the concept of "Janus faced" nature of the professional students role is in order. Do students' conceptions of themselves as junior colleagues rather than subordinates play a role in their adoption of faculty attitudes? While our findings support this proposition in the case of large schools, students in small schools appear to adopt faculty attitudes regardless of which variant of the students' role they identify with. While a complete elaboration of the mechanism of attitude change and social influence in a large compared to small schools, is a subject of future research, one possible explanation of this finding might be suggested.

This explanation centers around the nature of interaction in small compared to large schools. Students in a small school may be under greater pressure to have increased contact with their teachers regardless of their feelings about faculty. As a result, such contact may lead to the adoption of staff role orientations. The existence of such pressures in a small school is evidenced by Parker

and Grupp, who note that the amount of performance necessary to insure the survival of an organization is disproportionately greater for small schools, than large schools. As a result, they find that the intensity of interaction in the smaller school is greater, regardless of other conditions. In this sense the adoption of faculty attitudes by students in small schools may reflect the greater amount of interaction between students and faculty.

From the perspective of future research on professional socialization, the finding that both supportiveness and size exert independent influence on students' adoption of faculty attitudes, suggests the need to consider two types of mechanisms which influence the development of students' professional orientations. The first of these mechanisms, on which we place considerable stress in this thesis, concerns the perception by students of their relationship to the professional school. The second mechanism is related to the structure of the dental school and the pressure exerted on students' attitudes and orientations. While these factors are obviously related in some way, the finding that both can exert considerable independent influence indicates the need for future research to stress each factor. Regarding the structure of the school, greater emphasis should be placed on both student and faculty differentiation. For example, while we have assumed in this study that each cohort of students represents a cohesive unit, greater attention should be paid by future research to differences within cohorts, especially in large schools. Likewise, in the case

of faculty, it is important (as evident by our findings on the differences between clinical and pre-clinical faculty) to examine structurally based differences - paying special attention in this case to the relative power of various subgroups within the faculty.

Thus, while the findings presented in Chapter Seven support, in part, the model which was developed earlier in this thesis, they also suggested an expanded model which places weight both on students' perceptions of the school and on pressure exerted on students by the school.

(2) The Mechanisms By Which The Interests Of The Professions Recon

Consistent With The Needs Of Society.

As part of the rationale for undertaking this study we indicated that the professional school may play an important role in mediating between the professions and society. As was indicated in Chapter One, controversy exists on the extent to which the professional school actually carries out this function. According to one view the professional school, through the process of recruitment and socialization, both inculcates a collectivity and service orientation in its recruits and, through the enlightened attitudes of its faculty, functions to keep the values of the profession consistent with the needs of society.

The first of these functions (related to what we termed the problem of control at the level of the individual practitioner) is addressed only indirectly by our results.

While a collectivity and service orientation was not directly measured in this thesis, at least three components of our measure of professional orientations (social responsibility, community orientation, and intellectual orientation) were related to these two dimensions. The fact that students do not appear, on the basis of our cross-sectional data, to undergo any substantial change in their professional orientations, casts further doubt on this hypothesized function of the professional school (in this sense our findings are consistent with those of other researchers, Lortie (1968) and Hefrich and Quarantelli (1974) who suggest that students undergo little attitude changes as they pass through the professional school).

The second function of the professional school (related to the problem of social control at the level of professional collectivity) was examined more directly in the study. On the basis of the evidence, it appears variations among the faculty in terms of their professional orientations and that the process by which these are transmitted to successive generations of professional recruits is more complex than the structural functional model indicates.

Our findings indicate that the variation in the professional orientations displayed by faculty are not randomly distributed through the dental school, but instead highly correlated with an individual's relationship to the structure of the professional school. We find, for instance, that faculty members in the pre-clinical years

compared with those in the clinical years, generally display a more modern professional orientation.

From the perspective of future research, the existence of such differences suggests that the "Janus faced" nature of the professional students' role may in fact be a function of the "two sided nature" of the professional school itself. In particular, the role of professional school caught at one and the same time between the interests of the profession, the university, and society, might be a potentially fruitful line of future inquiry. For example, the need to teach both "theory" and "practice" result in a "Janus faced" professional school drawing theoreticians and scientists from the university at large and practitioners from the profession. In another sense, this two sided nature of the professional students' role reflects a number of dilemmas faced by professional schools and professional educators. One of these dilemmas mentioned earlier in this paper, concerns the conflicting requirements of effective education and professional responsibility to patients. Other dilemmas which might be addressed by future research, concern the conflicting requirement, on technical and scientific "training" on the one hand and moral or ideological learning on the other. In this regard, future research should attempt to examine in more detail, the nature of faculty differentiation as it is related both to the structure of the professional school and the global context within which professional training is embedded.

The second assumption of the functionalist model --

that the enlightened orientations of faculty are transmitted to successful generations of recruits -- is only partially supported by the data. Thus, while under certain conditions (of which size and support appear to be major components) faculty do appear to influence the orientations of recruits, the fact that different types of faculty come into contact with students at different stages of the students' training appear to cancel out the effect. This suggests the need for a revision of the functionalist model which would view the professional school not as the center of enlightenment within the professions (a role which some segments of the professional school may indeed play) but as an arena in which the interests of the professions and society frequently conflict.

(3) Role Of Dental Education In Facilitating A Transition To More

Productive Forms Of Dental Practice

In this thesis, we have attempted for the most part to cast our findings in a general perspective, viewing them in terms of a general model of professional socialization, and discussing them with reference to a number of general issues of theory of the professions. At this stage, however, it is useful to briefly consider the implications of our findings for social policy as it is related to dental education, in particular and to the structure of the dental profession in general. Specifically our findings have implications for three areas of concern related to dental education and

dental care delivery. They are: recruitment, changes in dental students' orientations while at dental school, and the staffing of dental colleges.

(1) Recruitment

In recent years, a good deal of attention has been focused both by dental educators and the profession at large at the question of recruitment into dentistry and what types of students will make the "best" dentists. For many of the participants in this debate, the "best" consists of one who does not necessarily have extraordinary operative skills, but rather who possesses a particular attitude, moral commitment, or altruism. This concern has led many dental educators in the search for the right recruit.

The findings presented in this thesis indicates that such a search may prove extremely difficult. Our measure of the relationship between the traditional-modern orientation variable and a relatively wide range of background characteristics and career choice strategies of dental students, fails, with the exception of language, to reveal any systematic differences. While this does not imply the changes in the selection for future will not bring about such differences, it does at least indicate that finding the "right" recruit may not be easy. While changes in the selection pattern of the dental schools may produce a different type of recruit, it seems on the basis of our findings that the attention of dental educators might better be focused on the process of training and socialization

within the dental school than on those who enter it.

(2) Changes In Students' Professional Orientations

While At Dental School

Perhaps our most important finding from the perspective of social policy as it is related to dental education concerns the apparent shifts between the pre-clinical and clinical years in the professional orientations of dental students. This finding suggests that piecemeal efforts at revising the dental school curriculum in terms of either content or staff may lead to little change in the type of students who graduate from the professional school.

Future research should attempt to investigate more systematically, using longitudinal designs, the nature of these changes. In this regard, special emphasis should be placed not only on changes which occur within the dental school but also the impact on the practice characteristic of dental students after they graduate.

(3) The Staffing Of The Dental School

The considerations discussed above coupled with our findings of the professional orientations of various types of faculty members have potentially major significance in terms of future staff policies of the dental schools in Canada. The commitment of clinical staff to the current structure of dental care delivery (as evidenced by their more traditional professional orientations) and their impact, under certain conditions on the professional orientations of dental students suggests that if changes are

to occur in the type of student who graduates from dental school, considerable attention must be given to the staffing of clinical departments in the future.

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APPENDIX ASTUDENT QUESTIONNAIRE

THE ASSOCIATION OF CANADIAN FACULTIES OF DENTISTRY
SURVEY OF DENTAL EDUCATION IN CANADA

YOUR NAME IS NEEDED TO CHECK THE COMPLETED QUESTIONNAIRES AGAINST CLASS LISTS AND TO CO-ORDINATE DIFFERENT QUESTIONNAIRES. ALL INDIVIDUAL REPLIES WILL BE HELD IN THE STRICTEST CONFIDENCE. NO QUESTIONNAIRES OR INDIVIDUAL REPLIES WILL EVER BE SEEN BY THE STAFF OF YOUR SCHOOL OR ANYBODY ELSE EXCEPT THE RESEARCH SOCIOLOGISTS ON THIS PROJECT.

NAME: _____

UNIVERSITY: _____

YEAR IN DENTISTRY (I, II, III, IV): _____

_____ CHECK HERE IF YOU WOULD LIKE A REPORT OF THE RESULTS OF THIS SURVEY

THANK YOU FOR YOUR CO-OPERATION

THE ASSOCIATION OF CANADIAN FACULTIES OF DENTISTRY

SURVEY OF CANADIAN DENTAL EDUCATION

This is not a test but an inventory of different opinions. There are no right or wrong answers (except, of course, questions such as those on age, sex, class, etc.). PLEASE ANSWER ALL QUESTIONS FULLY AND FRANKLY.

Work at a fairly high speed. Do not worry over individual items. It is your first impression, the immediate "feeling" about the items that we want. On the other hand, please do not be careless, because we want your true impressions.

If you have any difficulty in answering a question, please answer it as well as you can anyway. We want your best estimate, your best guess. Even if it seems to you that some of the questions are unusual or repetitious, please answer them anyway.

Pay no attention to the numbers and blank spaces down the right hand margin of the page. They are for coding purposes.

1. What year are you in?

First _____ Second _____ Third _____ Fourth _____

A9 _____

2. What is your marital status?

A10 _____

_____ Married with children
 _____ Married with no children
 _____ Single, engaged
 _____ Single, 'going steady'
 _____ Single, unattached
 _____ Other: _____

3. Sex: Male _____ Female _____

A11 _____

4. Your birthplace: Indicate Canadian province or foreign country.

A12 _____

A13 _____

5. Your mother tongue:

A14 _____

English _____ French _____ Other (Specify) _____

6. What is your father's ethnic background (e.g. English, Polish, Jewish, etc.)? A15 _____

7. In what size community did you live during most of your high school years? A16 _____

_____ Under 1,000
 _____ 1,000 - 4,999
 _____ 5,000 - 9,999
 _____ 10,000 - 29,000
 _____ 30,000 - 99,000
 _____ 100,000 or over

If in Canada, give name of community and province:

Province _____ Town or City _____

A17 _____

A18 _____

A19 _____

8. What is your parents' education?

FATHER:

MOTHER:

A20 _____

A21 _____

_____ No formal education
 _____ Elementary, partial
 _____ Elementary, complete
 _____ High School, partial
 _____ High School, complete
 _____ University, partial
 _____ University, degree

8. (continued)

If either parent has a professional occupational standing, please specify:
(Examples include nurse, accountant, lawyer, social worker, etc..)

Father: _____ Mother: _____

What was your father's or guardian's main occupation when you were in high school? (If father or guardian was deceased, please indicate his occupation when living.)

A22 _____
A23 _____
A24 _____
A25 _____
A26 _____
A27 _____

Please indicate if your father or guardian was self-employed or worked for others:

Self-employed _____ Worked for salary or wages _____

A28 _____
A29 _____
A30 _____

A31 _____

9. Before entering dental school, what university training had you received?

- _____ Mostly basic science courses
_____ Many basic science courses, and a few arts courses
_____ Some basic science courses and some arts courses
_____ Mostly arts courses and a few basic science courses
_____ Mostly arts courses

A32 _____

10. What was your overall (cumulative) grade average in your pre-dental courses? If your university did not use letter grades, convert to what seems appropriate:

- _____ A+
_____ A-
_____ B+
_____ B
_____ B-
_____ C+
_____ C
_____ C-

A33 _____

11. In your pre-dental university classes, when there was discussion, were you usually:

- _____ Pretty quiet
_____ Inclined to speak up only occasionally
_____ An active participant fairly often
_____ An extremely active participant

A34 _____

12. At what stage in your education did you first think about becoming a dentist, and at what stage did you definitely decide?

FIRST THOUGHT OF
BECOMING A DENTIST

DEFINITELY
DECIDED

_____	Before high school	_____
_____	During first two years of high school	_____
_____	During last year of high school	_____
_____	Between high school and university	_____
_____	During first year of university	_____
_____	During second year of university	_____
_____	During last year of university	_____
_____	After basic degree	_____
_____	Other: _____	_____

A35

A36

13. Did you apply for admission to more than one school?

A37

_____ Yes _____ No

14. If you were not going to be a dentist, what would your second choice of an occupation be? (Check only one)

_____	College or university teaching. What field? _____
_____	Scientific research. What field? _____
_____	Elementary or high school teaching
_____	Pharmacy
_____	Medicine or surgery
_____	Engineering
_____	Law
_____	Architecture
_____	Business or commerce. Field: _____
_____	Other: _____

A38

A39

15. To what extent do you feel it would be possible at this stage of your life and education to shift from dentistry and turn to a career in some other field?

_____	It would be virtually impossible. Why? _____
_____	While not impossible, it would be extremely difficult. Why? _____
_____	It would be difficult to shift, but it definitely could be done.
_____	It would be relatively easy.

A40

A41

16. The following are a number of aspects that you may have considered in making your decision to enter dentistry. Please rate the importance of each aspect on the scale provided, according to the degree that it influenced you. Circle one number only.

A. I wanted to work with my hands.

Very Important

Not At All Important

1 2 3 4 5

A42 _____

B. It is challenging and interesting work.

Very Important

Not At All Important

1 2 3 4 5

A43 _____

C. It satisfies a desire to work for and with people.

Very Important

Not At All Important

1 2 3 4 5

A44 _____

D. I had the necessary qualifications to enter.

Very Important

Not At All Important

1 2 3 4 5

A45 _____

E. The profession provides monetary advantages and a secure future.

Very Important

Not At All Important

1 2 3 4 5

A46 _____

F. The field is not overcrowded.

Very Important

Not At All Important

1 2 3 4 5

A47 _____

G. It satisfies a desire to be my own boss.

Very Important

Not At All Important

1 2 3 4 5

A48 _____

H. I feel it is necessary for me to be a 'professional'.

Very Important

Not At All Important

1 2 3 4 5

A49 _____

I. It suited my personality.

Very Important

Not At All Important

1 2 3 4 5

A50

J. The qualifications were not as rigorous as for some other fields.

Very Important

Not At All Important

1 2 3 4 5

A51

K. It pleased my parents and/or wife/husband.

Very Important

Not At All Important

1 2 3 4 5

A52

L. It fulfills several important requirements: interesting, essential work, and provides a particular life-style.

Very Important

Not At All Important

1 2 3 4 5

A53

M. I feel I owe "something" to mankind.

Very Important

Not At All Important

1 2 3 4 5

A54

17. Which three of the factors considered in the proceeding question are the most important to your personal satisfaction with your career? Which three factors do you think are most important to your classmates?

Yourself

Classmates

Most Important

Second Most Important

Third Most Important

A55

A56

A57

A58

A59

A60

18. For each of the following careers, check the most important factor that would lead you to choose that career.

	<u>Income</u>	<u>Independence</u>	<u>Security</u>	<u>Prestige</u>	<u>Responsibility</u>	
Dentistry						A61
Medicine						A62
Law						A63
Business						A64
Engineering						A65
Architecture						A66

19. For each pair, check the one quality that you feel to be the more important of the two in choosing your own career:

☐ Income	vs.	Responsibility	☐
☐ Independence	vs.	Responsibility	☐
☐ Prestige	vs.	Responsibility	☐
☐ Security	vs.	Responsibility	☐
☐ Income	vs.	Security	☐
☐ Independence	vs.	Security	☐
☐ Prestige	vs.	Security	☐
☐ Income	vs.	Prestige	☐
☐ Independence	vs.	Prestige	☐
☐ Income	vs.	Independence	☐

A67 _____
 A68 _____
 A69 _____
 A70 _____
 A71 _____
 A72 _____
 A73 _____
 A74 _____
 A75 _____
 A76 _____

20. Consider two professions of equal prestige and interest to you: Profession A offers only salaried positions in large private or public organizations. In Profession B, one's living is made from fees-for-services rendered directly to clients. Which of the two professions would you choose to follow (A or B) and why? (Write on the back of this page if necessary)

A77 _____
 A78 _____

Suppose further that Profession A (salaried profession) was dentistry and Profession B (fee-for-service) was a comparable profession. Which would you choose and why.

A79 _____
 A80 _____

21. When you decided to apply to a dental school, how familiar were you with the day-to-day working of a dental office?

☐ Very familiar
☐ Moderately familiar
☒ Slightly familiar
☐ Not at all familiar

B10

22. When you decided to become a dentist, to what extent were you aware of the following aspects of dentistry?

	<u>Very Aware</u>	<u>Moderately Aware</u>	<u>Only Slightly Aware</u>	<u>Not At All Aware</u>	
Oral diagnostic aspect of dentistry	_____	_____	_____	_____	B11 _____
Group practice	_____	_____	_____	_____	B12 _____
Fluoridation	_____	_____	_____	_____	B13 _____
Dentists in Public Health	_____	_____	_____	_____	B14 _____
Continuing education of dentists after graduation....	_____	_____	_____	_____	B15 _____
Dentists in research	_____	_____	_____	_____	B16 _____
Chairside assistants	_____	_____	_____	_____	B17 _____
Dentists in teaching	_____	_____	_____	_____	B18 _____
Dental hygienists	_____	_____	_____	_____	B19 _____
Dental specialists	_____	_____	_____	_____	B20 _____
Dental auxiliaries	_____	_____	_____	_____	B21 _____
Pre-payment schemes for dental services	_____	_____	_____	_____	B22 _____
Denturists	_____	_____	_____	_____	B23 _____

23. What is your own personal opinion of the general standing of dentistry compared to other occupations?

How about your family, what is their opinion?

What do most of your friends think about the general standing of dentistry compared to other occupations?

	<u>Excellent Standing</u>	<u>Good Standing</u>	<u>Slightly More Than Average Standing</u>	<u>Below Average Standing</u>	
Your own opinion	_____	_____	_____	_____	B24 _____
Your family's opinion	_____	_____	_____	_____	B25 _____
Your friends' opinion	_____	_____	_____	_____	B26 _____

4

OF/DE

4

Now we would like to ask you some questions about the type of school environment here.

1. Generally speaking, would you say that your non-clinical courses are:

- ☐ Very useful in terms of the type of practice you intend to enter
☐ Moderately useful in terms of the type of practice you intend to enter
☐ Slightly useful in terms of the type of practice you intend to enter
☐ Not useful at all in terms of the type of practice you intend to enter

B27

2. In general, about how much time do you spend with your schoolmates in each of the following situations?

	<u>Practically</u> <u>None</u>	<u>A Little</u> <u>Bit</u>	<u>A Fair</u> <u>Amount</u>	<u>Quite</u> <u>A Lot</u>	
Informal discussion groups in connection with your courses.....	☐	☐	☐	☐	B28
Bull sessions about life in general.....	☐	☐	☐	☐	B29
Discussions about the dental profession in general.....	☐	☐	☐	☐	B30
Participating in leisure time activities together.....	☐	☐	☐	☐	B31

3. Would you say most of your friends are:

- ☐ Other dental students or practicing dentists
☐ Outside of the dental profession
☐ About evenly divided between the two

B32

4. When you have a question about dentistry or dentists, with whom are you most likely to consult?

- ☐ Other students
☐ Members of faculty
☐ Outside dentists
☐ Other, Specify: _____

B33

5. How important have your friends in dentistry been to you in learning about dentists and dentistry?

- ☐ Not at all important
☐ Slightly important
☐ Moderately important
☐ Very important

B34

6. What is your realistic appraisal of how well you are doing in your classes as compared to other members of your class?

- ☐ In the top quarter of the class.
☐ Above average, but not in the top quarter.
☐ About average.
☐ Below average, but not in the bottom quarter.
☐ In the bottom quarter of the class.

B35

7. The reason(s) that dentists teach in university dental schools is because:
(Check as many as you think are appropriate)

- ☐ They have excellent academic qualifications.
☐ Of the additional money they can make.
☐ Of the prestige in teaching in a dental school.
☐ They aren't capable enough dentist to maintain a private practice.
☐ They have a genuine interest in teaching.
☐ They haven't the right personality to keep patients in private practice.
☐ It is physically easier for dentists in ill health.
☐ They want to keep abreast of advances in the field of dentistry.
☐ It is physically easier than private practice.
☐ It provides a break in the routine of practice.
☐ Young dentists find it convenient to teach while they are in the process of building a practice.
☐ They are interested in doing research.
☐ Other (Specify): _____

B36

B37

B38

B39

B40

B41

B42

B43

B44

B45

B46

B47

B48

8. Using the scale provided, please indicate to what extent you think it is important that your instructors in dental school should or should not do the following things: (Please circle only one number)

- Lecture more or less directly from the text of the course.... Should 1 2 3 4 5 Should Not
 Give detailed guidance on what students should emphasize in studying..... Should 1 2 3 4 5 Should Not
 Maintain strict control over classroom procedures and discussions..... Should 1 2 3 4 5 Should Not
 Grade on performance rather than on effort..... Should 1 2 3 4 5 Should Not
 Make an effort to become personally acquainted insofar as that is possible with students in their courses..... Should 1 2 3 4 5 Should Not
 Discuss in detail in the classroom their own research..... Should 1 2 3 4 5 Should Not

B49

B50

B51

B52

B53

B54

B55

9. Now please tell us:

To whom would your class present an issue which it wanted to bring to the attention of the faculty?

B56 _____
B57 _____

Which faculty member has had the greatest positive influence on your views regarding dentistry?

B58 _____
B59 _____

Which faculty member has had the greatest negative influence on your views regarding dentistry?

B60 _____
B61 _____

In your opinion, who is the best teacher in the clinic?

B62 _____

In your opinion, which faculty member is the most popular among the students?

B63 _____

To whom (if anyone) among the faculty have you talked most about your future?

B64 _____

To which faculty member (if any) have you taken an important problem?

B65 _____

In your opinion, who is the best dentist in the faculty, and why?

B66 _____

B67 _____

B68 _____

B69 _____

B70 _____

B71 _____

B72 _____

B73 _____

10. To what extent do you think the instructors you have in courses here have the following characteristics?

	<u>Practically All of Them</u>	<u>A Majority Of Them</u>	<u>A Minority Of Them</u>	<u>Practically None of Them</u>	
greater interest in research than in teaching.....	_____	_____	_____	_____	C10 _____
An ability to communicate and give clear explanations.....	_____	_____	_____	_____	C11 _____
Treating dental students more as 'young dentists' than as students.....	_____	_____	_____	_____	C12 _____
Exhibition of high competence and knowledge in course subject matter.....	_____	_____	_____	_____	C13 _____
Skill in relating course subject matter to specific dental problems and work.....	_____	_____	_____	_____	C14 _____
A sympathetic attitude toward student problems with course material.....	_____	_____	_____	_____	C15 _____
Show a willingness to discuss the personal problems of students with them in out-of-class meetings.	_____	_____	_____	_____	C16 _____

11. We are interested in knowing your preferences among the various clinical subject areas. Would you tell us:

A. In which three of the following subjects you have had (or think you will have) the most enjoyable clinical experiences.

B. Which three of these subjects do you think will be most important in your career?

Please write 1 in the space after the one which is most enjoyable or important.

2 in the space after the one which is next most enjoyable or important.

3 in the space after the one which is third most enjoyable or important.

	<u>Most Enjoyable</u>	<u>Most Important</u>		
Endodontics	_____	_____	C17	C18
Operative Dentistry	_____	_____	C19	C20
Oral Diagnosis	_____	_____	C21	C22
Public Health	_____	_____	C23	C24
Oral Pathology	_____	_____	C25	C26
Oral Surgery	_____	_____	C27	C28
Orthodontics	_____	_____	C29	C30
Pedodontics	_____	_____	C31	C32
Periodontics	_____	_____	C33	C34
Prosthodontics	_____	_____	C35	C36
Roentgenology	_____	_____	C37	C38
Other: (Specify) _____	_____	_____	C39	C40

12. Have you had any contact with patients in your school's clinic yet?

_____ Yes _____ No

C41

IF NO: How much have you thought about the patients you will be dealing with in the school clinic?

_____ Practically not at all

_____ Just a little

_____ A moderate amount

_____ A great deal

C42

13. Would you prefer a clinic patient whose dental problems were:

_____ Routine and easily diagnosed and treated

_____ Unusual and difficult to diagnose and treat

_____ It makes no difference

_____ Both, equally

C43

14. Would you prefer a clinic patient who: •

_____ Specifically asked you for detailed explanations of treatment.

_____ Did not ask, but seemed interested in the explanations you volunteer.

_____ Did not ask and specifically indicated he did not want any detailed explanations.

_____ It makes no difference.

C44

275 a

15. On the scale provided, please indicate the extent to which you regard clinic patients (or think you will) in the manner described. (Please circle only one number.)

My AttitudeNot My Attitude
At All

As dental problems to be solved.....	1	2	3	4	5	C45_____
As a means for meeting the requirements necessary to obtain a degree in dentistry....	1	2	3	4	5	C46_____
As opportunities to learn dental procedures.....	1	2	3	4	5	C47_____
As individual persons who need your help.....	1	2	3	4	5	C48_____

16. Do you think that dental students should have an opportunity to work with patients in the clinic starting in their first year?

_____ Yes
 _____ No
 _____ Undecided

C49_____

17. Have you had any experience yet working with a dental assistant in your school's clinic?

_____ Yes, a great deal. IF NO, PROCEED TO ITEM 21
 _____ Yes, some of the time.
 _____ Yes, only a little experience.
 _____ No.

C50_____

18. In learning how to use a dental assistant, how much help in the form of personal discussion and casual conversation did you receive from the following:

	<u>Great</u> <u>Help</u>	<u>Moderate</u> <u>Help</u>	<u>Slight</u> <u>Help</u>	<u>No</u> <u>Help</u>	
Clinic Instructors	_____	_____	_____	_____	C51_____
Dental Assistants	_____	_____	_____	_____	C52_____
Practicing Dentists	_____	_____	_____	_____	C53_____
Other Dental Students	_____	_____	_____	_____	C54_____
Dental Hygienists	_____	_____	_____	_____	C55_____

19. Each of the items listed below refers to an activity which is part of a dental procedure. We would like to know whether you or the assistant performed these tasks during the time she worked with you.

FOR EACH ACTIVITY, indicate who performed the activity by writing the appropriate number in the space provided, using the code below:

- 1 = Usually only myself
- 2 = More often myself than the assistant
- 3 = Usually either myself or the assistant
- 4 = More often the assistant than myself
- 5 = Usually only the assistant
- 6 = Never had an assistant while doing the procedure

Clipped sutures during surgery.	_____	C56 _____
Cemented facings and pontics.	_____	C57 _____
Prepared amalgam filling material.	_____	C58 _____
Placed matrix band in retainer.	_____	C59 _____
Retracted the cheek during surgery.	_____	C60 _____
Kept field clear during carving of restoration.	_____	C61 _____
Selected instruments for a given operation.	_____	C62 _____
Mixed cement for bases.	_____	C63 _____
Held impression tray in position after initial set.	_____	C64 _____
Placed amalgam in cavity.	_____	C65 _____
Kept field clear during placing of fillings.	_____	C66 _____
Blocked impression trays.	_____	C67 _____
Changed burs and stones for cavity preparations.	_____	C68 _____
Prepared initial impression materials for prosthetics.	_____	C69 _____
Kept field clear during cavity preparation.	_____	C70 _____

20. Generally speaking, would you say that your clinical instructors:

_____ Encourage the use of available assistants to the fullest extent.	
_____ Encourage the use of available assistants only for minor tasks.	
_____ Discourage the use of available assistants in many cases.	C71 _____
_____ Discourage the use of available assistants in all cases.	
_____ Don't discuss the matter at all.	

ALL STUDENTS ANSWER THESE QUESTIONS:

21. Do you think a dental student working in the dental clinic should:

Always Often Sometimes Seldom Never

Let patients know the full extent of their dental problems.....
 Admit to clinic instructors his uncertainty with respect to a diagnostic problem.....
 Advise patients on their personal non-dental problems.....
 Try out techniques not preferred by clinical instructors.....
 Attempt to discourage clinic patients with routine dental problems from returning for treatment by oneself....
 Question clinic instructors' judgements with respect to a clinic problem.....
 Check with other students in the clinic about the procedures to follow.....

C72 _____

C73 _____

C74 _____

C75 _____

C76 _____

C77 _____

C78 _____

22. How much importance do you think the clinic instructors attach to each of the following in judging the dental competence of students in the clinic?

Great Moderate Minor No
Importance Importance Importance Importance

Extensive knowledge of dental facts.....
 Ability to get along with other students.....
 Ability to follow instructions of the clinic faculty.....
 Ability to carry out research.....
 Ability to review professional literature.....
 Skill in diagnosis.....
 Keeping cubicle and work areas clean....
 Knowledge of different treatment procedures.....

D10 _____

D11 _____

D12 _____

D13 _____

D14 _____

D15 _____

D16 _____

D17 _____

22. (continued)

Great Moderate Minor No
Importance Importance Importance Importance

Skill in dealing
 with personal prob-
 lems of patients....

Outward appearance

and behavior of
 student giving im-
 pression that he is
 certain of what he is

doing, whatever his
 inward feeling.....

Ability to get along
 with instructors....

D18

D19

D20

23. While working in the school clinic, whose approval of your dental work gives you the greatest personal satisfaction? (If you are not yet in the clinic, whose approval do you think would give you the most personal satisfaction?) Rank in the following order:

1 = Most Satisfaction

2 = The Second Most Satisfaction

3 = The Third Most Satisfaction

_____ The dental assistant's approval of your work

_____ The patient's approval of your work

_____ The clinic instructor's approval of your work

_____ Fellow clinic students' approval of your work

_____ Dental hygienists' approval of your work

D21

D22

D23

D24

D25

24. How adequate is your training in the use of an assistant in each of the following areas? (If you have not yet worked with an assistant, estimate how adequate you think your training will be when you graduate.) Use the following code:

1 = No Training

2 = Barely Adequate

3 = Adequate

4 = Very Adequate

Tasks related to:

_____ Patient relations

_____ Office management

_____ Laboratory procedures

_____ Chairside assisting

_____ Radiography

_____ Housekeeping (clean up, sterilizing, maintenance, etc.)

D26

D27

D28

D29

D30

D31

25. To what extent have the faculty members discusses some of the following things with you, either in or out of class or the clinic?

Never Almost Every So Fairly Very
Never Often Frequently Frequently

Use of recall systems....	_____	_____	_____	_____	_____
Giving of prophylaxes....	_____	_____	_____	_____	_____
Teaching correct tooth- brushing.....	_____	_____	_____	_____	_____
Dietary control recom- mendations.....	_____	_____	_____	_____	_____
Filling primary teeth....	_____	_____	_____	_____	_____
Topical application of fluoride.....	_____	_____	_____	_____	_____
Where to set up a lucra- tive practice.....	_____	_____	_____	_____	_____
Concern with oral habits.	_____	_____	_____	_____	_____
Current issues in society.	_____	_____	_____	_____	_____
Biopsies of abnormally soft tissues.....	_____	_____	_____	_____	_____
Treatment of fractured incisors.....	_____	_____	_____	_____	_____
Being a salaried dentist.	_____	_____	_____	_____	_____
Concern about tone of gingival tissues.....	_____	_____	_____	_____	_____
How to handle patients who don't pay their bills.....	_____	_____	_____	_____	_____
Laboratory tests for determination of caries activity.....	_____	_____	_____	_____	_____
Promotion of water fluoridation.....	_____	_____	_____	_____	_____
Participation in or consultation with community health groups.	_____	_____	_____	_____	_____
Co-operation with dental health education programs.	_____	_____	_____	_____	_____
The responsibility of a profession in society....	_____	_____	_____	_____	_____

D32

D33

D34

D35

D36

D37

D38

D39

D40

D41

D42

D43

D44

D45

D46

D47

D48

D49

D50

26. Below is a line representing an arbitrary distance between a dental student and a dentist.

Dental Student 1 2 3 4 5 6 7 8 9 Dentist

Using one of the whole numbers on this line write in below:

- _____ Where would you place yourself at this time? D51 _____
- _____ Which point on the line is closest to where you think you will be one year from now? D52 _____
- _____ In general, where do you think you will be when you start to work in the clinic? (If you are already in the clinic, at what point were you when you began your clinic work?) D53 _____
- _____ Where do you think that the dental faculty now sees you? D54 _____
- _____ Where do you think that the faculty will expect you to be one year from now? D55 _____
- _____ Where do you think your parents see you now? D56 _____
- _____ (IF MARRIED) Where do you think your wife (or husband) sees you now? D57 _____
- _____ Where do you think that your non-dental school friends and acquaintances see you now? D58 _____
- _____ Where do you think patients in the dental school clinic see you now? (Or will see you when you begin your clinic work?) D59 _____
- _____ Where do you think that your classmates see you now? D60 _____
- _____ Where do you think that the advanced dental students see you now? D61 _____

27. From your experience so far in dental school, would you encourage a friend who was interested in dentistry to apply to your school?

_____ Yes. Why? _____

_____ No. Why? _____

_____ Undecided. Why? _____

D62 _____
D63 _____

28. As far as change and innovation in your dental school is concerned, would you say that: (Check One.)

_____ The students have a great deal of influence.

_____ The students have a moderate amount of influence.

_____ The students have slight influence.

_____ The students have no influence.

D64 _____

29. Do you think that students in professional schools, such as dentistry, should have more influence in such areas as curriculum changes, etc.?

Yes. Why? _____

D65

No. Why? _____

D66

Undecided. Why? _____

30. Dental schools often have informal and formal conduct rules. Do you think these rules should be more strictly enforced?

Yes. Why? _____

D67

No. Why? _____

D68

Undecided. Why? _____

31. Are there any rules that especially bother you? Which ones?

D69

D70

32. Have you had any contact yet with any of the dental trades regarding equipment and supplies for your future practice?

Yes. _____

No. _____

D71

33. If the answer is yes, which of the following things did the dental salesman (salesmen) discuss with you?

	Wasn't Mentioned	Mentioned Slightly	Mentioned Fairly Often	Mentioned Very Often	
The type of office that will attract the well-to- do client.....	_____	_____	_____	_____	D72
Different finance plans available.....	_____	_____	_____	_____	D73
The 'ideal' geographic loca- tion for a lucrative practice.	_____	_____	_____	_____	D74
The importance of hiring an assistant.....	_____	_____	_____	_____	D75
The possibilities and poten- tial of a group practice.....	_____	_____	_____	_____	D76
How to escape paying a lot of income tax.....	_____	_____	_____	_____	D77

The following are a series of choices people often make upon entering the career of their choice. Please rate yourself according to the degree to which one or the other alternatives was chosen in making your decision to enter dentistry. Please circle only one number per series.

Good Income

Solving Oral Health Problems

1 2 3 4 5 6 7 8 9 E10

Contributes to Health and Welfare

Independence Job Offers

1 2 3 4 5 6 7 8 9 E11

Being a Professional

Relieving Pain

1 2 3 4 5 6 7 8 9 E12

Application of Scientific Principles
To Dental Problems

Job Security

1 2 3 4 5 6 7 8 9 E13

High Standard of Living

Improvement of Patients'
Facial Appearance

1 2 3 4 5 6 7 8 9 E14

Prevention of Oral Disease

Respect of Public

1 2 3 4 5 6 7 8 9 E15

Freedom Job Offers
(e.g. Regulate Own Hours)

Interesting Technical Problems

1 2 3 4 5 6 7 8 9 E16

Opportunity to Help People

Long Length of Career Possible

1 2 3 4 5 6 7 8 9 E17

The Financial Problems

Unpleasant Oral Problems

1 2 3 4 5 6 7 8 9
E18 _____

Superior Working Conditions

Opportunity to Cure Sickness

1 2 3 4 5 6 7 8 9
E19 _____

E20 _____

Now we would like to ask you some questions about your future practice plans and attitudes toward different areas of dentistry.

1. To what extent have you thought about the following?

	<u>A Great Deal</u>	<u>A Fair Amount</u>	<u>Only A Little</u>	<u>Not At All</u>	
The type of practice you want to have.....	_____	_____	_____	_____	E21 _____
The branch of dentistry you want to enter.....	_____	_____	_____	_____	E22 _____
Office arrangements.....	_____	_____	_____	_____	E23 _____
Number and kind of auxiliary help you will need.....	_____	_____	_____	_____	E24 _____
Financial arrangements for establishing a practice.....	_____	_____	_____	_____	E25 _____
Location of your practice.....	_____	_____	_____	_____	E26 _____
Kinds of dental equipment you want to have.....	_____	_____	_____	_____	E27 _____
					E28 _____

2. Realistically speaking, how soon after you start practicing do you expect to have more than one chair?

_____ Never	
_____ Right from the start	
_____ During the first year	
_____ During the second year	E29 _____
_____ During the third year	
_____ After three or more years	

3. How much do you think you will be in debt at the time you graduate?

_____ No debt.	
_____ \$1,000 or less.	
_____ \$1,000 - \$3,000.	
_____ \$3,000 - \$7,000.	E30 _____
_____ \$7,000 - \$10,000.	
_____ \$10,000 - \$15,000.	
_____ \$15,000 or more.	

4. What kind of place do you expect to practice in?

- ☐ City of 1,000,000 or more
☐ Suburbs of city of 1,000,000 or more
☐ Suburbs of city of less than 1,000,000
☐ Town or city, population 250,000 to 999,999
☐ Town or city, population 50,000 to 99,999
☐ Town or city, population 50,000 to 249,999
☐ Town or city, population 2,500 to 49,999
☐ Rural (under 2,500 population) but not farm
☐ Rural, farm area

E31 _____

5. Are you expecting to practice in your own home town or city?

- ☐ Yes
☐ No

E32 _____

6. All other things being equal, which field of dentistry would you most like to enter?

- ☐ General dentistry
☐ Orthodontics
☐ Pedodontics
☐ Periodontics
☐ Prosthodontics
☐ Oral surgery
☐ Teaching dentistry
☐ Dental research
☐ Public health
☐ Other (Specify): _____

E33 _____

E34 _____

7. Which field of dentistry do you most realistically expect to enter?

- ☐ Same as that indicated above.
☐ Other (Specify): _____

E35 _____

8. What kind of dental career do you intend to pursue immediately after you graduate?

_____ Solo practice. If so, would you _____

E36 _____

_____ purchase an already existing practice?

E37 _____

_____ establish your own practice?

_____ Other (Specify): _____

_____ Association with another dentist. If so would you _____

E38 _____

_____ join someone already in practice

_____ enter a partnership on a percentage basis?

E39 _____

_____ join one or more of your fellow students?

_____ Association with government or industry. If so, what field?

E40 _____

_____ Armed forces?

_____ Other (Specify): _____

E41 _____

_____ Post-graduate or specialty training?

E42 _____

9. Please tell us in a few sentences what type(s) of dental career you ultimately hope to pursue.

E43 _____

E44 _____

10. When you get out in practice, whose opinion of your dental work do you think will be more important to you, your fellow dentists or your patients?

_____ My fellow students

_____ My patients

_____ Both, equally

E45 _____

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11. Below are some things that have been suggested as possible disadvantages or unfavorable aspects of being a dentist. Indicate the extent to which you agree that they are disadvantages:

	Strongly Agree	Moderately Agree	Slightly Agree	Not At All A Disadvantage Or Unfavorable	
The potential hazards to health involved.....	_____	_____	_____	_____	E46_____
The heavy cost of initial investment in setting up a practice.....	_____	_____	_____	_____	E47_____
The working alone without colleagues	_____	_____	_____	_____	E48_____
The lack of appreciation by patients of the non-mechanical skills of the dentist.....	_____	_____	_____	_____	E49_____
The working in a 'dirty part' of the body.....	_____	_____	_____	_____	E50_____
The physically demanding hard work involved in standing for a long time, etc.....	_____	_____	_____	_____	E51_____
The impossibility of attaining a tremendous income as in some other fields.....	_____	_____	_____	_____	E52_____
The absence of variety and the repetitious nature of the work of the general practitioner.....	_____	_____	_____	_____	E53_____
The necessity of working around blood.....	_____	_____	_____	_____	E54_____
The working with people rather than just physical objects...	_____	_____	_____	_____	E55_____
The having to inject needles into people.....	_____	_____	_____	_____	E56_____
The lack of opportunity to make a contribution to basic knowledge.....	_____	_____	_____	_____	E57_____
The fact that the total responsibility for the work done is solely that of the dentist himself.....	_____	_____	_____	_____	E58_____
The thinking of many people that the dentist is not much more than a mechanic.....	_____	_____	_____	_____	E59_____
					E60_____

12. Once you get out in practice, suppose you had full possibility of choosing, what kinds of patients would you generally prefer? (Check only one.)

☐ Predominantly working class people.
☐ Predominantly white collar people. E61 _____
☐ Predominantly high salaried and professional people.
☐ A combination of working and white collar people.
☐ A combination of white collar and high salaried and professional people.
☐ A combination of white collar, working, high salaried and professional people, i.e. all mentioned above.

13. In your opinion, how well does each of the following phrases describe in part how the majority of people view the dental profession?

<u>A Profession:</u>	<u>Excellent</u>	<u>Good</u>	<u>Fair</u>	<u>Poor</u>	
<u>Description</u>	<u>Description</u>	<u>Description</u>	<u>Description</u>	<u>Description</u>	
Providing a vital service for any community.....	_____	_____	_____	_____	E62 _____
Which is secure and lucrative.....	_____	_____	_____	_____	E63 _____
Which requires higher intelligence than most other professions.....	_____	_____	_____	_____	E64 _____
In which fees are disproportionately high for usual services given.....	_____	_____	_____	_____	E65 _____
Which is a specialty of medicine.....	_____	_____	_____	_____	E66 _____
Where obtaining of the services is in most instances a painful process.....	_____	_____	_____	_____	E67 _____
With high ethical standards.	_____	_____	_____	_____	E68 _____
In which the skills required are not too complex or difficult to learn.....	_____	_____	_____	_____	E69 _____
Having higher prestige than all other professions but medicine.....	_____	_____	_____	_____	E70 _____
Requiring considerably more difficult training than most other professions.....	_____	_____	_____	_____	E71 _____
					E72 _____

14. Now, how well do you personally think the same phrases describe the dental profession as you now see it.

<u>A Profession:</u>	<u>Excellent</u>	<u>Good</u>	<u>Fair</u>	<u>Poor</u>	
	<u>Description</u>	<u>Description</u>	<u>Description</u>	<u>Description</u>	
Providing a vital service for any community.....	_____	_____	_____	_____	F10_____
Which is secure and lucrative.....	_____	_____	_____	_____	F11_____
Which requires higher intelligence than most other professions.....	_____	_____	_____	_____	F12_____
In which fees are disproportionately high for usual services given.....	_____	_____	_____	_____	F13_____
Which is a specialty of medicine.....	_____	_____	_____	_____	F14_____
Where obtaining of the services is in most instances a painful process.....	_____	_____	_____	_____	F15_____
With high ethical standards.	_____	_____	_____	_____	F16_____
In which the skills required are not too complex or difficult to learn.....	_____	_____	_____	_____	F17_____
Having higher prestige than all other professions but medicine.....	_____	_____	_____	_____	F18_____
Requiring considerably more difficult training than most other professions.....	_____	_____	_____	_____	F19_____
					F20_____

15. Do you think that the way in which your fellow students were paid, (Pre-payment Plans, Dentitdre, etc.) would influence the way in which they treated their patients?

_____ Yes. In what way? _____

_____ No.
_____ I don't know.

F21_____
F22_____

16. Would it influence the way in which you treated your patients?

_____ Yes. If yes, in what way? _____

_____ No.
_____ I don't know.

F23_____
F24_____

17. In your opinion, which of the following characteristics are important to have in order to be a good dentist?

	<u>Very</u> <u>Important</u>	<u>Moderately</u> <u>Important</u>	<u>Slightly</u> <u>Important</u>	<u>Not</u> <u>Important</u>	
Dignified appearance and mannerisms.....	_____	_____	_____	_____	F25 _____
Good business sense.....	_____	_____	_____	_____	F26 _____
Ability to handle people..	_____	_____	_____	_____	F27 _____
Interest in writing professional articles.....	_____	_____	_____	_____	F28 _____
Scientific curiosity.....	_____	_____	_____	_____	F29 _____
High ethical standards....	_____	_____	_____	_____	F30 _____
Recognition of one's own limitations.....	_____	_____	_____	_____	F31 _____
Good manual dexterity.....	_____	_____	_____	_____	F32 _____
Outgoing and extroverted personality.....	_____	_____	_____	_____	F33 _____
High intellectual ability.	_____	_____	_____	_____	F34 _____
Emotional stability.....	_____	_____	_____	_____	F35 _____
Good technical skills.....	_____	_____	_____	_____	F36 _____
Strong dedication to dentistry.	_____	_____	_____	_____	F37 _____
Skillful management of time.	_____	_____	_____	_____	F38 _____
Good research ability.....	_____	_____	_____	_____	F39 _____
Getting real enjoyment out of dentistry.....	_____	_____	_____	_____	F40 _____

18. In your opinion, how important is a full-time dental assistant to the operation of a dental practice?

_____ Not at all important.	F41 _____
_____ Slightly important.	
_____ Moderately important.	
_____ Very important	

19. At the present stage of your training, how capable are you of training a dental assistant for work at the chair?

_____ Not at all capable.	F42 _____
_____ Fairly capable.	
_____ Very capable.	

20. How willing would you be to hire an inexperienced person to train as an assistant?

_____ Not at all willing.	F43 _____
_____ Slightly willing.	
_____ Moderately willing.	
_____ Very willing.	

21. If you were not successful in dental school, how would you feel about it?

- ☐ It would not bother me too much.
☐ I would be somewhat disappointed.
☐ I would be quite disappointed.
☐ I would be terrifically disappointed.

F44

22. After you leave school, how interested would you be in spending at least part of your time in the following activities?

Very Interested Moderately Interested Slightly Interested Not At All Interested

- Dental administration
 in a Health Department.....
 Teaching in a dental school.
 Dental research.....
 Voluntary clinical work for
 under-privileged people,
 through an institution or
 agency.....

☐☐☐☐

F45

☐☐☐☐

F46

☐☐☐☐

F47

☐☐☐☐☐☐☐☐☐☐☐☐

F48

23. After you have been out in practice ten years or so, how much do you think any of the following activities would appeal to you?

Very Much Moderately Somewhat Not At All

- Serving as a part time staff
 member in a hospital.....
 Participating with local officials
 and health personnel on committees
 concerned with community health
 problems.....
 Part-time teaching in a dental
 school.....
 Giving talks on dentistry to men
 and women's service clubs, PTA's,
 etc.....
 Doing part-time clinical work for
 nominal fees in non-profit
 institutions or agencies.....
 Working with a research team en-
 gaged in laboratory testing of
 theoretical problems concerning
 different dental disorders.....
 Running for public office, either
 federally or provincially.....
 Taking refresher courses in dental
 school.....
 Conducting a statistical study of
 the possible relationship between
 mouth cancer rates and dental dis-
 orders.....
 Constructing a particularly difficult
 dental appliance.....
 Running for local public office...

☐☐☐☒

F49

☐☐☐☐

F50

☐☐☐☐☐☐☐☐☐☐☐☐

F51

☐☐☐☐☐☐☐☐☐☐☐☐

F52

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F57

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F58

☐☐☐☐☐☐☐☐☐☐☐☐

F59

24. For the following, please indicate the extent to which you agree or disagree by circling ONE number on the scale provided:

1. A public dental program should operate as a closely integrated part of general health services.

Strongly Agree 1 2 3 4 5 Strongly Disagree

G10 _____

2. It is important that dental schools teach students about the oral health habits of families and communities.

Strongly Agree 1 2 3 4 5 Strongly Disagree

G11 _____

3. Dentists should not be too involved with what their patients feel about dental and how they feel about coming for treatment; they should mainly be concerned with fixing teeth.

Strongly Agree 1 2 3 4 5 Strongly Disagree

G12 _____

4. Dentistry is a suitable profession for a woman.

Strongly Agree 1 2 3 4 5 Strongly Disagree

G13 _____

5. If the government pays the dental bills for the patient it takes away the responsibility of the patient for his own oral health.

Strongly Agree 1 2 3 4 5 Strongly Disagree

G14 _____

6. There is not much need for dentists to know what health services are provided by other health professions and agencies for the public.

Strongly Agree 1 2 3 4 5 Strongly Disagree

G15 _____

7. Services provided by dentists and their staffs to individual patients should receive the most concern in a public dental program.

Strongly Agree 1 2 3 4 5 Strongly Disagree

G16 _____

8. Most of the money and energy of a public dental program should be directed toward the encouragement of actions people themselves can take for good dental health (e.g. oral hygiene, good eating habits).

Strongly Agree 1 2 3 4 5 Strongly Disagree

G17 _____

9. All health services, including dentistry, should be provided as a right and not as a privilege of every person.

Strongly Agree 1 2 3 4 5 Strongly Disagree

G18 _____

10. It is an individual's responsibility to arrange and pay for his own health services.

Strongly Agree 1 2 3 4 5 Strongly Disagree

G19 _____

11. Every dentist should employ at least one dental hygienist.

Strongly Agree 1 2 3 4 5 Strongly Disagree

G20

12. Dentists should accept opportunities to speak to parent-teacher groups about fluoridation.

Strongly Agree 1 2 3 4 5 Strongly Disagree

G21

13. A dentist is autonomous and has no responsibility to the other health professions.

Strongly Agree 1 2 3 4 5 Strongly Disagree

G22

14. It is a dentist's responsibility to offer to serve on public health organizations such as the Board of Health.

Strongly Agree 1 2 3 4 5 Strongly Disagree

G23

15. Dentists should take an active part in community health and welfare organizations which are not specifically concerned with dental health, as part of their community responsibility.

Strongly Agree 1 2 3 4 5 Strongly Disagree

G24

16. Community activities and programs which are not specifically connected with dentistry or with the health professions are not the concern of the dentist.

Strongly Agree 1 2 3 4 5 Strongly Disagree

G25

17. The permanent duties of the dental hygienist should be broadened to include a wider range of intra-oral operations.

Strongly Agree 1 2 3 4 5 Strongly Disagree

G26

18. It is part of the dentist's responsibility to his profession to write articles for its professional journals.

Strongly Agree 1 2 3 4 5 Strongly Disagree

G27

19. Dental mechanics should be permitted to deal directly with the public.

Strongly Agree 1 2 3 4 5 Strongly Disagree

G28

20. Dental treatment should be provided at the public expense for all children in our society.

Strongly Agree 1 2 3 4 5 Strongly Disagree

G29

21. People do not seek dental treatment because they are afraid of dentists.

Strongly Agree 1 2 3 4 5 Strongly Disagree

G30

22. Most people do not get adequate dental care because they cannot afford to pay the dentist.

Strongly Agree 1 2 3 4 5 Strongly Disagree

G31 _____

23. More time should be spent in dental school learning about the social origins of the profession, its code of ethics, and its relationship to society.

Strongly Agree 1 2 3 4 5 Strongly Disagree

G32 _____

24. Courses in social or community dentistry are boring and not helpful.

Strongly Agree 1 2 3 4 5 Strongly Disagree

G33 _____

APPENDIX B

FACULTY QUESTIONNAIRE

THE ASSOCIATION OF CANADIAN FACULTIES OF DENTISTRY
SURVEY OF DENTAL EDUCATION

YOUR NAME IS NEEDED TO CHECK OFF COMPLETED QUESTIONNAIRES AGAINST FACULTY LISTS AND TO CO-ORDINATE THE QUESTIONNAIRE AND INTERVIEW DATA. ALL INDIVIDUAL REPLIES WILL BE HELD IN STRICTEST CONFIDENCE. NO INDIVIDUAL REPLIES OR QUESTIONNAIRES WILL EVER BE SEEN BY THE STAFF OR STUDENTS OF YOUR SCHOOL OR ANYBODY ELSE EXCEPT THE RESEARCH SOCIOLOGISTS ON THIS PROJECT.

NAME: _____

_____ CHECK HERE / IF YOU WOULD LIKE A REPORT OF THE RESULTS OF THE SURVEY.

If even in spite of these assurances, you feel you can only complete this questionnaire if you remain anonymous, please complete the enclosed post-card (so that we may know you have replied and will not trouble you further) and send the card and the completed questionnaire under separate cover to the A.C.F.D..

THANK YOU FOR YOUR CO-OPERATION

1. Dental School _____ A9

2. Your administrative position in school (if any) _____ A10

3. Department: (If you are in a combined department, check your speciality.)

_____ Operative dentistry

_____ Oral Surgery

_____ Orthodontics

_____ Pedodontics

_____ Prosthodontics

_____ Periodontics

_____ Oral Diagnosis

_____ Roentgenology

_____ Oral pathology

_____ Oral medicine

_____ Other, (specify) _____

A11, 12

4. What is your academic title? (Check one)

_____ Professor

_____ Associate Professor

_____ Assistant Professor

_____ Instructor

_____ Teaching Fellow

_____ Clinical Professor

_____ Clinical Associate Professor

_____ Clinical Assistant Professor

_____ Clinical Instructor

_____ Lecturer

_____ Other: _____

A13, 14

5. Sex:

_____ Male

_____ Female

A15

6. Marital Status:

_____ Single

_____ Married

_____ Other

A16

7. Age:

_____ 35 or under

_____ 36 - 40

_____ 41 - 45

_____ 46 - 50

_____ 51 - 55

_____ 56 and over

A17

8. What is the language you first learnt as a child and still speak?

_____ English
 _____ French
 _____ Other (please specify) _____

A18

9. What type of appointment do you hold in the dental school?

_____ Full-time
 _____ Part-time

A19

10. Do you have any private patients?

_____ Yes
 _____ No

A20

11. (IF YES) In your practice outside the dental school?

_____ Yes
 _____ No

A21

12. (IF NO) Have you been in private practice? How recently?

_____ No
 _____ Yes, 1 to 3 years ago
 _____ Yes, 4 to 5 years ago
 _____ Yes, 6 to 10 years ago
 _____ Yes, 10 to 20 years ago
 _____ Yes, over 20 years ago

A22

For how many years?

_____ years.

A23

13. How many years have you taught in a dental school:

Full-time _____ years
 Part-time _____ years
 In all _____ years

A24

A25

A26

14. How many years have you taught at your present school? (including the present year)

_____ years.

A27

15. At how many schools have you taught other than the one with which you are presently employed?

A28

16. Do you consider yourself to be a specialist in any of the following areas? (Check one)

_____ Dental Public Health
 _____ Oral Pathology
 _____ Oral Surgery
 _____ Orthodontics
 _____ Pedodontics
 _____ Periodontics
 _____ Prosthodontics
 _____ Other: _____

A29, 30

16. (Continued)

IF you consider yourself a specialist, on what basis do you practice?
(e.g. FRCD (Canada))

A31

17. IF YOU ARE A QUALIFIED DENTIST: List below where and when you obtained each of your academic degrees and the fields in which you obtained them.

	YEAR	PROVINCE/COUNTRY	FIELD	
Bachelor's (before dental school)	_____	_____	_____	A32
Master's (before dental school)	_____	_____	_____	A33, 34
B.D.S., D.D.S., M.D.S.	_____	_____	_____	A35, 36
Ph.D., D.Sc.	_____	_____	_____	A37, 38
M.D.	_____	_____	_____	A39
Honorary	_____	_____	_____	A40, 41
Certificate or Diploma of Dental Hygiene	_____	_____	_____	A42, 43 A44, 45
Other (please specify)	_____	_____	_____	A46

IF YOU ARE NOT A QUALIFIED DENTIST: List below where and when you obtained each of your academic degrees and the fields in which you obtained them:

	YEAR	PROVINCE/COUNTRY	FIELD	
Bachelor's	_____	_____	_____	A47
Master s	_____	_____	_____	A48, 49
Ph.D., D. Sc.	_____	_____	_____	A50, 51
M.D.	_____	_____	_____	A52, 53
Other (please specify)	_____	_____	_____	
_____	_____	_____	_____	
_____	_____	_____	_____	

18. Please check the types of activities that you perform at your school.
Check as many as apply.

☐ Clinical Teaching
☐ Preclinical technic laboratory teaching
☐ Basic Science laboratory teaching
☐ Classroom Teaching
☐ Research
☐ Administration (including committees, etc.)
☐ Preparation of Teaching Material
☐ Counseling Students
☐ Other: _____

A54, 55

19. On the average, how many hours per week do you spend teaching dental students? (check one)

☐ less than 1 hour per week
☐ 1 - 3 hours per week
☐ 4 - 10 hours per week
☐ 11 - 20 hours per week
☐ More than 20 hours per week

A56

20. What types of students do you teach? (Check as many as apply)

☐ Undergraduate dental students
☐ Graduate students in dentistry
☐ Short refresher course students
☐ Full-time postgraduate students in dentistry
☐ Dental hygienists
☐ Dental Assistants
☐ Dental Technicians
☐ Other: _____

A57

21. The following are a number of factors which are important, to a greater or lesser degree, to most dental students in considering their careers in dentistry. According to your general impression do you think that students attribute too much importance, the right amount of importance, or too little importance to these factors? For each one, check column A, B, or C.

DENTAL STUDENTS GIVE THIS:

	A	B	C	
	<u>Too much</u>	<u>The right amount</u>	<u>Too little</u>	
	<u>importance</u>	<u>of importance</u>	<u>importance</u>	
a. Developing warm personal relationships with patients	_____	_____	_____	A58
b. Having a practice which is not exceedingly demanding physically	_____	_____	_____	A59
c. Having the greatest possible scope for independent action	_____	_____	_____	A60
d. Engaging in a wide range of activities	_____	_____	_____	A61
e. Having prestige in the community	_____	_____	_____	A62
f. Having prestige among colleagues in the dental profession	_____	_____	_____	A63
g. Being able to simplify work to a point at which it is easily manageable	_____	_____	_____	A64
h. Being able to make a contribution to scientific knowledge	_____	_____	_____	A65
i. Having working hours which are not extremely long	_____	_____	_____	A66
j. Having to use a very high level of abilities and skills	_____	_____	_____	A67
k. Having the chance to help people	_____	_____	_____	A68
l. Having no serious consequences resulting from mistakes	_____	_____	_____	A69
m. Dealing with problems which require exacting analysis	_____	_____	_____	A70
n. Being able to rely on the aid of other experienced persons	_____	_____	_____	A71
o. Being looked up to as a counsellor by patients	_____	_____	_____	A72
p. Reaching a yearly income of \$25,000 or more, 10 years after leaving dental school	_____	_____	_____	A73

About you as a teacher: (Answer each one)

	YES	NO			
Have you ever had formal courses in education (psychology of teaching, teaching methods, etc.)?	_____	_____	A74		
Have you participated in an inservice in teaching or in dental education since 1955?	_____	_____	A75		
Does your school have such a programme now?	_____	_____	A76		
Do you do any hospital teaching?	_____	_____	A77		
Do you feel you are now attending as many meetings each year as are necessary to maintain your competence as a teacher?	_____	_____	A78		
On the scale provided indicate to what extent: (Circle one)					
You think you would benefit from an inservice program on dental teaching if one were organized in your school	A great deal	Not at all			
	1 2 3 4 5		B9		
At your university you feel that dentistry has the same acceptance and prestige as the other academic units have	1 2 3 4 5		B10		
You feel that part of the compensation that you receive for teaching is the prestige that is attached to a faculty appointment	1 2 3 4 5		B11		
You feel that your school has an effective system for counselling students	1 2 3 4 5		B12		
How well acquainted are you with the following subjects? Check one in each line.					
	VERY WELL	FAIRLY WELL	POORLY	NOT AT ALL	
Motivation of Learning	_____	_____	_____	_____	B13
Theories of Learning	_____	_____	_____	_____	B14
Course Planning	_____	_____	_____	_____	B15
Methods of Teaching	_____	_____	_____	_____	B16
Test Construction	_____	_____	_____	_____	B17

25. Do you feel that you are allowed enough time for the following duties?
(Check as many as apply)

	YES	NO	
Preparation for lectures and other class-room teaching	☐	☐	B18
Preparation of teaching materials and demonstrations	☐	☐	B19
Preparation and grading of examinations	☐	☐	B20
Administrative duties (including committee work)	☐	☐	B21
Research	☐	☐	B22
Service (University, profession, public)	☐	☐	B23
Counselling of students	☐	☐	B24

36. Regarding the curriculum, do you feel that the students should receive more instruction or less instruction in the subjects listed below? Check 1 in each line.

	MORE IN- STRUCTION	SAME AMOUNT OF IN- STRUCTION	LESS IN- STRUCTION	
Anesthesia	_____	_____	_____	B25
Gross anatomy	_____	_____	_____	B26
Microscopic anatomy	_____	_____	_____	B27
Physiology	_____	_____	_____	B28
Biochemistry	_____	_____	_____	B29
Bacteriology	_____	_____	_____	B30
Pharmacology	_____	_____	_____	B31
Dental Anatomy	_____	_____	_____	B32
General pathology	_____	_____	_____	B33
Oral pathology	_____	_____	_____	B34
Clinical operative dentistry	_____	_____	_____	B35
Clinical endodontics	_____	_____	_____	B36
Clinical crown & bridge pros- thesis (fixed)	_____	_____	_____	B37
Clinical partial denture pros- thesis (removable bridge)	_____	_____	_____	B38
Clinical complete denture prosthesis	_____	_____	_____	B39
Clinical periodontics	_____	_____	_____	B40
Clinical oral surgery	_____	_____	_____	B41
Clinical pedodontics	_____	_____	_____	B42
Clinical orthodontics	_____	_____	_____	B43
Preclinical prosthetic technics	_____	_____	_____	B44
Preclinical operative technics	_____	_____	_____	B45
Hospital experience	_____	_____	_____	B46
Applied courses in basic sciences	_____	_____	_____	B47
Dental materials	_____	_____	_____	B48
Ceramics	_____	_____	_____	B49
Gold foil	_____	_____	_____	B50
Ethics	_____	_____	_____	B51
Practice administration	_____	_____	_____	B52
Preventive dentistry and public health	_____	_____	_____	B53
Occlusion	_____	_____	_____	B54
Oral medicine	_____	_____	_____	B55
Oral diagnosis	_____	_____	_____	B56
Use of auxiliary personnel	_____	_____	_____	B57
Radiology	_____	_____	_____	B58
Growth and development	_____	_____	_____	B59
Other: _____	_____	_____	_____	B60
Other: _____	_____	_____	_____	B61

27. Do you consider teaching or practicing as your career? (Check one)

_____ Teaching
 _____ Practicing
 _____ Both are equal to me

B62

28. To which professional associations do you belong?
Do you regularly attend their meetings?

BELONG		REGULARLY ATTEND	
_____	Local Dental Society	_____	B63,64
_____	Your Provincial Dental Association	_____	B65,66
_____	Canadian Dental Association	_____	B67,68
_____	Association of Canadian Faculties of Dentistry	_____	B69,70
_____	International Association of Dentists	_____	
_____	Other: _____	_____	
_____	Other: _____	_____	
_____	Other: _____	_____	

29. For each of the following careers, check the most important factor that you think leads a student to choose that career.

	<u>INCOME</u>	<u>INDEPEND- ENCE</u>	<u>SECURITY</u>	<u>PRESTIGE</u>	<u>RESPON- SIBILITY</u>	
Dentistry	_____	_____	_____	_____	_____	B71
Medicine	_____	_____	_____	_____	_____	B72
Law	_____	_____	_____	_____	_____	B73
Business	_____	_____	_____	_____	_____	B74
Engineering	_____	_____	_____	_____	_____	B75
Architecture	_____	_____	_____	_____	_____	B76

30. In general, about how much time do you spend with your students in each of the following situations?

	<u>PRACTICALLY NONE</u>	<u>A LITTLE BIT</u>	<u>A FAIR AMOUNT</u>	<u>QUITE A LOT</u>	
Informal discussion groups in connection with your courses.....	_____	_____	_____	_____	B77
Bull sessions about life in general.....	_____	_____	_____	_____	B78
Discussions about the dental profession in general.....	_____	_____	_____	_____	B79
Participating in leisure time activities together.....	_____	_____	_____	_____	B80

31. Using the scale provided, please indicate to what extent you think it is important that instructors in dental schools should or should not do the following things: (Please circle only one number)

Lecture more or less directly from the text of the course.....	SHOULD 1 2 3 4 5 SHOULD NOT	C9
Give detailed guidance on what students should emphasize in studying...	SHOULD 1 2 3 4 5 SHOULD NOT	C10
Maintain strict control over classroom procedures and discussions.....	SHOULD 1 2 3 4 5 SHOULD NOT	C11
Grade on performance rather than on effort.....	SHOULD 1 2 3 4 5 SHOULD NOT	C12
Make an effort to become personally acquainted insofar as that is possible with students in their courses.....	SHOULD 1 2 3 4 5 SHOULD NOT	C13
Discuss in detail in the classroom their own research.....	SHOULD 1 2 3 4 5 SHOULD NOT	C14

32. To what extent do you think you, in your courses here, have the following characteristics?

A GREAT
DEAL

NOT AT
ALL

A greater interest in research than in teaching.....	1 2 3 4 5	C15
An ability to communicate and give clear explanations.....	1 2 3 4 5	C16
Treating dental students more as 'young dentists' than as students.....	1 2 3 4 5	C17
Exhibition of high competence and knowledge in course and subject matter.....	1 2 3 4 5	C18
Skill in relating course subject matter to specific dental problems and work..	1 2 3 4 5	C19
A sympathetic attitude toward student problems with course material.....	1 2 3 4 5	C20
Show a willingness to discuss the personal problems of students with them in out-of-class meetings.....	1 2 3 4 5	C21

33. Do you work in the clinic at all?

_____ Yes
_____ No

C22

Whether you work in the clinic or not we are interested in your opinions to the following questions.

34. On the scale provided, please indicate the extent to which you regard clinic patients in the manner described. (Please circle only one number)

	MY	NOT MY ATTITUDE AT ALL
ATTITUDE		
As dental problems to be solved...	1 2 3 4 5	C23
As a means for meeting the requirements necessary to obtain a degree in dentistry.....	1 2 3 4 5	C24
As opportunities to learn dental procedure.....	1 2 3 4 5	C25
As individual persons who need your help.....	1 2 3 4 5	C26

35. Do you think a dental student working in the dental clinic should:

	<u>ALWAYS</u>	<u>OFTEN</u>	<u>SOMETIMES</u>	<u>SELDOM</u>	<u>NEVER</u>	
Let patients know the full extent of their dental problems.....	_____	_____	_____	_____	_____	C27
Admit to clinic instructors his uncertainty with respect to a diagnostic problem....	_____	_____	_____	_____	_____	C28
Advise patients on their personal non-dental problems	_____	_____	_____	_____	_____	C29
Try out techniques not preferred by clinical instructors.....	_____	_____	_____	_____	_____	C30
Attempt to discourage clinic patients with routine dental problems from returning for treatment by oneself..	_____	_____	_____	_____	_____	C31
Question clinic instructors judgements with respect to a clinic problem.....	_____	_____	_____	_____	_____	C32
Check with other students in the clinic about the procedures to follow.....	_____	_____	_____	_____	_____	C33

36. How much importance do you think the clinic instructors attach to each of the following in judging the dental competence of students in the clinic?

	<u>GREAT</u> <u>IMPORTANCE</u>	<u>MODERATE</u> <u>IMPORTANCE</u>	<u>MINOR</u> <u>IMPORTANCE</u>	<u>NO</u> <u>IMPORTANCE</u>	
Extensive knowledge of dental facts.....	_____	_____	_____	_____	<u>C34</u>
Ability to get along with other students..	_____	_____	_____	_____	<u>C35</u>
Ability to follow instructions of the clinic faculty.....	_____	_____	_____	_____	<u>C36</u>
Ability to carry out research.....	_____	_____	_____	_____	<u>C37</u>
Ability to review professional literature..	_____	_____	_____	_____	<u>C38</u>
Skill in diagnosis....	_____	_____	_____	_____	<u>C39</u>
Keeping cubicle and work areas clean.....	_____	_____	_____	_____	<u>C40</u>
Knowledge of different treatment procedures..	_____	_____	_____	_____	<u>C41</u>
Skill in dealing with personal problems of patients.....	_____	_____	_____	_____	<u>C42</u>
Outward appearance and behaviour of student giving impression that he is certain of what he is doing, whatever his inward feeling.....	_____	_____	_____	_____	<u>C43</u>
Ability to get along with instructors.....	_____	_____	_____	_____	<u>C44</u>

37. To what extent have you discussed some of the following things with students, either in or out of class or the clinic?

	NEVER	ALMOST NEVER	EVERY OFTEN	SO FAIRLY PRE- QUENTLY	VERY FRE- QUENTLY	
Use of recall systems..	_____	_____	_____	_____	_____	C45
Giving of prophylaxes..	_____	_____	_____	_____	_____	C46
Teaching correct tooth- brushing.....	_____	_____	_____	_____	_____	C47
Dietary control recom- mendations.....	_____	_____	_____	_____	_____	C48
Filling primary teeth..	_____	_____	_____	_____	_____	C49
Topical application of fluoride.....	_____	_____	_____	_____	_____	C50
Where to set up a luc- rative practice.....	_____	_____	_____	_____	_____	C51
Concern with oral habits	_____	_____	_____	_____	_____	C52
Current issues in society	_____	_____	_____	_____	_____	C53
Biopsies of abnormally soft tissues.....	_____	_____	_____	_____	_____	C54
Treatment of fractured incisors.....	_____	_____	_____	_____	_____	C55
Being a salaried dentist	_____	_____	_____	_____	_____	C56
Concern about tone of gingival tissue.....	_____	_____	_____	_____	_____	C57
How to handle patients who don't pay their bills	_____	_____	_____	_____	_____	C58
Laboratory tests for de- termination of caries activity.....	_____	_____	_____	_____	_____	C59
Promotion of water fluoridation.....	_____	_____	_____	_____	_____	C60
Participation in or con- sultation with community health groups.....	_____	_____	_____	_____	_____	C61
Co-operation with dental health education programs	_____	_____	_____	_____	_____	C62
The responsibility of a profession in society...	_____	_____	_____	_____	_____	C63

38. Do you think that students in professional schools, such as dentistry, should have more influence in such areas as curriculum changes, etc.?

_____ Yes. Why? _____

_____ No. Why? _____

_____ Undecided. Why? _____

C65

C66

39. Dental schools often have informal and formal conduct rules. Do you think these rules should be more strictly enforced?

Yes. Why? _____

No. Why? _____

Undecided. Why? _____

C67

C68

40. The following are a series of choices people often make upon entering the career of their choice. Please rate dental students according to the degree to which you think one or the other alternatives are chosen in making their decision to enter dentistry. Please circle only one number per series.

Good Income Solving Oral Health Problems
1 2 3 4 5 6 7 8 9

C69

Contributes to Health and Welfare Independence Job Offers
1 2 3 4 5 6 7 8 9

C70

Being a Professional Relieving Pain
1 2 3 4 5 6 7 8 9

C71

Application of Scientific Principles to Dental Problems Job Security
1 2 3 4 5 6 7 8 9

C72

High Standard of Living Improvement of Patients' Facial Appearance
1 2 3 4 5 6 7 8 9

C73

Prevention of Oral Disease Respect of Public
1 2 3 4 5 6 7 8 9

C74

Freedom Job Offers (eg: Regulate Own Hours) Interesting Technical Problems
1 2 3 4 5 6 7 8 9

C75

Opportunity to Help People Long Length of Career Possible
1 2 3 4 5 6 7 8 9

C76

Superior Working Conditions Opportunity to Cure Sicknes
1 2 3 4 5 6 7 8 9

C77

41. Now, IF YOU ARE A QUALIFIED DENTIST, please rate yourself according to the degree to which one or the other alternatives was chosen in making your decision to enter dentistry. Please circle only one number per series.

Good Income	Solving Oral Health Problems
1 2 3 4 5 6 7 8 9	8 9

D9

Contributes to Health and Welfare	Independence Job Offers
1 2 3 4 5 6 7 8 9	8 9

D10

Being a Professional	Relieving Pain
1 2 3 4 5 6 7 8 9	8 9

D11

Application of Scientific Principles to Dental Problems	Job Security
1 2 3 4 5 6 7 8 9	8 9

D12

High Standard of Living	Improvement of Patients' Facial Appearance
1 2 3 4 5 6 7 8 9	8 9

D13

Prevention of Oral Disease	Respect of Public
1 2 3 4 5 6 7 8 9	8 9

D14

Freedom Job Offers (eg. Regulate Own Hours)	Interesting Technical Problems
1 2 3 4 5 6 7 8 9	8 9

D15

Opportunity to Help People	Long Length of Career Possible
1 2 3 4 5 6 7 8 9	8 9

D16

Superior Working Conditions	Opportunity to Cure Sickness
1 2 3 4 5 6 7 8 9	8 9

D17

42. On the scale provided, indicate how important each of the following factors were in leading you to enter teaching. (Circle just one number on each scale)

	Very Important	Not at all Important
Income	1 2 3 4 5	
Independence	1 2 3 4 5	
Prestige	1 2 3 4 5	
Security	1 2 3 4 5	
Responsibility	1 2 3 4 5	
Ill Health	1 2 3 4 5	

D18

D19

D20

D21

D22

D23

Were there any other factors which led you to enter teaching?
(Please specify)

D24

D25

D26

In your opinion, how well does each of the following phrases describe in part how the majority of people view the dental profession?

<u>A Profession</u>	<u>Excellent Description</u>	<u>Good Description</u>	<u>Fair Description</u>	<u>Poor Description</u>	
Providing a vital service to any community.....	_____	_____	_____	_____	D27
Which is secure and lucrative.....	_____	_____	_____	_____	D28
Which requires higher intelligence than most other professions.....	_____	_____	_____	_____	D29
In which fees are disproportionately high for usual services given.....	_____	_____	_____	_____	D30
Which is a specialty of medicine.....	_____	_____	_____	_____	D31
Where obtaining of the services is in most instances a painful process.....	_____	_____	_____	_____	D32
With high ethical standards	_____	_____	_____	_____	D33
In which the skills required are not too complex or difficult to learn....	_____	_____	_____	_____	D34
Having higher prestige than all other professions but medicine.....	_____	_____	_____	_____	D35
Requiring considerably more difficult training than most other professions	_____	_____	_____	_____	D36

44. Now, how well do you personally think the same phrases describe the dental profession as you now see it.

<u>A Profession</u>	<u>Excellent</u>	<u>Good</u>	<u>Fair</u>	<u>Poor</u>	
Providing a vital service for any community.....	_____	_____	_____	_____	D37
Which is secure and lucrative.....	_____	_____	_____	_____	D38
Which requires higher intelligence than most other professions.....	_____	_____	_____	_____	D39
In which fees are disproportionately high for usual services given.....	_____	_____	_____	_____	D40
Which is a specialty of medicine.....	_____	_____	_____	_____	D41
Where obtaining of the services is in most instances a painful process.....	_____	_____	_____	_____	D42
With high ethical standards	_____	_____	_____	_____	D43
In which the skills required are not too complex or difficult to learn.....	_____	_____	_____	_____	D44

44. (Continued)

<u>A Profession</u>	<u>Excel- lent</u>	<u>Good</u>	<u>Fair</u>	<u>Poor</u>	
Having higher prestige than all other professions but medicine.....	_____	_____	_____	_____	D45
Requiring considerably more difficult training than most other professions...	_____	_____	_____	_____	D46

45. In your opinion, which of the following characteristics are important to have in order to be a good dentist?

	<u>Very Im- portant</u>	<u>Moderately Important</u>	<u>Slightly Important</u>	<u>Not Im- portant</u>	
Dignified appearance and mannerisms.....	_____	_____	_____	_____	D47
Good Business Sense.....	_____	_____	_____	_____	D48
Ability to handle people	_____	_____	_____	_____	D49
Interest in writing professional articles.....	_____	_____	_____	_____	D50
Scientific curiosity....	_____	_____	_____	_____	D51
High ethical standards..	_____	_____	_____	_____	D52
Recognition of one's own limitations.....	_____	_____	_____	_____	D53
Good manual dexterity...	_____	_____	_____	_____	D54
Outgoing and extroverted personality.....	_____	_____	_____	_____	D55
High intellectual ability	_____	_____	_____	_____	D56
Emotional stability.....	_____	_____	_____	_____	D57
Good technical skills...	_____	_____	_____	_____	D58
Strong dedication to dentistry.....	_____	_____	_____	_____	D59
Skillful management of time.....	_____	_____	_____	_____	D60
Good research ability..	_____	_____	_____	_____	D61
Getting real enjoyment out of dentistry.....	_____	_____	_____	_____	D62

6. For the following, please indicate the extent to which you agree or disagree by circling ONE number on the scale provided:

1. A public dental program should operate as a closely integrated part of general health services.

Strongly agree 1 2 3 4 5 Strongly disagree

E9 _____

2. It is important that dental schools teach students about the oral health habits of families and communities.

Strongly agree 1 2 3 4 5 Strongly disagree

E10 _____

3. Dentists should not be too involved with what their patients feel about dental care and how they feel about coming for treatment; they should mainly be concerned with fixing teeth.

Strongly agree 1 2 3 4 5 Strongly disagree

E11 _____

4. Dentistry is a suitable profession for a woman.

Strongly agree 1 2 3 4 5 Strongly disagree

E12 _____

5. If the government pays the dental bills for the patient it takes away the responsibility of the patient for his own oral health.

Strongly agree 1 2 3 4 5 Strongly disagree

E13 _____

6. There is not much need for dentists to know what health services are provided by other health professions and agencies for the public.

Strongly agree 1 2 3 4 5 Strongly disagree

E14 _____

7. Services provided by dentists and their staffs to individual patients should receive the most concern in a public dental program.

Strongly agree 1 2 3 4 5 Strongly disagree

E15 _____

8. Most of the money and energy of a public dental program should be directed toward the encouragement of actions people themselves can take for good dental health. (EG. oral hygiene, good eating habits.)

Strongly agree 1 2 3 4 5 Strongly disagree

E16 _____

9. All health services, including dentistry, should be provided as a right and not as a privilege of every person.

Strongly agree 1 2 3 4 5 Strongly disagree

E17 _____

10. It is an individual's responsibility to arrange and pay for his own health services.

Strongly agree 1 2 3 4 5 Strongly disagree

E18 _____

11. Every dentist should employ at least one dental hygienist.

Strongly agree 1 2 3 4 5 Strongly disagree

E19 _____

12. Dentists should accept opportunities ²⁸⁷ to speak to parent-teacher groups about fluoridation.

Strongly agree 1 2 3 4 5 Strongly disagree

E20

13. A dentist is autonomous and has no responsibility to the other health professions.

Strongly agree 1 2 3 4 5 Strongly disagree

E21

14. It is a dentist's responsibility to offer to serve on public health organisations such as the Board of Health.

Strongly agree 1 2 3 4 5 Strongly disagree

E22

15. Dentists should take an active part in community health and welfare organizations which are not specifically concerned with dental health as part of their community responsibility.

Strongly agree 1 2 3 4 5 Strongly disagree

E23

16. Community activities and programs which are not specifically connected with dentistry or with the health professions are not the concern of the dentist.

Strongly agree 1 2 3 4 5 Strongly disagree

E24

17. The permanent duties of the dental hygienist should be broadened to include a wider range of intra-oral operations.

Strongly agree 1 2 3 4 5 Strongly disagree

E25

18. It is part of the dentist's responsibility to his profession to write articles for its professional journals.

Strongly agree 1 2 3 4 5 Strongly disagree

E26

19. Dental mechanics should be permitted to deal directly with the public.

Strongly agree 1 2 3 4 5 Strongly disagree

E27

20. Dental treatment should be provided at the public expense for all children in our society.

Strongly agree 1 2 3 4 5 Strongly disagree

E28

21. People do not seek dental treatment because they are afraid of dentists.

Strongly agree 1 2 3 4 5 Strongly disagree

E29

22. Most people do not get adequate dental care because they cannot afford to pay the dentist.

Strongly agree 1 2 3 4 5 Strongly disagree

E30

23. More time should be spent in dental school learning about the social origins of the profession, its code of ethics, and its relationship to society.

Strongly agree 1 2 3 4 5 Strongly disagree

E31

24. Courses in social or community dentistry are not helpful.

Strongly agree 1 2 3 4 5 Strongly disagree

E32

47. THE LEARNING ENVIRONMENT IN DENTAL SCHOOLS:

Dental schools differ from one another in many ways, and different people within each institution feel differently about each aspect of the learning environment. The climate of a dental school is a mixture of various features, facilities, rules and procedures, faculty characteristics, courses of study, classroom activities, students' interests, extra-curricular programs, informal activities, and other conditions and events.

You are asked to give your perceptions about the dental school. You have lived in its environment, participated in its activities, seen its features, and sensed its attitudes. What kind of place is it? We simply want an objective description of the climate of your school. We would like to have your honest, frank opinion.

NOTE: The items in the questionnaire do not judge whether the characteristics are desirable or undesirable. Therefore, in no way are the questions to be considered a 'test' of the school or the person answering the questions.

The questions concern the dental school only, and not the larger body of the university.

INSTRUCTIONS FOR ANSWERING: In answering each item go through the following steps:

1. Read each item carefully.
2. Think about how well the item describes your dental school.
3. Circle a number opposite the item according to the following instructions:

If the item is definitely false about your dental school, circle space 1.

If the item is mostly false, circle space 2.

If the item is true and false to an equal degree, circle space 3.

If the item is mostly true, circle space 4.

If the item is definitely true, circle space 5.

4. Answer every item. Please do not omit any. Items begin on the following page.

	Definitely False	Mostly False	No Opinion	Mostly True	Definitely True	
1. The goals and purposes of the work are clearly defined for the student.	1	2	3	4	5	<u>F9</u>
2. Faculty members here typically exhibit great interest in and enthusiasm for their special fields of interest.	1	2	3	4	5	<u>F10</u>
3. Faculty members here usually go out of their way to establish friendly relations with students.	1	2	3	4	5	<u>F11</u>
4. There are tensions among certain groups of students that tend to interfere with learning.	1	2	3	4	5	<u>F12</u>
5. Decisions affecting the class tend to be made democratically.	1	2	3	4	5	<u>F13</u>
6. Students are concerned only with the work at hand and have few interests beyond this area.	1	2	3	4	5	<u>F14</u>
7. Most people here seem to be especially considerate of others.	1	2	3	4	5	<u>F15</u>
8. Most of the professors are very thorough teachers and really probe into the fundamentals of their subjects.	1	2	3	4	5	<u>F16</u>
9. Careful reasoning and clear logic are valued most highly in grading student papers, reports, or discussions.	1	2	3	4	5	<u>F17</u>
10. Certain students in the class are responsible for petty quarrels.	1	2	3	4	5	<u>F18</u>
11. Students hesitate to express their real opinions.	1	2	3	4	5	<u>F19</u>

12. The environment of the dental school stimulates interest in things other than pure dentistry	1	2	3	4	5	F20
13. Many students here develop a strong sense of responsibility about their role in contemporary social and political life.	1	2	3	4	5	F21
14. The academic atmosphere here is not very helpful to the students who want to get down to the business of practicing dentistry.	1	2	3	4	5	F22
15. Class discussions are typically vigorous and intense.	1	2	3	4	5	F23
16. Instructors clearly explain the goals and purposes of their courses.	1	2	3	4	5	F24
17. The students are encouraged to help each other.	1	2	3	4	5	F25
18. Students are disciplined by an outside group.	1	2	3	4	5	F26
19. A lecture by an outstanding public health dentist would be poorly attended by the students here.	1	2	3	4	5	F27
20. Many of the faculty seem enthusiastic about their teaching assignments.	1	2	3	4	5	F28
21. Course offerings and faculty in the basic sciences are outstanding.	1	2	3	4	5	F29
22. The goals of the dental school are well defined.	1	2	3	4	5	F30
23. Student organizations are closely scrutinized to guard against mistakes.	1	2	3	4	5	F31
24. Very few of the professors here try to get students interest in the broad social context of dentistry.	1	2	3	4	5	F32
25. Students are concerned only with the technical aspects of dentistry.	1	2	3	4	5	F33
26. Student competition facilitates acquisition of knowledge.	1	2	3	4	5	F34
27. Each student has a clear idea of the purpose of each course.	1	2	3	4	5	F35
28. Students co-operate equally well with all class members.	1	2	3	4	5	F36

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29. The values most stressed here are open-mindedness and objectivity.	1	2	3	4	5	<u>F37</u>
30. There is a lot of interest here in poetry, music, painting, and sculpture, architecture, etc.	1	2	3	4	5	<u>F38</u>
31. Students here learn that they are not only expected to develop ideals but also to express them in action.	1	2	3	4	5	<u>F39</u>
32. Most students here seem to enjoy studying dentistry.	1	2	3	4	5	<u>F40</u>
33. Most of the courses stress basic science or scholarship and really probe into the fundamentals of their subjects.	1	2	3	4	5	<u>F41</u>
34. Examinations here provide a genuine measure of a student's achievement and understanding of what has been taught.	1	2	3	4	5	<u>F42</u>
35. Some students refuse to mix with the rest of the class.	1	2	3	4	5	<u>F43</u>
36. Students are encouraged to criticize administrative policies and practices.	1	2	3	4	5	<u>F44</u>
37. Students here are actively concerned about national and international affairs.	1	2	3	4	5	<u>F45</u>
38. Students commonly share their problems.	1	2	3	4	5	<u>F46</u>
39. Long, serious, intellectual discussions are common among the students.	1	2	3	4	5	<u>F47</u>
40. Examinations here generally provide a good opportunity for the student to display his knowledge and understanding of the course material.	1	2	3	4	5	<u>F48</u>
41. There is an undercurrent of feelings among students that tend to pull the class apart.	1	2	3	4	5	<u>F49</u>
42. Faculty members rarely or never call students by their first names.	1	2	3	4	5	<u>F50</u>
43. A controversial speaker always stirs up a lot of student discussion.	1	2	3	4	5	<u>F51</u>
44. Students gather frequently in informal social activities.	1	2	3	4	5	<u>F52</u>
45. Most courses are a real intellectual challenge.	1	2	3	4	5	<u>F53</u>

46. The objectives of the class have never been clearly recognized.	1	2	3	4	5	<u>F54</u>
47. Certain students don't like other students.	1	2	3	4	5	<u>F55</u>
48. Only certain kinds of ideas may be expressed freely within class time.	1	2	3	4	5	<u>F56</u>
49. Modern art and music get little attention here.	1	2	3	4	5	<u>F57</u>
50. The dental faculty seems unaware that a well-rounded program of study includes courses in the behavioural sciences.	1	2	3	4	5	<u>F58</u>
51. Most of the professors are thorough teachers and are dedicated scholars in their fields.	1	2	3	4	5	<u>F59</u>
52. The objectives of dental education are well defined.	1	2	3	4	5	<u>F60</u>
53. Certain students are considered unco-operative.	1	2	3	4	5	<u>F61</u>
54. Some of the professors react to questions in class as if the students were criticizing them personally.	1	2	3	4	5	<u>F62</u>
55. There is a lot of interest in the philosophy and methods of science in this school.	1	2	3	4	5	<u>F63</u>
56. Many famous people are brought here by the dental school for lectures, student discussions, etc.	1	2	3	4	5	<u>F64</u>
57. Students are serious and purposeful about their work.	1	2	3	4	5	<u>F65</u>
58. There is considerable interest in the analysis of value systems, and the relativity of societies and ethics.	1	2	3	4	5	<u>F66</u>
59. Instructors usually outline course objectives at the beginning of each course.	1	2	3	4	5	<u>F67</u>
60. The class is made up of individuals who do not know each other well.	1	2	3	4	5	<u>F68</u>
61. The expression of strong personal belief or conviction is pretty rare around here.	1	2	3	4	5	<u>F69</u>
62. Students are so pre-occupied with their dental studies that they rarely concern themselves with anything else in social and informal discussion groups.	1	2	3	4	5	<u>F70</u>

63. Counselling and guidance services are really personal, considerate and extensive.

1 2 3 4 5

F71

64. Most students co-operate well with other class members.

1 2 3 4 5

F72

65. Students are encouraged to take an active part in social reforms or political programs.

1 2 3 4 5

F73

66. Clinical teachers are doing a good job correlating the basic science courses with clinical practice.

1 2 3 4 5

F74

67. The basic science teachers are doing a good job correlating the basic science courses with clinical practice.

1 2 3 4 5

F75

68. There is too much emphasis on the biological sciences.

1 2 3 4 5

F76

69. There should be more emphasis on the application of the basic sciences in Dentistry.

1 2 3 4 5

F77

70. In dental school, students learn to think rather than memorize.

1 2 3 4 5

F78

48. Comments:

APPENDIX C.ITEMS UTILIZED IN CONSTRUCTION OF THE DEPENDENT
VARIABLE

(STUDENTS AND FACULTY PROFESSIONAL ORIENTATIONS)

ITEMQUESTION

How well do you PERSONALLY think the following phrases* describe the dental profession as you now see it?

1. Provides a vital service for any community.
2. It is secure and lucrative.
3. Which requires higher intelligence than most other professions.
4. In which fees are disproportionately high for usual services given.
5. Which is a specialty of medicine.
6. Where obtaining of the services is in most instances a painful process.
7. With high ethical standards.
8. In which the skills required are not too complex or difficult to learn.
9. Having higher prestige than all other professions but medicine.
10. Requiring considerably more difficult training than most other professions.

In your opinion, which of the following characteristics** are important to have in order to be a GOOD dentist?

11. Dignified appearance and mannerisms.
12. Good business sense.
13. Ability to handle people.
14. Interest in writing professional articles.
15. Scientific curiosity.
16. High ethical standards.
17. Recognition of one's own limitations.
18. Good manual dexterity.

*Responses to items 1-10 were coded (1)Excellent description (2) Good description (3)Fair description (4)Poor description

**Responses to items 11-25 were coded (1)Very important (2)Moderately important (3)Slightly important (4)Not important

ITEMQUESTION

- 19. Outgoing and extroverted personality.
- 20. High intellectual ability.
- 21. Emotional stability.
- 22. Good technical skills.
- 23. Strong dedication to dentistry.
- 24. Skillful management of time.
- 25. Good research ability.
- 26. Getting real enjoyment out of dentistry.

For the following, please indicate the extent to which you agree or disagree by circling ONE number on the scale provided*

- 27. A public dental program should operate as a closely integrated part of general health services.
- 28. It is important that dental schools teach students about the oral health habits of families and communities.
- 29. Dentists should not be too involved with what their patients feel about dental care and how they feel about coming for treatment; they should mainly be concerned with fixing teeth.
- 30. Dentistry is a suitable profession for a woman.
- 31. If the government pays the dental bills for the patient, it takes away the responsibility of the patient for his own oral health.
- 32. There is not much need for dentists to know what health services are provided by other health professions and agencies for the public.
- 33. Services provided by dentists and their staffs to individual patients should receive the most concern in a public health program.
- 34. Most of the money and energy of a public dental program should be directed toward the encouragement of actions people themselves can take for good dental health. (e.g. oral hygiene, good eating habits)

*Items 27 to 50 were coded (1) Strongly agree (4) Strongly disagree.

B

<u>ITEM</u>	<u>QUESTION</u>
35.	All health services, including dentistry, should be provided as a right and not as a privilege of every person.
36.	It is an individual's responsibility to arrange and pay for his own health services.
37.	Every dentist should employ at least one dental hygienist.
38.	Dentists should accept opportunities to speak to parent-teacher groups about fluoridation.
39.	A dentist is autonomous and has no responsibility to the other health professions.
40.	It is a dentist's responsibility to offer to serve on public health organizations such as the Board of Health.
41.	Dentists should take an active part in community health and welfare organizations which are not specifically concerned with dental health, as part of their community responsibility.
42.	Community activities and programs which are not specifically concerned with dentistry or with the health professions are not the concern of the dentist.
43.	The permanent duties of the dental hygienist should be extended to include a wider range of intra-oral operations.
44.	It is part of the dentist's responsibility to his profession to write articles for its professional journals.
45.	Dental mechanics should be permitted to deal directly with the public.
46.	Dental treatment should be provided at the public expense for all children in our society.
47.	People do not seek dental treatment because they are afraid of dentists.
48.	Most people do not get adequate dental care because they cannot afford to pay the dentist.
49.	More time should be spent in dental school learning about the social origins of the profession, its code of ethics, and its relationship to society.
50.	Courses in social or community dentistry are boring and not helpful.

APPENDIX DITEM LOADINGS AND A SPECIFICATION
OF FACTORS

ITEM LOADINGS FOR THE 5 FACTORS
USED IN THE MEASUREMENT OF

TRADITIONAL MODERN PROFESSIONAL ORIENTATION

	FACTOR 1 (BUSINESS ORIENTATION)		FACTOR 2 (INTELLECTUAL ORIENTATION)		FACTOR 3 (SOCIAL ORIENTATION)		FACTOR 4 (COMMUNITY ORIENTATION)		FACTOR 5 (TECHNICAL OR MANUAL SKILLS ORIENTATION)	
	STUDENTS	FACULTY	STUDENTS	FACULTY	STUDENTS	FACULTY	STUDENTS	FACULTY	STUDENTS	FACULTY
.15		-.00	.02	.00	.27	-.07	.09	.20	.08	.18
.14		-.05	-.13	-.15	.02	.20	.02	.09	.00	.03
.05		.11	.04	.05	-.04	-.10	.04	.01	.00	.01
-.05		-.09	.02	-.07	.15	.22	.04	-.00	-.00	-.10
.03		-.02	.06	.08	.03	.06	.03	.00	.03	.09
-.01		-.00	.04	.09	.00	.03	-.00	-.04	.07	.01
.09		.05	.02	-.03	-.10	-.03	-.03	.13	.09	.06
.04		.02	-.02	.00	-.05	.03	.00	.08	-.10	-.01
.11		.06	-.01	.00	-.04	-.02	.05	.04	-.04	-.05
.04		.04	.00	.04	-.06	-.06	-.00	-.02	.04	.06
.41*		.42*	.09	.09	-.15	-.08	-.03*	.03	.02	.08
.61*		.64*	-.00	-.02	-.19	-.05	.03	.00	-.01	-.07
.45*		.41*	-.00	-.00	.00	-.07	.08	-.05	.00	.06
.08		.11	.71*	.72*	.00	.07	.14	-.02	-.00	-.02
.08		-.04	.62*	.53*	.09	.01	.10	.06	.08	.01
.32		.08	.03	.03	-.06	-.04	-.01	.10	.03	.01
.34		.07	.06	.05	.11	.07	.08	.02	.19	.01
.13		.17	.05	.04	-.00	.00	-.00	-.02	.64*	.69*
.25		.36	.22	.20	.09	-.01	.04	-.01	.17	.19
.23		.11	.34*	.40*	.04	-.10	.00	-.02	.20	.15

ITEM LOADINGS FOR THE 5 FACTORS (CONTINUED)

ITEM	FACTOR 1		FACTOR 2		-2- FACTOR 3		FACTOR 4		FACTOR 5	
	STUDENTS	FACULTY	STUDENTS	FACULTY	STUDENTS	FACULTY	STUDENTS	FACULTY	STUDENTS	FACULTY
21	.43*	.38*	.11	.12	-.00	-.17	.02	.03	.22	.16
22	.16	.11	.04	.05	.01	-.01	.03	-.07	.76*	-.76*
23	.31	.09	.20	.22	.05	-.15	.06	.10	.23	.30
24	.40*	.49*	.08	.11	-.09	-.02	.11	.06	.18	.21
25	.05	.10	.75*	.69*	.02	.07	.07	.01	.09	.09
26	.31	.18	.14	.20	.08	-.05	.03	.03	.17	.06
27	.00	.02	.02	.08	.28	.19	.20	.14	.02	.01
28	.02	-.00	.06	.08	.19	.01	.21	.21	.11	.15
29	-.03	.00	-.04	.12	-.18	.00	-.20	-.09	.03	.06
30	-.02	-.07	.03	.01	.14	.24	.05	.07	-.05	-.34
31	.09	.14	-.01	.03	-.41*	-.50*	.07	-.01	.01	.00
32	-.04	-.13	.04	-.03	-.10	.00	-.20	-.13	-.02	.32
33	.00	.11	-.04	-.02	.06	.07	.04	-.02	.02	.02
34	.05	.11	-.00	.01	.01	-.25	.22	.02	.04	.08
35	-.03	-.01	.08	.08	.50*	.52*	.07	.11	.03	.04
36	.08	.17	-.00	.04	-.57*	-.62*	-.05	.06	.03	.07
37	.03	.05	.03	.11	.01	.05	.28	.08	-.00	.02
38	.07	-.02	.09	-.02	.09	.03	.47*	.38	.06	.09
39	-.09	.01	.01	.03	-.10	-.05	-.11	-.07	-.02	.00
40	.00	.02	.14	.04	.06	.09	.55*	.62*	.00	-.02
41	.05	.09	.16	.10	.07	.08	.59*	.71*	.02	-.02
42	-.00	.05	-.06	.01	-.04	.04	-.31*	.36	-.06	.02
43	.08	-.01	-.04	.04	.08	.10	.37*	.07	-.10	-.07
44	.03	.04	.46*	.49	-.02	.02	.31*	.23	-.04	.00

ITEM LOADINGS FOR THE 5 FACTORS

(CONTINUED)

-3-

ITEM	FACTOR 1		FACTOR 2		FACTOR 3		FACTOR 4		FACTOR 5	
	STUDENTS	FACULTY	STUDENTS	FACULTY	STUDENTS	FACULTY	STUDENTS	FACULTY	STUDENTS	FACULTY
45	-.16	.12	.01	-.04	.02	.27	-.03	-.08	-.02	-.02
46	.01	.13	.01	-.03	.56*	.53*	.18	.07	.00	-.01
47	.09	.08	-.08	.01	.00	.00	.05	-.06	.02	-.04
48	-.01	-.00	-.03	.15	.37	.45	.08	-.03	.06	.04
49	.05	.02	.04	-.05	.10	-.01	.14	.27*	.07	-.06
50	.10	.08	-.08	-.10	-.11	-.00	-.17	-.24	-.06	.07

APPENDIX E

ADJUSTMENTS IN THE MEASUREMENT OF FACULTY PROFESSIONAL
ORIENTATION DUE TO DIFFERENCES IN SAMPLE
SIZES FOR SUBPOPULATIONS

SUBPOPULATION WEIGHTS

WEIGHT FACTOR

University of British Columbia

Full Time Non Clinical	1.3
Part Time Non Clinical	1.0
Full Time Clinical	1.0
Part Time Clinical	2.0

University of Alberta

Full Time Non Clinical	1.0
Part Time Non Clinical	1.0
Full Time Clinical	1.3
Part Time Clinical	2.0

University of Saskatchewan

Full Time Non Clinical	1.0
Part Time Non Clinical	1.0
Full Time Clinical	1.0
Part Time Clinical	1.0

University of Manitoba

Full Time Non Clinical	2.0
Part Time Non Clinical	2.5
Full Time Clinical	1.5
Part Time Clinical	2.0

University of Western Ontario

Full Time Non Clinical	1.0
Part Time Non Clinical	1.3
Full Time Clinical	1.5
Part Time Clinical	2.0

University of Toronto

Full Time Non Clinical	1.0
Part Time Non Clinical	1.2
Full Time Clinical	1.0
Part Time Clinical	1.3

McGill University

Full Time Non Clinical	3.0
Part Time Non Clinical	1.8
Full Time Clinical	2.0
Part Time Clinical	2.0

University of Montreal

Full Time Non Clinical	2.0
Part Time Non Clinical	2.0
Full Time Clinical	2.5
Part Time Clinical	2.5

Dalhousie University

Full Time Non Clinical	1.0
Part Time Non Clinical	1.0
Full Time Clinical	1.0
Part Time Clinical	1.0

APPENDIX F

ITEMS USED IN THE MEASUREMENT OF STUDENTS' PERCEPTION OF FACULTY SUPPORTIVENESS

<u>Item</u>	<u>Question</u>
	To what extent do you think the instructors you have in courses here have the following characteristics?
1.	An ability to communicate and give clear explanations.
2.	Treating dental students more as 'young dentists' than as students.
3.	Exhibition of high competence and knowledge in course subject matter.
4.	Skill in relating course subject matter to specific dental problems and work.
5.	A sympathetic attitude toward student problems with course material.
6.	Show a willingness to discuss the personal problems of students with them in out-of-class meetings.

1. Items 1 to 6 were coded: (1) Practically all of them (2) A majority of them (3) A Minority of them (4) Practically none of them.

END

FIN