

INFLUENCE, EMPHASIS, REFERENCE
GROUP ORIENTATION AND
COMMUNICATION WITHIN THE
AUTONOMOUS UNIVERSITY DEPARTMENT

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ABSTRACT

INFLUENCE, EMPHASIS, REFERENCE GROUP ORIENTATION AND COMMUNICATION WITHIN THE AUTONOMOUS UNIVERSITY DEPARTMENT

By

Donald James Reichard

Problem. The purpose of this study was to investigate the manner and conditions under which departments and individuals within departments characterized by high, medium, and low degrees of perceived autonomy differed in regard to: (1) characteristics such as Cartter report rating, the percentage of faculty members in a department holding joint appointments, and the percentage of faculty members in a given department noting one or more problems classified by source as internal to or external to the department; (2) the influence in departmental affairs of such principle actors within the department as the department chairman, the departmental faculty as a whole, and individual faculty members; (3) the emphasis actually placed upon such primary departmental goals as undergraduate instruction, graduate instruction, and basic research; (4)

the reference group orientation of departmental faculty to the university, the department, or the discipline; and (5) the degree to which discussion of departmental affairs took place between individual members of a department and the department chairman, chairmen of special departmental committees, departmental faculty and graduate students, the dean, university administrators, and faculty or chairmen of other departments or institutes.

Analysis. Departmental autonomy was defined as being inversely related to the combined perceived influence of the dean and university administrators in departmental affairs. Data were collected from 1,319 respondents from a total of ninety-seven departments of English, history, chemistry, mathematics, psychology, electrical engineering, and management in fifteen universities of diverse backgrounds selected from a national sample. Departmental autonomy was regarded as an independent variable. Employing the process of elaboration, twenty-four test factors were introduced as control variables in the chi square analysis of the relationships between departmental autonomy and the individual dependent variables. One-way and repeated measures analyses of variance as well as Spearman rank order correlations were also employed in the analysis of data.

Findings. Four of the hypotheses were supported including those which hypothesized (1) an inverse relationship

between the degree of departmental autonomy and the influence of the department chairman as well as direct relationships between the degree of departmental autonomy and (2) the influence of the departmental faculty as a whole, (3) emphasis upon graduate instruction, and (4) emphasis upon basic research. Although the remaining twelve hypothesized overall relationships between the degree of departmental autonomy and individual dependent variables were not supported by the data, a number of conditions were specified in which each of the hypothesized relationships did appear to hold true.

In addition, the perception of the influence of individual faculty members was found to be significantly lower in departments of low rather than medium or high autonomy. The combined amount of internal discussion of departmental affairs with the departmental faculty as a whole, the department chairman, chairmen of special departmental committees, and graduate students was also significantly lower in departments characterized by a low rather than a medium or high degree of autonomy. All of the significant relationships were modified to some extent, however, when the twenty-four control variables were introduced into the analysis.

An attempt was made to describe a number of characteristics associated with a medium degree of departmental autonomy which might be regarded as desirable outcomes for

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the university. Further research into the nature of problems associated with excessive degrees of departmental autonomy was recommended which would incorporate financial characteristics of the department into the definition of departmental autonomy.

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UNIVERSITY DEPARTMENT

By

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CHAPTER I

INTRODUCTION AND STATEMENT OF THE PROBLEM

Introduction

The literature of higher education is replete with widely varied organizational conceptions of the university. Litchfield and Kerr have described the awesome size and lack of unity inherent in the multiversity composed of a federation of interests.¹ On the other hand, Millett sees the actions within the academic community as more convergent than divergent.² In a more humorous vein, Monson³ has likened the university to a dispensing machine, a zoo, or Mammoth Cave while Moran has summarized some of the existing conceptions of a university and urged that

¹Edward H. Litchfield, "Organization in Large American Universities: The Faculties," Journal of Higher Education, XXX (October, 1959), 353-364; Also Edward H. Litchfield, "Organization in Large American Universities: The Administration," Journal of Higher Education, XXX (December, 1959), 491-503; and Clark Kerr, The Uses of the University (Cambridge, Massachusetts: Harvard University Press, 1964).

²John D. Millett, The Academic Community (New York: McGraw-Hill Book Company, Inc., 1962).

³Charles H. Monson, Jr., "Metaphors for the University," Educational Record, LII (Winter, 1967), 22-29.

comprehensive investigation of the university be made in order to determine "what kind of an organization the modern university actually is."⁴

Despite the exhortations to study the university as an organization, March's Handbook on Organizations omits completely a discussion of research findings focusing upon the university.⁵ It is thus not surprising to find a review of empirical research on the university department to be both brief and widely scattered in focus.⁶ The university department rather than the college or university as a whole has become the primary organizational unit in which the individual faculty member functions. The president of a university who could at one time set educational policy, obtain outside funds, and hire faculty by himself has been joined by professors who can do likewise. Thus, particularly since World War II when federal funds for research became more readily available to the university, university expansion has been in the hands of individual entrepreneurs

⁴William E. Moran, "The Study of University Organizations," Journal of Higher Education, XXXIX (March, 1968), 144-151.

⁵James G. March, Handbook of Organizations (Chicago: Rand McNally and Company, 1965).

⁶Paul L. Dressel, F. Craig Johnson, and Philip M. Marcus, The Confidence Crisis (San Francisco: Jossey-Bass, 1970), pp. 241-48.

with little or no responsibility for coordinating their scholarly endeavors with those of the university or, at times, even their own department.

The social organization of the campus, according to Clark, has moved from a unitary to a federal structure, from single to multiple value systems, from non-professional to professional work, and from consensual to bureaucratic coordination. Even though the elements of bureaucracy in higher education are present, their influence is often overestimated in the light of many faculty members' conditional loyalty to the institution as well as their resistance to rules, standards and/or supervision.⁷

Universities tend to adapt their organizational structure to the needs of professional staff members rather than requiring their faculty to adapt to its structure. The all-powerful influence of the "invisible hand" attributed to the administrator is often much more apparent to the faculty than to the administrator himself. Limited in his ability to anticipate the autonomous actions of the faculty in various departments in obtaining funds for new centers, programs, or institutes, the administrator finds himself hoping and praying that somewhere there is an

⁷Burton R. Clark, "Organizational Adaptation to Professionals," in Professionalization edited by Howard M. Vollmer and Donald L. Mills (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1966), p. 284.

"invisible hand" that can bring order to a complicated system.

The problem encountered by the university is one faced by any organization employing professional staff. It is one of recognizing the professional autonomy of the individual faculty member while, at the same time, attempting to integrate and coordinate his activities within the context of the organizational environment. When professional orientation gives way to organizational demands, as Kornhauser has noted with reference to industrial research operations, creativity suffers.⁸ On the other hand when the organizational orientation gives in to professional demands, professional expertise is not utilized in a manner which takes into account the goals or resources of the employing institution.

The ideal situation is probably one in which the organization does not wholly absorb professionals, nor do professionals wholly absorb the organization. The striving for such an equilibrium should have a favorable outcome for the university in that the tension between autonomy and the integration of professional groups, as Kornhauser suggests, may well tend to bring about a more effective

⁸William Kornhauser, Scientists in Industry (Berkeley: University of California Press, 1963), p. 157.

structure than is attained when autonomy and integration are isolated from one another or when one absorbs the other.⁹

Need for Study

So little research has been done on how colleges and universities are organized and administered that it is fair to say, in fact, that the field has not been touched.¹⁰ . . . T. R. McConnell

McConnell notes further than a conceptual framework is lacking which aids one in thinking systematically about college and university organization and in formulating a set of hypotheses for investigation. He thus indicates a need (due to the undeveloped state of the art) for studies which are descriptive and analytical rather than evaluative or experimental.

In the same publication, Anderson attempted to relate the problems of higher education to the sociological literature in regard to complex organizations. In so doing he described the concepts of bureaucracy, collegiality, and community and how these concepts might be applicable

⁹Ibid., p. 197.

¹⁰T. R. McConnell, "Needed Research in College and University Organization and Administration," in The Study of Academic Administration, ed. by Terry F. Lunsford (Boulder, Colorado: Western Interstate Commission for Higher Education, 1963), p. 113.

to American colleges and universities.¹¹ Anderson did not state specific hypotheses to be investigated as did McConnell. McConnell's hypotheses were, however, of much too broad a scope to be applicable to this study.

Bolman was more specific in his recommendations for needed research in the administration of higher education.¹² Among the areas he recommended for investigation were patterns of organization and educational aims, inflexibilities in departmental and collegiate organization, power perceptions and preferences, delineation of communication problems, and the phenomenon of dichotomy between administration and faculty.

A fourth observer of the higher education scene who stated some general areas for further research was Moran.¹³ Moran's article is notable for its description of various conceptions of the university offered by such as Millett, Litchfield, and Kerr. It, too, however, fails to state specific hypotheses to be investigated in regard to departmental organization or autonomy.

¹¹G. Lester Anderson, "The Organizational Character of American Colleges and Universities," in The Study of Academic Administration, ed. by Terry F. Lunsford (Boulder, Colorado: Western Interstate Commission for Higher Education, 1963), pp. 1-19.

¹²Frederick deW. Bolman, "Needed Research in Administration of Higher Education," Educational Record, XLVI (Spring, 1965), pp. 166-76.

¹³Moran, op. cit.

Only when we turn to the broad-scale comparative study of complex organizations as recommended, for example, by Blau and Scott, do we begin to acquire a conceptual framework which enables one to study the processes common to all organizations.¹⁴ A first step is developing a conception of institutional types and the problems encountered by such organizations. Thus we find the university classified, in respect to its teaching function, primarily as a service institution. As such, it is faced with the conflict between professional service to clients and administrative procedures. Service suffers if the professional staff members become primarily concerned with furthering their own careers. In this type of organization, the individual being served is generally regarded as not qualified to judge what is best for him and thus becomes vulnerable to exploitation.

Similarly, classified on the basis of cui bono, or who benefits, as recommended by Blau and Scott, the university is classified as a commonweal organization in regard to its research function. Supposedly, the public at large benefits in this type of organization. A principle problem is that of assuring external democratic control so that the public may have the means to control

¹⁴Peter M. Blau and W. Richard Scott, Formal Organizations: A Comparative Approach (San Francisco: Chandler Publishing Company, 1962).

the ends served by the organization. Also of great concern to this type of organization is encouraging the creativity of its employees.

The fact that the university's functions are so broad that it cannot be classified solely by type as falling into any one particular category makes it all the more vital that the university department, which incorporates both the research function of the commonweal organization and the teaching function found in service organizations, should be studied with reference to the influence, emphasis, reference group and communication processes common to all organizations. In this regard a recent volume based on correlational data, and entitled The Confidence Crisis: An Analysis of University Departments, by Dressel, Johnson, and Marcus, has provided a valuable description and analysis of departmental operations.¹⁵

Problem and Purpose

This study represents an extension of the earlier study by Dressel, Johnson, and Marcus, using as a data base the same data collected in conjunction with the Esso Departmental Study Project which led to the publication of The Confidence Crisis. A prominent thesis of this volume was that university departments are out of control for a

¹⁵Dressel, Johnson, and Marcus, op. cit.

number of reasons including excessive concern for attracting outside research support, the extra institutional orientation of both faculty members and departmental goals, as well as outright resistance to the coordination of departmental activities by elements external to the department.

Despite the generally recognized existence of autonomous university departments, however, there have been no investigations to determine how departments and individuals within departments with varying degrees of perceived autonomy differ in regard to patterns of influence, emphasis, communication, reference group orientation, or such characteristics as size, source or amount of support and Cartter report rating of the department.¹⁶

Perhaps just as important as the lack of substantive information in regard to the problem just noted is the lack of methodological sophistication so common to much of the survey research conducted in education. In this regard, Trow notes that "The bulk of survey research in education has been little more than a matter of asking some people some questions and reporting the distribution of their responses."¹⁷ If survey research is to move from

¹⁶Allan M. Cartter, An Assessment of Quality in Graduate Education (Washington, D.C.: American Council on Education, 1966).

¹⁷Martin Trow, "Survey Research and Education," in Survey Research in the Social Sciences, ed. by Charles Y. Glock (New York: Russell Sage Foundation, 1967), p. 319.

a description of relationships to an explanation of relationships, it is necessary to specify the conditions which either maximize or minimize a relationship. Only then may survey research move toward a probable explanation of causal relationships.

Therefore, in light of the lack of research and/or methodological deficiencies in current research, it is the purpose of this study to investigate the manner and conditions under which departments and individuals within departments with varying degrees of perceived autonomy differ in regard to:

1. Characteristics such as (a) Cartter report rating, (b) the percentage of faculty members in a department holding joint appointments, the percentage of faculty members in a given department noting one or more problem classified by source as (c) internal to (controllable by) or (d) external to (not controllable) by, the department.

2. The influence in departmental affairs of such principle actors within the department as (a) the department chairman, (b) the departmental faculty as a whole, and (c) the individual faculty member.

3. The emphasis actually placed upon such primary departmental goals as (a) undergraduate instruction, (b) graduate instruction, and (c) basic research.

4. The reference group orientation of departmental faculty to (a) the university, (b) the department, or (c) the discipline.

5. The degree to which communication takes place between individual members of a department and (a) the entire university, (b) persons external to the department both above (deans or university administrators) and outside of the department (chairman or faculty in other departments), and (c) persons internal to the department (department chairman, chairmen of special departmental committees, departmental faculty and graduate students).

As previously noted, the data for this study were collected in conjunction with the Esso Departmental Study Project in which data were gathered from 1,319 faculty members in departments of English, history, chemistry, mathematics, electrical engineering, and management in fifteen universities. The findings from the Departmental Study Project reported in The Confidence Crisis were based upon the analysis of ninety-three variables constructed from a faculty questionnaire and information supplied from the departmental records of ninety-seven departments included in this study.

This research seeks to determine the correlates of departmental autonomy and the conditions under which significant relationships exist between the degree of departmental autonomy, newly created variables, and selected

variables found to be important in departmental operations. Seventeen additional variables were created. In the process, departmental autonomy was redefined as being inversely related to the combined influence of the dean and university administration in departmental affairs. This study focuses upon thirty-one variables. Nine of these variables, including departmental autonomy, were newly created. Findings relative to the eight individual communication variables were reported in The Confidence Crisis.

The remaining fourteen variables were included because analysis in previously reported research showed they were associated with differential response patterns in regard to the nature, source, and resolution of departmental problems and the perception of departmental autonomy.¹⁸

The review of related literature which follows has as a primary aim the reporting of research findings which may serve as probable sources for the hypotheses to be stated at the beginning of Chapter III.

¹⁸Dressel, Johnson, and Marcus, op. cit., pp. 98, 110.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

Citation of the results of a survey of holdings of a major university library system (Cornell) in the general area of higher education serves to point out the difficulties this writer had in reviewing literature directly applicable to the functions of autonomous university departments. At the conclusion of her review, Olive noted:

In the thorough bibliographic search undertaken here, it finally became apparent that failure to find published research was not due to difficulties in locating and identifying the material, but to the fact that few research studies exist.¹

The above conclusion, coupled with the previously noted fact that March's Handbook of Organizations omits completely any reference to research focusing upon the university as an organization makes the "universe" of literature rather limited. The situation is aided somewhat by the Encyclopedia of Educational Research: Fourth Edition which contains pertinent summary articles authored

¹Betsy Ann Olive, "The Administration of Higher Education: A Bibliographical Survey," Administrative Science Quarterly, XI (March, 1967), 671-77.

by Millett on "College and University Administration," Lorimer and Dressel on "Faculty Characteristics--College and University," and Fattu on "Research Organizations."²

When, however, a search for literature focusing specifically upon the university department is made the available stock is lessened considerably. Further attempts to limit the search to literature dealing with the manner in which autonomous university departments operate would virtually eliminate the need for this chapter.

On the other hand, if one were to attempt to review the literature with reference to the concepts of bureaucratization, socialization, professionalization or the reference group orientations of various actors within a complex organization, all of which are related to this study, the volume of literature would be prohibitive. Therefore, an attempt has been made to cite only selected literature which:

1. bears directly on the consequences or problems encountered in the operation of autonomous university departments,
2. helps to define the concept of autonomy, or

²John D. Millett, "College and University Administration," pp. 161-69; Margaret F. Lorimer and Paul L. Dressel, "Faculty Characteristics--College and University," pp. 488-494; and Nicholas A. Fattu, "Research Organizations," pp. 1152-1158 in Encyclopedia of Educational Research: Fourth Edition, ed. by Robert L. Ebel (The Mac Millan Company, 1969).

3. reports research findings related to the influence, emphasis, reference group orientations or communication patterns of professors or scientists within a university or laboratory setting which may be examined in terms of their probable relationship to departmental autonomy.

Departmental Autonomy

A number of viewpoints have been put forth as to the desirability of departmentalization. Regardless of its utility or effectiveness, however, Demareth, Stephens, and Taylor, have indicated that the academic department is to the university, what the cell is to the body.³ Some doubt may then be cast on the health of the organism, as the authors state that the department is often an obstacle to innovation wherein faculty of similar interests cling together in order to resist intrusions from outsiders.

This tendency toward stagnation has been documented by Hefferlin who examined the manner in which changes came about in the educational programs of colleges and universities. Approximately forty-one per cent of his respondents indicated that faculty or departments represented the greatest obstacle to academic change. Eighteen per cent indicated general inertia or conservatism as the

³Nicholas J. Demareth, Robert W. Stephens, and R. Robb Taylor, Power, Presidents and Professors (New York: Basic Books, 1967), pp. 181-88.

main obstacle to change while lack of funds or resources and administration were cited by sixteen and nine per cent of the respondents, respectively.⁴

On the other hand, Andersen takes a more charitable view toward the department and has argued that the university department has been and is likely to remain a viable force in American education.⁵ This contention is questioned by Dressel and Reichard who traced the history of departmental organization and point to some of the dysfunctions or needs not fulfilled by such a structure.⁶

Clark sees the department as the center of entrepreneurial activity in seeking funds and states that American universities are more innovative than European universities, due in part to their openness to external fund sources. He notes that this openness to external fund sources also encourages competition for funds in lieu of a guaranteed annual budget and results in decentralized decision making, primarily at the departmental level.⁷

⁴JB Lon Hefferlin, The Dynamics of Academic Reform (San Francisco: Jossey-Bass Inc., 1969), p. 100.

⁵Kay J. Andersen, "The Ambivalent Department," Educational Record, IL (Spring, 1968), 206-12.

⁶Paul L. Dressel and Donald J. Reichard, "The University Department: Retrospect and Prospect," Journal of Higher Education, XLI (May, 1970), 387-402.

⁷Terry Clark, "Institutionalization of Innovations in Higher Education," Administrative Science Quarterly, XIII (June, 1968), 16-21.

Dressel, Johnson, and Marcus have described this pattern of competition among departments for university funds as a "confidence game" in which individual departments attempt to acquire resources and the freedom to use them without external interference.⁸ The same authors suggested in a volume entitled, The Confidence Crisis: An Analysis of University Departments, that a possible effect of departmental autonomy might be that it leads to a gradual commitment of university resources rather than the development of a rational plan for the university as a whole. Open-ended responses to this statement were almost evenly split between those who agreed and disagreed that this situation existed at their own institutions. Approximately forty-six per cent of the respondents felt that something could or should be done to correct autonomy while forty-two per cent maintained that autonomy should not be corrected.

Among those who felt that something should be done to correct autonomy, there was much disagreement as to how change was to be brought about. Approximately fifty per cent of the responses recommended better planning or better administrative leadership. However, recommendations for more faculty involvement in decision making, better

⁸Paul L. Dressel, F. Craig Johnson, and Philip M. Marcus, "Departmental Operations: The Confidence Game," Educational Record, L (Summer, 1969), 274-78.

cooperation among departments in planning, or flexible adherence to a plan, constituted thirty-seven per cent of the responses and seemingly indicated a distrust of administrative action.

Among faculty who urged that nothing be done to correct departmental autonomy, responses included statements to the effect that autonomy generally worked out well (48.8%), departments have a better knowledge of needs (21.3%), the administration's solution would be worse (15.3%), and rational planning was impossible (13.9%). All responses appeared to reflect administrative mistrust.⁹

The effects of the "confidence game" are such as to lead Dressel, Johnson and Marcus to conclude that:

The universities and the departments within them are out of control. Administrators and faculties too readily interpret their own aspirations as meeting or transcending the educational needs of the clientele which they serve. In seeking support to fulfill these aspirations, they engage in half-truths and reluctantly acquiesce to requests for data which are so selected, manipulated, and presented as to support their case. In the defense of administrators, it must be said that they are caught between the insatiable demands of departments and faculties more concerned with self-advancement than with service and a supporting clientele which often does not understand the university and therefore is capable, wittingly or unwittingly, of using the truth to impede or destroy its effectiveness. In most cases, too, presidents and vice-presidents do not know just what is going on in the colleges and departments, for these units also engage in half-truths and misrepresentations shrewdly calculated to attain their own ends.

⁹Paul L. Dressel, F. Craig Johnson, and Philip M. Marcus, The Confidence Crisis (San Francisco: Jossey-Bass Inc., 1970), pp. 108-09.

Departments and other units within the university must be brought under control so that their resources are allocated and used in accord with priorities set for the university by the university in cooperation with those who support it.¹⁰

Faculty Autonomy

Just as departmental autonomy is a group characteristic resulting in part from the complex organizational nature of the university, faculty autonomy is the result in part of the long-standing struggle of individuals for professional autonomy. This struggle for academic freedom has been well summarized by Beach who described the long-standing antagonisms between professional administrators and faculty members which led to the founding of the American Association of University Professors in 1915.¹¹

Indeed, administrators who complain that the faculty has no interest in the university as a whole might well blame such "captains of erudition" as Nicholas Murray Butler and William Rainey Harper who maintained tight personal control of their universities causing John Dewey, the first AAUP president, to argue "that professors being only human, lose interest in enterprises when they have no voice in the decisions which affect them."¹² The outcome,

¹⁰Ibid., p. 232.

¹¹Mark Beach, "Professional Versus Professorial Control of Higher Education," Educational Record, IL (Summer, 1968), 263-73.

¹²Ibid., p. 272.

Beach concluded, was that:

Each party to the construction of the university sought to mold the organization to its own cherished ends. As a result, the republic of learning provided by the new education threatened to become instead an anarchy of scholarship.¹³

If it did not produce anarchy, it did produce an Academic Revolution, or a rise to power of professional scholars and scientists described by Jencks and Riesman.¹⁴

Indeed, the faculty, individually and collectively have become such an influential power group that Kristol states "the beginning of wisdom in thinking about our universities, is to assume that the professors are a class with a vested interest in, and an implicit ideological commitment to the status quo, broadly defined, and that reform will have to be imposed on them as upon everyone else."¹⁵

On the other hand, in English universities, the faculty were always dominant. According to Ashby, "For seven hundred years we have believed that a university is not a corporation with employees, it is a society with members." The result is an academic life which Ashby

¹³Ibid., p. 273.

¹⁴Christopher Jencks and David Riesman, The Academic Revolution (New York: Doubleday and Company, Inc., 1968).

¹⁵Irwin Kristol, "A Different Way to Restructure the University," The New York Times Magazine, December 8, 1968, p. 50.

characterizes as being "anarchic, nomadic and schizophrenic" and in which, as in America, scholars "ask not what Professor X has done for Manchester, but what has Professor X done for Chemistry?"¹⁶

According to Clark, with reference to American institutions:

The role of faculty authority is shifting from protecting the right of the entire guild, the right of the collective faculty, to protecting the autonomy of the separate disciplines, and the autonomy of the individual faculty member. The university and the large college are fractured by expertness, not unified by it.¹⁷

When professionalism is combined with bureaucratization, a situation arises in which the individual faculty member must adapt to the impact of bureaucracy in terms of his own behavior. In this regard Page, in his article entitled, "Bureaucracy in Higher Education," borrowing heavily from Merton, described four ideal-type categories of adaptation which were employed by the academician. These four types of individuals were termed the ritualist, academic neurotic, robber baron, and academic rebel. Of these types the robber baron portrays many of the traits of the individuals who, it may be assumed, would

¹⁶Eric Ashby, "Anatomy of the Academic Life," Educational Record, IIL (Winter, 1967), 45-50.

¹⁷Burton R. Clark, "Organizational Adaptation to Professionals," in Professionalization, ed. by Howard M. Vollmer and Donald L. Mills (Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1966), pp. 288, 290-91.

participate in what Dressel, Johnson, and Marcus have termed the "confidence game":

The robber baron, like the ritualist, is well adapted to his bureaucratic surroundings. But his adaptation takes a completely different form; for, rather than glorifying the routines of collegiate life, rather than making ends of means, he will, when it serves his own ends best, ignore bureaucratic propriety altogether. The ability to by-pass prescribed methods, to avoid consultations or procedures called for by the institution's formal code, to cut red tape, demands enormous skills, the courage of one's convictions, and an intense desire to further one's own ends. The robber baron manifests precisely these qualities, in much the same way that his prototype in another realm --say, a Carnegie or a Rockefeller--reveals these traits. If the academic robber baron is to escape disgrace and is to remain within the collegiate enterprise, he must possess a highly realistic knowledge of the academic world, must recognize the functionally strategic relationships in and between the formal and informal structures, and must display manipulative ability.

Robber barons need not be the villains of history; sometimes they are heroes. And this is the case of the academic robber baron as well. If their ends correspond with, or are congenial to, the professed goals of the institution itself, the robber baron may, in fact, become a collegiate saint. Just as we forgive and "canonize" our Carnegies and Russel Sages, once they have made good on the grand scale (i.e., have conformed to and confirmed the culturally approved value of material success) and once they have endowed posterity with socially useful edifices, so do we exalt our academic robber barons when they have conformed to and confirmed the highest values of education.¹⁸

In addition to Page, Hall and Tittle examined the academic department in terms of its bureaucratic structure.

¹⁸Charles H. Page, "Bureaucracy and Higher Education," in Sociology of Education, ed. by Ronald M. Pavalko (Itasca, Illinois: F. E. Peacock Publishers, Inc., 1968), p. 463.

On an overall bureaucracy scale, using Guttman scaling, the authors ranked the academic department tenth in bureaucratization out of twenty-five varied types of organizations. The academic department was characterized as possessing such bureaucratic elements as impersonality of operations, division of labor, specificity of procedures and complexity of rules but was lacking in the elements of hierarchy of authority and technical competency as a criterion for hiring and promotion.¹⁹ The number of types of organizations included, the manner in which a single academic department may be generalized to represent all departments, and the admitted need on the part of the authors for conceptual clarification in regard to the elements of bureaucracy, however, all serve to urge restraint in the interpretation of these findings.

Autonomy

Autonomy is a term used in many varied contexts. It is often spoken of in regard to public institutions, usually demanding freedom from legislative control. Similarly it is often used in regard to individuals, generally professionals, whose expertise in a particular area warrants personal autonomy or freedom in conducting one's

¹⁹ Richard H. Hall and Charles R. Tittle, "A Note on Bureaucracy and its Correlates," The American Journal of Sociology, LXXII (November, 1966), 268-69.

business. In any case, autonomy may be defined in terms of behavior which is not controlled by an external agency. In conjunction with this study, autonomy is a group characteristic defined as being inversely related to the combined influence of the dean and university administration in departmental affairs which is perceived by a group or collectivity of individuals in a given department.

Whereas complex organizations are often viewed as all-powerful bureaucracies with rules and regulations governing all aspects of patterned behavior, Katz, with reference to the informal organization inherent in all organizations, maintains that "autonomy patterns are distinctly structured within complex organizations."²⁰ In a later volume, Katz notes that "the underlying theme of these studies is that a degree of independence exists within most formal arrangements," and that "One is inclined to think of autonomy as a separation from a social context, or as activity that isolates an individual from other persons. In contrast autonomy is here regarded as a force that binds people together."²¹ Katz indicates that

²⁰Fred E. Katz, "The School as a Complex Social Organization," in Sociology of Education, ed. by Ronald M. Pavalko (Itasca, Illinois: F. E. Peacock Publishers, Inc., 1968), p. 427.

²¹Fred E. Katz, Autonomy and Organization: The Limits of Social Control (New York: Random House, 1968), p. 4.

autonomy is specified for positions by internal and external roles, each of which are enacted within and outside of the organization.²²

Engel, in an article entitled, "Professional Autonomy and Bureaucratic Organization," found that bureaucracy was not necessarily inimical to the degree of autonomy perceived by professional physicians. Thus physicians working in privately owned organizations characterized by a moderate degree of bureaucracy perceived greater personal autonomy with respect to both clinical practice and research than did physicians working in governmentally associated organizations or as solo practitioners in settings which were characterized as having high and low degrees of bureaucracy, respectively. Engel concluded that a moderate degree of bureaucratization can be of great aid to professionals by supplying funds, equipment, technical personnel, and other physical facilities which enhance both his performance and his perception of professional autonomy.²³

Research reported by Kornhauser indicates that of the three primary settings for research--the university,

²²Katz, "The School as a Complex Social Organization," p. 428.

²³Gloria V. Engel, "Professional Autonomy and Bureaucratic Organization," Administrative Science Quarterly, XV (March, 1970), 12-21.

industry, and government, the university provides the greatest amount of freedom to pursue one's own research. To document this point, Kornhauser cited a study by Meltzer of seventy-five per cent of the physiologists in the United States. The study indicated that ninety per cent of the physiologists employed by universities, seventy-one per cent employed by government, and fifty per cent employed by industry reported "complete" or a "great deal" of freedom in choosing research problems.²⁴

Perhaps the most comprehensive examination of organizational features in relation to research productivity is Pelz and Andrews' volume entitled, Scientists in Organizations: Productive Climates for Research and Development.²⁵ The book was based upon the responses and performance evaluations of 611 professionals in five independent laboratories, 144 professors in seven departments within a university, and 526 scientists and engineers from five government laboratories. Of particular interest is the fact that the study dealt with the concept of autonomy as both a group (amount of coordination) and individual characteristic (freedom to pursue one's own choice of goals or

²⁴William Kornhauser, Scientists in Industry (Berkeley: University of California Press, 1963), p. 132.

²⁵Donald C. Pelz and Frank M. Andrews, Scientists in Organizations: Productive Climates for Research and Development (New York: John Wiley and Sons, 1966).

objectives). The authors, in regard to the amount of coordination most frequently associated with optimal performance, note that "in loosely coordinated settings, the most autonomous individuals did poorly--perhaps because they were isolated from stimulation."²⁶ As summarized by Fattu:

The more loosely coordinated a situation, the more essential it was for the individual to remain strongly motivated if he were to achieve. A fairly high level of autonomy was effective mainly in the middle range of coordination. In loose coordination, where members had considerable freedom, the most autonomous scientists were below average in performance. It was suggested that in loose settings the most autonomous scientists tended to withdraw from outer stimulation, thus weakening opportunity to improve their performance. In rigid situations, autonomous persons were inhibited. In middle-range situations high autonomy was accompanied by several strong motivations and stimulations, and the setting appeared to improve performance. In the loosest settings full autonomy seemed to encourage complacency rather than motivation and narrow specialization rather than breadth. Isolation was not a good climate for achievement.²⁷

In regard to the autonomy or individual freedom of the individual faculty member to pursue his own research goals or objectives, Pelz and Andrews asked if coordination was compatible with personal freedom. They concluded that "best performance occurred when both were present."²⁸ It appeared in development-oriented-laboratories that as a

²⁶ Ibid., p. 214.

²⁷ Fattu, op. cit., p. 1158.

²⁸ Pelz and Andrews, op. cit., p. 8.

number of such people as the individual Ph.D. level researcher's colleagues, immediate supervisor, higher level technical supervisors, subordinates, and others at various levels were influential in important decisions, performance increased in terms of the individual scientist's scientific contributions, usefulness to the organization, and the production of both papers and reports.²⁹ Thus the relationship between individual autonomy and productivity was curvilinear with productivity highest when autonomy within the organization and the autonomy of the individual were moderate.

Influence of Various Actors within the Department

A review of empirical literature on the department notes several studies which serve to describe the functions of various actors.³⁰ However, most of the literature fails to indicate the relative power of a number of individuals influential in the operations of a given department.

Hill and French examined the perceptions of the power of department chairmen held by professors in sixty-five departments within five state supported four-year colleges, and related them to the perceived productivity

²⁹ Ibid., pp. 11-12.

³⁰ Dressel, Johnson and Marcus, The Confidence Crisis, pp. 241-48.

and satisfaction of the departmental faculty. The authors infer that "it is the power of the chairman to speak effectively on behalf of the faculty that explains the positive association between the chairman's power and the satisfaction of professors."³¹ The power of the department chairman was correlated negatively with professional output in terms of publications but was positively related to perceived faculty productivity in terms of the college's own goals which for the most part, placed high emphasis upon teaching. More important, in regard to the interest of this study, however, was the finding that in terms of the relative control exercised by each level over all levels of authority, department chairmen were accorded less influence than professors and a lesser amount of influence than every other succeeding level of authority ranging from middle to higher administration and state governing boards.³²

Gross and Grambsch substantiated the findings of Hill and French in regard to the relative power of the faculty vis-a-vis the department chairman. Drawing upon the responses of some 7,224 faculty members and administrators in sixty-eight nondenominational universities,

³¹Winston W. Hill and Wendell L. French, "Perceptions of the Power of Departmental Chairmen by Professors," Administrative Science Quarterly, XI (March, 1967), 573.

³²Ibid., pp. 557-58.

Gross and Grambsch queried, "How much say do you believe persons in (various) positions have in affecting the major goals of the university?" Faculty members were found to have a slightly greater influence in the overall power structure of American universities than were department chairmen. Although the influence of department chairmen was less than that of all other actors within the university, it was distinctly more powerful than that of actors external to the university except for that of the regents.³³

Pelz and Andrews also investigated the relationship between the influence of the individual scientist and the degree of his autonomy. They concluded that scientists in organizations could "have high influence even though they might lack full autonomy or freedom to go their own way."³⁴ The overall conclusion was that "some scientists can be creative when completely self-determining; but in our sample they formed a small minority."³⁵ They noted further that "A few high-status Ph.D.s in research, possessing high influence were effective when no one else helped

³³ Edward Gross and Paul V. Grambsch, University Goals and Academic Power (Washington, D.C.: American Council on Education, 1968), pp. 76, 143.

³⁴ Pelz and Andrews, op. cit., p. 17.

³⁵ Ibid., p. 25.

decide their goals, but those with lower status or influence worked best when several others were included.³⁶

Emphasis

The sociological literature in regard to complex organizations contains a large body of material dealing with organizational goals. Much more limited, however, are the attempts to identify the variety of goals espoused by various elements within educational institutions. . . . Gross and Grambsch's University Goals and Academic Power provide the most comprehensive examination of this subject.³⁷ The authors compared the degree of emphasis which individual faculty members and administrators perceive to be placed upon forty-seven output and support goals with the amount of emphasis faculty and administrators feel should be placed upon such goals. In the analysis of their data, . . . Gross and Grambsch take into account the relationship between the goals which are or should be emphasized and such global characteristics as size, location, type of control, productivity, Cartter rating and graduate emphasis.

Although Gross and Grambsch's research focuses upon the responses of individual faculty members rather than the collective responses of individuals within a

³⁶ Ibid., p. 19.

³⁷ Gross and Grambsch, op. cit.

given department, a look at some of their findings is helpful in that such goals as carrying on pure research, encouraging graduate work and emphasizing undergraduate instruction are either the same or very closely related to the goals of emphasizing basic research, graduate instruction, and undergraduate instruction which are of concern to this study. In addition such goals as protecting academic freedom, rewarding faculty for contributions to their profession or institutions, developing pride in or faculty loyalty to the university, or letting the will of the faculty prevail, are closely related to the question of departmental autonomy or the individual autonomy of faculty members.

The ranks of related perceived and preferred goals of interest to this study were as follows:³⁸

<u>Goal</u>	<u>Perceived Rank</u>	<u>Preferred Rank</u>
Protect academic freedom	1	1
Carry on pure research	7	16
Encourage graduate work	18	27
Give faculty maximum opportunity to pursue careers	22	25
Reward for contribution to profession	26	21
Reward for contribution to institution	32	13
Develop pride in university	33	23
Let will of faculty prevail	36	24
Develop faculty loyalty to institution	42	29
Emphasize undergraduate instruction	44	44
Preserve institutional character	46	47

³⁸Ibid., pp. 28-29.

In general, student related goals, whether they pertained to intellectual or personal development, ranked extremely low as did goals which evidenced a desire for preservation of or orientation to the university as an organic whole. On the other hand, goals which had to do with professional advancement, faculty prerogative, and particularly, the preservation of academic freedom, received very high emphasis. Developing loyalty on the part of the faculty and staff to the university rather than only to their job or professions and making sure that salaries, teaching assignments, perquisites and privileges always reflected the contribution that the person involved is making to the functioning of the university all received less perceived emphasis than was preferred. Conversely, the goal of encouraging students to go into graduate work received much more emphasis than was felt should be given.³⁹

Large staff size was associated with a greater emphasis upon pure research and less emphasis upon developing pride in the university. However, the remaining global characteristics bore no significant relationship to the goals of special interest to this study.⁴⁰ In contrasting the preferred goals of the faculty and administrators, Gross and Grambsch found a surprisingly high

³⁹Ibid., pp. 34-35.

⁴⁰Ibid., p. 44.

amount of agreement between the two groups. Administrators generally, however, placed more emphasis than faculty members upon student development goals, and also placed greater emphasis upon basing rewards on the contribution that the person makes to the institution, developing faculty loyalty to the university, and developing pride in the university. Conversely, faculty tended to place a higher value than administrators on making sure that on all important issues (not only curriculum), the will of the faculty prevails and upon making the university a place in which faculty have a maximum opportunity to pursue their careers in a manner satisfactory to them by their own criteria.⁴¹

Reference Group Orientation

Reference group orientation may be inferred, in part, from communication with an extra-institutional group of colleagues owing allegiance to the same discipline. Therefore, it is difficult to view certain findings in regard to communication and reference group orientation as being mutually exclusive. Similarly, influence and reference group orientation are not mutually exclusive. Thus, Gouldner found that influence in college policy decisions at "Coop College" (Antioch) increased steadily as one

⁴¹Ibid., p. 103.

moved from a cosmopolitan to a local orientation, except in the case of extreme locals who exerted very little influence.⁴²

Kornhauser found that those whose career orientations were directed exclusively neither to the profession nor the organization, but were mixed, enjoyed the greatest influence. Thus the percentage of scientists who were regarded as possessing high influence was approximately equal for those with professional (55%) and organizational (53%) career orientations, while a high amount of influence was attributed to sixty-six per cent of the scientists whose orientations were mixed.⁴³

Glaser, in developing the concept of "The Local-Cosmopolitan Scientist" suggests that cosmopolitanism and localism may be seen as two dimensions of an individual's orientation which are activated at the opportune time and place depending on the organizational structure within which the scientist works.⁴⁴ When institutional goals were in accord with those of individual scientists who were highly motivated to advance knowledge, Glaser

⁴²Alvin W. Gouldner, "Cosmopolitans and Locals: Toward an Analysis of Latent Social Roles - I," Administrative Science Quarterly, II (December, 1957), 299.

⁴³Kornhauser, op. cit., p. 123.

⁴⁴Barney G. Glaser, "The Local-Cosmopolitan Scientist," American Journal of Sociology, LXIX (November, 1963), 257.

suggested that the organization would benefit in terms of the individual scientist's desire to fulfill the organization's scientific goals as well as its nonscientific goals. Thus, for example, a scientist would be willing to take time from research in order to aid in such nonscientific activities as staff recruitment because maintaining or improving the research staff would preserve the prestige and/or sources of support of the organization. Maintenance or improvement of the organization's personnel and or financial resources would, in turn, aid the scientist in fulfilling his scientific goals.⁴⁵ Caplow and McGee also acknowledged:

In a handful of great universities, where many of the departments believed to be the best in their fields are found, a merger of orientations is possible. There a man may simultaneously serve an institution and a discipline and identify with both. But tensions exist between the two orientations everywhere. It is worthy of note that the publication requirements in the highest ranking departments are the most rigid, so that the men they select have already met the requirements imposed by the discipline.⁴⁶

Several researchers have examined extra-departmental communication networks which have generally been regarded as indicators of a disciplinary orientation. Hagstrom, using Yule's Q, found a very high correlation

⁴⁵ Ibid., p. 256.

⁴⁶ Theodore Caplow and Reece J. McGee, The Academic Marketplace, Basic Books (New York: John Wiley and Sons, Inc., 1958), p. 85.

(.85) between extradepartmental communication with those in the same discipline and research productivity of academic scientists while the correlation between extradepartmental and intradepartmental communication (.54) was much lower.⁴⁷

Crane looked at the diffusion of agricultural innovations in order to examine the types of social ties existing among scientists who had published in a particular problem area. Analysis of sociometric connectedness revealed that a tie with one or more highly productive scientists brought other scientists of less productivity into a large network of influence and communication. The groups were not tightly knit enough or sufficiently closed to external influence however to constitute an elite group of mutually interacting and productive scientists within a research area which Price has referred to as an "invisible college."⁴⁸

Also related to a disciplinary orientation is the question of the loyalty of faculty members to their institutions. In this regard, Lewis noted that the problem of faculty loyalty is significant because of the tension between loyalty and expertise which is a central need of

⁴⁷Warren O. Hagstrom, The Scientific Community (New York: Basic Books, 1965), p. 50.

⁴⁸Diana Crane, "Social Structure in A Group of Scientists: A Test of the 'Invisible College' Hypothesis," American Sociological Review, XXXIV (June, 1969), 348.

institutions of higher learning. Professional prestige was found to be more powerful than university prestige in determining faculty loyalty. In summation, Lewis stated:

It is found that those with high institutional prestige and those with low professional prestige are more loyal than their counterparts, and that those with a combination of high institutional prestige and low professional prestige are the most loyal while those with low institutional prestige and higher professional prestige are the least loyal.⁴⁹

All of these findings suggest that reference group orientations, whether they are to the university, department, or discipline, are quite complex.

Communication

Communications within the university are rarely the subject of investigation. Hagstrom did, however, interview seventy-nine university scientists, and as previously noted, in applying Yule's Q, reported a correlation of .54 between intradepartmental and extradepartmental communication. Also, of interest were moderately high correlations between intradepartmental communication and participation in professional societies (.55) and the correlation between intradepartmental communication and the production of articles for publication (.42).⁵⁰

⁴⁹Lionel S. Lewis, "On Prestige and Loyalty of University Faculty," Administrative Science Quarterly, XI (March, 1967), 629.

⁵⁰Hagstrom, op. cit., p. 50.

The general conclusion reached by Pelz and Andrews after an extensive examination of communication patterns, primarily in independent or government research laboratories rather than a university setting, was that "effective scientists both sought and received more contact with colleagues."⁵¹ Scientists who were most productive either spent a large total amount of time communicating or spent brief periods of time talking with a number of individuals.⁵²

In an earlier publication, Pelz found that "highest performance is shown by those who, on the average, have daily contact with five colleagues possessing values dissimilar from their own."⁵³ Choosing colleagues with whom one had daily contact and who were dissimilar in terms of values and experiences was associated with high performance while low performance was common when contact was on a weekly basis. Conversely, weekly as opposed to daily contact with similar colleagues was associated with high performance. The opposite was true in regard to contact with the single most important colleague rather than a group of colleagues. Here, performance went up when one

⁵¹Pelz and Andrews, op. cit., p. 35.

⁵²Ibid., p. 49.

⁵³Donald C. Pelz, Motivation of the Engineering and Research Specialist, General Management Series, Number 186 (New York: American Management Association Inc., 1957), p. 37.

had daily contact with a single most important colleague having the same values while performance decreased when there was daily contact with one's colleagues who held opposing values.⁵⁴

Summary

This review of literature has been wide ranging, and has served to affirm Olive's conclusion that although much lip service is paid to the need for research on the administration of higher education, few research studies exist. Indeed, The Confidence Crisis by Dressel, Johnson, and Marcus, is the only comprehensive study of the university department which examines the issue of departmental autonomy and the influence, emphasis, reference group, and communication patterns which take place within it.

Discussions of the concept of autonomy as related to the manner in which professionals function in complex organizations have value in theory but research findings in this regard are reported primarily with reference to non-university settings. Pelz and Andrews as well as Engel have indicated that a medium degree of coordination or bureaucratization, respectively, may have optimum outcomes in terms of the performance of professionals in organizations. If a medium degree of autonomy may be

⁵⁴Ibid., pp. 39-42.

roughly equated with a medium degree of coordination or bureaucratization, and if the Cartter report may be interpreted as a rough criterion of performance, these findings may lead one to hypothesize that a medium degree of departmental autonomy may be most frequently associated with a favorable Cartter rating.

Hypotheses that the internal, external, and total amounts of communication would be highest in departments of medium autonomy would also stem in part from the high association Pelz and Andrews found between performance and the amount of communication with various elements within the organization. Thus, due to the perhaps unwarranted assumptions necessary in generalizing concepts, and the differences in settings, the findings of Engel, and Pelz and Andrews may or may not be either applicable or replicable within a university setting.

Much of the literature cited in regard to the influence, emphasis, reference group orientation, and communication patterns, even if obtained from university settings, generally has a slightly different focus from this study. Hill and French as well as Gross and Grambsch find the influence of the department chairman, in terms of determining university-wide goals, to be less influential than that of the collective faculty in a department. Whether this finding would hold in regard to departmental rather than university matters is questionable.

The department chairman is often referred to as the man in the middle between the dean and the departmental faculty. This would lead one to believe that when the dean and university administration were relatively influential, and therefore, the autonomy of the department was low, the chairman's influence would be relatively high. Similarly, when the influence of the dean and university administration are relatively low, and departmental autonomy is high, the influence of the chairman would be expected to be relatively low as the faculty, individually, and collectively should enjoy greater influence under this condition.

In regard to goals, Gross and Grambsch's examination of university-wide rather than departmental goals serves to point out the seeming contradiction between emphasis upon concern for or loyalty to the institution and the desire that rewards for faculty members should take into account the individual's contribution to the institution. Caplow and McGee as well as Glaser suggest, however, that there need be no conflict between institutional loyalty and a disciplinary reference orientation if the institution can provide the resources which allow the faculty member to pursue his own goals.

Crane and Hagstrom both document the extra-institutional communication patterns of academicians which would seemingly indicate a disciplinary reference group

orientation. Thus Crane's examination of the "invisible college" hypothesis and Hagstrom's examination of communication patterns with one's colleagues in the discipline lead one to hypothesize a direct relationship between a disciplinary orientation and the degree of departmental autonomy. Conversely, a low university orientation would appear to be logically associated with a low degree of departmental autonomy while a departmental orientation may represent a middle ground between the university and the discipline most commonly found in departments with a medium degree of autonomy. In any event, reference group orientations appear to be so complex that few simple relationships may be expected to exist.

Finally, the attitudes conveyed toward departmental autonomy and the lack of agreement in regard to the desirability of departmental autonomy as reported by Dressel, Johnson and Marcus suggest that if one were to wish to obtain a clearer picture as to the implications of departmental autonomy, he would do well to investigate further the relationship between departmental autonomy and the influence, emphasis, reference group orientation, and communication patterns within the university department. Toward this end, we now turn to the statement of hypotheses and description of the procedures employed in this study.

CHAPTER III

STATEMENT OF HYPOTHESES AND DEFINITION OF TERMS AND PROCEDURES

This chapter is composed of four main sections. Section one states the hypotheses to be investigated in the study. Section two describes the sample from which the data were drawn and the response rates. The third portion of the chapter notes the manner in which the variables were constructed. The final section of the chapter indicates the manner in which the data were analyzed through the use of the process of elaboration, Spearman rank order correlation coefficients, and analysis of variance.

Statement of Hypotheses

On the basis of the preceding review of literature and prior work in the area, the following sixteen relationships are hypothesized:

1. Characteristics

- A. The relationship between departmental autonomy and a favorable rating in the Cartter report will be curvilinear. Departments with a medium degree of autonomy will be rated in the

Cartter report more frequently than departments with a high or low degree of autonomy.

- B. The percentage of faculty members within a department holding joint appointments will be inversely related to the degree of departmental autonomy.
- C. The percentage of faculty members in a given department indicating one or more problems classified by source as internal or under the control of the department, will be inversely related to the degree of departmental autonomy.
- D. The percentage of faculty members in a given department indicating one or more problems classified by source as external or beyond the control of the department will be directly related to the degree of departmental autonomy.

2. Influence

- A. The influence of the department chairman in departmental affairs will be inversely related to the degree of departmental autonomy.
- B. The influence of the departmental faculty as a whole in departmental affairs will be directly related to the degree of departmental autonomy.
- C. The influence of the individual faculty member in departmental affairs will be directly related to the degree of departmental autonomy.

3. Emphasis

- A. Emphasis upon undergraduate instruction as a departmental goal will be inversely related to the degree of departmental autonomy.
- B. Emphasis upon graduate instruction as a departmental goal will be directly related to the degree of departmental autonomy.
- C. Emphasis upon basic research as a departmental goal will be directly related to the degree of departmental autonomy.

4. Reference Group Orientation

- A. Orientation to the university as a reference group will be inversely related to the degree of departmental autonomy.

- B. The relationship between departmental autonomy and orientation to the department as a reference group will be curvilinear. A higher percentage of individuals within departments with a medium degree of autonomy than in departments of high or low autonomy will be oriented to the department as a reference group.
- C. Orientation to the discipline as a reference group will be directly related to the degree of departmental autonomy.

5. Communication

- A. The relationship between departmental autonomy and the total amount of communication by a department will be curvilinear. Individuals within departments with a medium degree of autonomy will communicate more frequently with persons internal or external to the departments than will faculty in departments with a high or low degree of autonomy.
- B. The relationship between departmental autonomy and the amount of communication with persons external to the department will be curvilinear. Individuals within departments with a medium degree of autonomy will communicate more frequently with persons outside of their own department than will persons in departments with a high or low degree of autonomy.
- C. The relationship between departmental autonomy and the amount of internal communication within departments will be curvilinear. Individuals within departments with a medium degree of autonomy will communicate more frequently with persons within their own department than will persons in departments with a high or low degree of autonomy.

The Sample

The sample was drawn from faculty in departments of English, history, chemistry, mathematics, psychology, electrical engineering, and management at each of fifteen

universities. The universities and the departments within them varied greatly in regard to such factors as region, source of support, size, the ability to attract research funds from external sources, and Cartter ratings. The following universities were included in the sample:

University of Arizona	Northwestern University
Boston College	University of Notre Dame
University of Cincinnati	Pennsylvania State University
University of Denver	University of Southern California
University of Florida	Syracuse University
University of Georgia	Temple University
Louisiana State University	University of Tennessee
University of North Carolina at Chapel Hill	

Because each of the universities did not have all seven departments and because the data from three or four departments were either incomplete or unusable, the number of departments included in the study was reduced from one hundred and five to ninety-seven.

A total of 1,210 usable responses were obtained from A faculty (faculty included in ranks of assistant professor and above), representing a response rate of fifty-one per cent. An additional one hundred and nine responses were obtained from B faculty (faculty included in ranks of instructor and below) yielding a total of 1,319 usable responses. The response rates of A faculty ranged,

according to discipline, from a low of thirty-five per cent for mathematics to a high of sixty-eight per cent among faculty in departments of management. Among universities, the response rate for A faculty ranged from a low of thirty-five per cent to a high of ninety per cent.

An intensive examination of the correlates of high response rates revealed that several factors were associated with them. For example, response rates were higher in departments not rated in the Cartter report, in private institutions, in departments indicating a strong orientation to the university as a reference group as well as in departments where the dean or chairmen of special departmental committees were particularly influential. Generally, response rates were higher in departments placing greater emphasis upon graduate and undergraduate instruction while the rate of response was much lower in departments emphasizing basic research.

Construction of Variables

Data for this study were collected in conjunction with the Esso Departmental Study Project. A number of findings of the Esso Project have been published previously in a volume entitled The Confidence Crisis. Appendix C of this volume contains all of the schedules and forms used in collecting data for this study as well as the Esso Project.¹

¹Dressel, Johnson, Marcus, op. cit., pp. 249-62.

A total of thirty-one variables are examined in this study. Twenty-seven of these variables were derived from the responses of faculty members to a "Departmental Study Inventory," henceforth referred to as the faculty questionnaire. Three variables were constructed from information supplied by each of the departments, henceforth referred to as the "Basic Data." The remaining variable was the department's rating in the Cartter report.² Here, departments listed as extremely attractive, attractive, or acceptable plus, in regard to effectiveness of graduate departments or distinguished, strong, good, or adequate plus in regard to the effectiveness of graduate faculty were termed "Cartter-rated departments." Departments not listed in regard to either the effectiveness of graduate departments or of graduate faculty were termed "Cartter non-rated departments." In order to indicate the precise manner in which these variables were constructed, the exact wording of the question from the faculty questionnaire or basic data is given beginning with the items constructed from the faculty questionnaire.

Faculty Questionnaire Variables

Of the twenty-seven variables constructed from the faculty questionnaire, twenty variables were constructed

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

from individual questionnaire items while seven were group variables constructed by adding together two or more individual variables. The following definitions are offered:

Departmental Autonomy

Faculty members were asked to indicate in general on a five-point scale ranging from "Very great influence," to "Of no influence at all," how much say or influence the university administrators had in determining "what goes on in your department." Responses of individuals within each department were summed and a departmental mean was computed for the influence of the dean and for the influence of the university administration. These two means were averaged in order to derive the measure of departmental autonomy. The means for departmental autonomy were ranked from low to high for each of the ninety-seven departments in the study. The lowest mean score received a rank of one and indicated the greatest amount of departmental autonomy.

Influence

The influence of the department faculty as a whole, the department head or chairman, and individual faculty members were derived from the responses to this question: "In general, how much say or influence do each of the following have over what goes on in your department? (a) the department faculty as a whole, (b) the department head or chairman, (c) you, personally." This was the same question

and the options were the same as those used in assessing the influence of the dean or the influence of the university administration in order to derive a definition of departmental autonomy. Options were:

- (a) Very great influence (five points)
- (b) Great influence (four points)
- (c) Some influence (three points)
- (d) Slight influence (two points)
- (e) Of no influence at all (one point)

Responses of individuals within each department were summed and a departmental mean was computed for each of the three individual influence variables.

Emphasis

Variables indicating the degree of emphasis placed upon such departmental goals as undergraduate instruction, graduate instruction and basic research were constructed from responses to the following question: "Within your department, how much emphasis is placed on each of the following? (a) undergraduate instruction, (b) instruction of graduate students, (c) basic research." The options were

- (a) A very great amount (five points)
- (b) A great amount (four points)
- (c) Some (three points)
- (d) A slight amount (two points)
- (e) None at all (one point)

Responses of individuals within each department were summed

and a departmental mean was computed for each of the individual emphasis variables.

Reference Group Orientation

The orientation of individual faculty members to a university, departmental, or disciplinary reference group was indicated by the responses to the following question: "In general, do you usually think of yourself primarily as a member of your: (a) university, (b) department, or (c) discipline?" The percentage of faculty members in a given department choosing each of the three options represented the definition of each of these three reference group orientation variables.

Communication

Faculty members were asked: "To what extent do you discuss your opinions and ideas about the department with each of the following? (a) the chairman of your department, (b) faculty in your department, (c) chairmen of special department committees, (d) the dean of your school or college, (e) graduate students, (f) chairmen of other departments or institutes, (g) faculty in other departments or institutes, (h) university administrators (e.g., President or Vice-President, etc.)." The options on a five-point scale were:

- | | |
|----------------------------|----------------|
| (a) To a very great extent | (five points) |
| (b) To a great extent | (four points) |
| (c) To some extent | (three points) |

- | | |
|-------------------------|--------------|
| (d) To a slight extent | (two points) |
| (e) To no extent at all | (one point) |

Responses of individuals within each department were summed and a departmental mean was computed from each of the eight discussion or communication variables.

In addition, five group communication variables were constructed:

(1) The amount of total communication was derived by averaging the eight individual discussion means noted directly above.

(2) The amount of internal communication was derived by averaging the mean amounts of discussion with (a) the chairman, (b) the faculty, (c) chairmen of special departmental committees, and (e) graduate students within the department.

(3) The amount of external communication was derived by averaging the mean amounts of discussion with (d) the dean of the school or college, (f) chairmen of other departments or institutes, (g) faculty in other departments or institutes, and (h) university administrators.

(4) The amount of upward communication was derived by averaging the mean amounts of discussion with (d) the dean of the school or college, and (h) university administrators.

(5) The amount of outward communication was derived by averaging the mean amounts of discussion with (f) chairmen

of other departments or institutes, and (g) faculty in other departments or institutes.

Characteristics

1. Joint appointments. Faculty members were asked "Do you hold a joint appointment?" Their options were: (a) Yes, or (b) No. The variable was derived by computing the percentage of faculty members in each department indicating they held joint appointments.

2. Democracy. Faculty members were asked "How are decisions reached in your department in each of the following? (a) recruitment and selection of new faculty, (b) promotions and tenure, (c) salary increases, (d) leaves of absence, (e) travel authorization, (f) budget items for supplies and equipment, (g) teaching assignments, (h) office and research space, (i) award of assistantships, fellowships, and scholarships, (j) requirements for majors and graduate students." The options for each of the ten instances, on a four-point scale, were as follows:

- (a) vote of all members of departmental staff (four points)
- (b) vote of all tenured faculty (three points)
- (c) department chairman in consultation with an advisory group (two points)
- (d) department chairman acting within established policy (one point)

Responses of individuals within each department were summed and a departmental mean was computed for each of the ten items. The means of each of these items were averaged in order to derive the democracy of decision making variable.

3. Source of problem internal. On an open-ended question, faculty members were asked "What are two or three major problems or issues which you see in the operation of your department? Are these generated by internal or external factors? How might these be resolved?" Problems noted were classified in regard to (a) nature, (b) source, and (c) resolution. This particular variable was derived for each department by noting the percentage of faculty members within a given department who noted one or more problems which were classified by source as internal to or controllable by the department.

4. Source of problem external. This variable was constructed in the same manner as (3.) directly above from the percentage of faculty members with each department who noted one or more problems classified by source as external to, or not controllable by the department.

Basic Data Variables

Size of A Faculty

Departments were asked to answer the following question on the Basic Data collection forms: "In Fall

1967, what was the total number of persons at each rank affiliated with this department?" The Size of A Faculty variable was derived by summing the entries for the ranks of professor, associate professor, and assistant professor. Eighty-nine of the ninety-seven departments were able to supply this information.

Ratio of Research to General
Fund Dollars

Departments were asked to answer the following question on the Basic Data collection forms for the year 1966-67 with reference to the expenditure of (1) general funds and (2) grants and contract research funds: "What was the total amount of money expended for each of the following:

- (1) Personnel
 - a. Academic staff
 - b. Clerical and technical staff
 - c. Fellowships, graduate assistants
 - d. Number of federal traineeships
- (2) Operating Funds
 - a. Supplies, services, materials
 - b. New equipment
- (3) Total?"

The ratio of research to general funds variable was then derived by dividing the total amount of dollars expended from grants and contract research funds in 1966-67 by the total amount of dollars expended from general fund dollars. Complete data for this variable were available for only seventy of the ninety-seven departments. Thus approximately one-third of the responses obtained in the faculty

questionnaire were not usable when \$ Res/\$ GF was used as a control variable or test factor.

Publication Rate

Departments, in providing Basic Data, were asked to respond to the following question: "How many different members of this department have published how many scholarly works in the past three years?"

- a. _____ textbooks were published by _____ members
- b. _____ monographs were published by _____ members
- c. _____ advanced research treatises or research articles were published by _____ members.

The total number of publications of all types was summed and divided by the number of A Faculty within the department in order to form a very rough publication rate or index. This information was supplied by only seventy-one of the ninety-seven departments with a proportional reduction of usable responses when rate of publications was used as a control variable or test factor.

Analysis of Data

Data were analyzed through three primary means including the use of (1) the process of elaboration, (2) Spearman rank order correlation coefficients and (3) analysis of variance.

Elaboration

As explicated by Rosenberg in his volume, The Logic of Survey Analysis, the process of elaboration involves the introduction of a third variable into the analysis of a two variable relationship in order to "explain" or "specify" the relationship thus making it more exact.³ Elaboration is intended to aid in answering the questions of "why" and "under what circumstances" a particular relationship holds true.

Thus, elaboration is employed in an attempt to determine the existence or lack of causal relationships. It must be noted, however, that there is no way with survey data that the analyst can guarantee that a relationship is causal. The best he can do, as Glock notes, is to introduce all the third variables or test factors which might explain the relationship and examine the results.⁴ If the relationship is replicated once a test factor or third variable is introduced, the probability is increased that the relationship is causal. If, however, the relationship vanishes or is explained away when a third test factor is introduced, the relationship would

³Morris Rosenberg, The Logic of Survey Analysis (New York: Basic Books, Inc., 1968), p. 20.

⁴Charles Y. Glock, "Survey Design and Analysis in Sociology," in Survey Research in the Social Sciences, ed. by Charles Y. Glock (New York: Russell Sage Foundation, 1967), p. 21.

have to be regarded as spurious. Glock notes:

It is always possible, however, that a test factor exists which would explain away the relation, had the analyst had the knowledge and foresight to collect data on it and to introduce it into his analysis. Thus, the survey analyst, as analysts of any other form of data, can never conclude absolutely that two variables are indeed causally related.⁵

Data were analyzed in this study making use of the elaboration process. Departmental autonomy was regarded as an independent variable with the various influence, emphasis, reference group, communication and some departmental characteristic variables regarded as dependent variables. The investigator's concern was focused upon the consequences which followed from the distribution on an independent variable (departmental autonomy) rather than the effects a number of independent variables have on a particular dependent variable. Glock referred to this type of study as an implications study.⁶ Here, as with all studies incorporating the process of elaboration, the probability that a relationship is causal is increased when the relationship remains rather than vanishes once theoretically important test factors have been introduced.

In order to determine whether a significant relationship existed between the independent variable (departmental autonomy) and the dependent variables, data were

⁵Ibid., p. 21.

⁶Ibid., p. 37.

analyzed through use of the chi square technique for determining statistical significance. All of the individual dependent variables in regard to influence, emphasis, reference group orientation, and communication had five possible response categories. The number of response categories was collapsed to two, three, and in some instances four categories as long as each of the collapsed categories contained a minimum of approximately ten per cent of the total number of responses to an item.

The overall two variable relationships, noting the chi square value obtained for the relationship between departmental autonomy and individual dependent variables, are noted in the tables appearing in Chapter IV. If the overall relationship between departmental autonomy and the dependent variable was significant, twenty-four test factors were introduced into the analysis in order to indicate the conditions under which the significant relationship either held or vanished or the conditions under which another significant sub-pattern of variation appeared. If the overall relationship between departmental autonomy and a dependent variable was not significant, the various test factors were introduced in order to indicate the conditions under which significant relationships emerged. The twenty-four test factors were:

Cartter Rating
Support

Reference University
Reference Department

Size A Faculty	Reference Discipline
Democracy	Discussion Department Head
\$ Res./\$ General Fund	Discussion Department Faculty
Publication Rate	Discussion Dean
Influence of Department Faculty	Discussion University Administration
Influence of Department Head	Total Communication
Influence of Individual Faculty	External Communication
Emphasis on Undergraduate Instruction	Upward Communication
Emphasis on Graduate Instruction	Outward Communication
Emphasis on Basic Research	Internal Communication

Tables A-1 to A-11 in the Appendix, which are referred to in Chapter IV, indicate whether an overall relationship between departmental autonomy and a particular dependent variable emerged, was replicated, explained away, or altered for each category of the twenty-four test factors. Data were analyzed through the use of the NUCROS program developed by the Computer Institute for Social Science Research at Michigan State University. The Program produces cross-classifications, also called cross-tabulations, analysis of crossbreaks or contingency tables in two, three, or four dimensions.

Departments were ranked high, medium or low in regard to departmental autonomy which was regarded as the independent variable. The individual influence, emphasis reference group, communication, and departmental

characteristics were regarded as dependent variables. The NUCROS program produced separate chi square tables for each category of the test factor. Thus, for example, the relationship between departmental autonomy and the influence of the department chairman was indicated in two separate chi square tables--for departments rated in the Cartter report and for departments not rated in the Cartter report. Separate chi square tables were also produced for departments in public supported institutions and for departments in private supported institutions. Three separate chi square tables indicated the relationship between the degree of departmental autonomy and the influence of the department chairman for each of the three (high, medium and low) categories for each of the remaining twenty-two test factors. Thus total number of contingent relationships and separate chi square values produced was seventy ($3 \times 22 + 2 \times 2$).

If, for example, an inverse relationship was hypothesized between the degree of departmental autonomy (high, medium or low) and the influence of the department chairman (very great; great; some, slight or none), each of the seventy conditional relationships was examined to see if the percentage of faculty members attributing a very great amount of influence to the department chairman (1) exhibited significant variation and (2) decreased as autonomy increased. If the above conditions were met or if

the percentage of faculty members attributing some, slight or no influence increased as department autonomy increased, the overall relationship was viewed as being supported.

Tables A-1 - A-11 indicate only the instances, out of seventy possible conditional relationships, when there was a significant relationship between the degree of departmental autonomy and the individual dependent variable as indicated by a significant chi square value.

Spearman Rank Order Correlation Coefficients

Whereas in the process of elaboration a significant chi square indicated that there was significant variation in the particular sub-sample considered, it did not indicate the magnitude of any existing linear relationships. Spearman rank order correlation coefficients were more appropriate for this purpose.

By averaging the responses for all members of a department to most of the individual department variables, by computing the percentage of faculty members within a department holding a particular reference group orientation, or by computing the percentage of faculty members in each department indicating one or more problems classified by source as either internal or external to the department, each of the departments could be ranked on each variable in regard to each of the other departments.

Because it was possible to obtain an ordinal ranking of the departments for each variable, data were analyzed through the use of the Spearman rank order correlation coefficient. When data were missing for particular variables, the number of pairs correlated was reduced. When ranks were tied, they were broken randomly.

Analysis of Variance

A simple one-way analysis of variance was employed in order to obtain mean values, on a five-point scale, for each of the individual influence, emphasis, reference group, and discussion variables as well as for the five group communication variables. This was necessary because, although the chi square analysis was valuable in noting the distribution at either end of the five-point scale, variation in the middle categories could be great enough to convey a misleading picture if only differences in the extreme categories were reported.

Through the use of Scheffe's method of multiple comparisons individual means were compared to determine whether or not they were significantly different from each other. It was thus possible, for example, to compare the mean amounts of discussion of departmental affairs with the department chairman in departments of high, medium, and low autonomy.

Data were also analyzed through the use of a repeated measures analysis of variance. This procedure allows one to compare the means of a number of items answered by the same individuals, thus enabling one, for example, to note in departments of high, medium or low autonomy whether discussion of departmental matters was significantly greater with the department chairman, departmental faculty as a whole, or the chairmen of special departmental committees. Contrasts of individual means were, again, made through the use of Scheffe's method of multiple comparisons.

CHAPTER IV

ANALYSIS OF DATA

Introduction

In attempting to construct a portrait of university departments with varying degrees of autonomy, departmental autonomy was regarded as an independent variable. As previously noted, several areas of interest were examined. These areas and the dependent variables considered for each in regard to departmental autonomy were as follows:

1. Departmental Characteristics including (a) Cartter report rating, (b) the percentage of faculty in a given department holding joint appointments in other departments, (c) the percentage of faculty members in a given department indicating one or more problems classified by source as internal, or within the control of the department, (d) the percentage of faculty members in a given department indicating one or more problems classified by source as external or beyond the control of the department.

2. The influence of various actors within the departments including (a) the department chairman, (b) the departmental faculty as a whole, and (c) the individual faculty member.

3. The emphasis placed upon various departmental goals including (a) undergraduate instruction, (b) graduate instruction, and (c) basic research.

4. The reference group orientation of individual faculty members to (a) the university, (b) the department, and (c) the discipline.

5. The communication system including communication with such individuals and elements as the (a) dean, (b) department chairman, (c) faculty within one's own department, (d) chairmen of special departmental committees, (e) university administration, (f) graduate students, (g) faculty in other departments, (h) chairmen of other departments or institutes. In addition, several group communication variables were constructed through the combination of individual communication variables. These group variables were: (a) total communication representing the mean for all eight individual variables; (b) external communication representing the mean for four variables including discussion with the dean, university administration, faculty in other departments, and chairmen of other departments or institutes; (c) upward communication representing the mean for discussion with university administration and discussion with the dean; (d) outward communication representing the mean for discussion with faculty in other departments and discussion with chairmen of other departments or institutes; (e) internal communication representing the mean

for four variables including discussion with the department chairman, faculty members within the department, chairmen of special departmental committees, and graduate students within the department.

Analysis

In investigating the relationship between departmental autonomy (regarded as the independent variable) and the individual dependent variables, the following procedures were followed:

1. An hypothesis was stated.
2. Data tending to support or reject the hypothesized relationship from a chi square analysis and analysis of variance were noted. The Spearman rank order correlation between departmental autonomy and a particular variable was noted for the total group of ninety-seven departments. Spearman rank order correlations were also noted for various subgroups of the total sample. These correlations were noted for departments characterized as having (a) high, (b) medium, or (c) low autonomy and departments which were (d) rated or (e) not rated in the Cartter report.
3. Test factors, twenty-four in all, were introduced in order to examine the conditional relationships which emerged between the independent variable (departmental

autonomy) and individual dependent variables. Data were then analyzed in the manner described in Chapter III.

4. The range of responses, giving the high and low percentages of faculty within a given department indicating a particular response, was given.

Table 1 presents a summary of the Spearman rank order correlations between the degree of departmental autonomy and (1) the test factors noted above and (2) all dependent variables. These correlations are noted for faculty in all departments, faculty in departments characterized by high, medium, or low autonomy, and faculty in departments rated or not rated in the Cartter report.

Departmental Characteristics

Cartter Rating

Hypothesis.--The relationship between departmental autonomy and a favorable rating in the Cartter report will be curvilinear. Departments with a medium degree of autonomy will be rated in the Cartter report more frequently than departments with a high or low degree of autonomy.

Table 2 indicates that the hypothesized relationship was not supported by the data. Although the findings of Pelz and Andrews may be broadly construed as indicating that productivity, largely in research laboratories, was highest in settings with moderate coordination, medium autonomy was not associated with high Cartter ratings.

Table 1.--Spearman rank order correlations between departmental autonomy and various test factors and dependent variables for total sample and various subgroups.

Variable	Cartter				Medium Autonomy	Low Autonomy
	All Departments	Rated Depts.	Non-Rated Depts.	High Autonomy		
Joint Appointments	-.15	-.09	-.20	+.05	-.06	-.31*
Size of A Faculty	-.10	-.26	-.19	-.02	+.10	-.12
Democracy	+.33***	+.40**	+.17	+.03	+.15	-.10
\$ Research/\$ General Fund	+.08	+.13	-.21	+.29	-.04	-.28
Publication Rate	+.12	+.08	+.09	-.09	+.30	-.09
Source of Problem Internal	-.13	+.07	-.14	+.13	-.32*	+.08
Source of Problem External	+.01	-.17	+.06	-.23	+.09	-.00
Influence of Dept. Head	-.58***	-.68***	-.49***	-.55***	-.14	-.30*
Influence of Dept. Faculty	+.36***	+.49***	+.27*	-.01	+.32*	+.04
Individual Influence	+.14	-.10	+.26*	-.23	+.19	-.21
Emphasis Ugrad Instruction	-.13	-.10	-.01	+.03	-.08	-.07
Emphasis Graduate Inst.	+.23*	+.07	+.33**	+.11	+.14	-.10
Emphasis Basic Research	+.19*	+.17	-.02	-.02	+.03	-.13
Ref University	-.05	-.08	+.05	+.12	+.11	-.13
Ref Department	-.13	-.07	-.14	-.32*	-.21	+.30*
Ref Discipline	+.14	+.11	+.10	+.29*	+.19	-.22
Total Communication	-.08	-.08	-.11	-.30*	+.18	-.16
Internal Communication	+.06	+.02	-.01	-.27	+.25	-.29
External Communication	-.16	-.22	-.08	-.24	+.07	+.11
Upward Communication	-.04	-.17	+.08	-.04	+.06	+.09
Outward Communication	-.28**	-.33*	-.16	-.33*	+.04	-.01
Discussion Dept. Faculty	-.03	-.07	-.05	-.05	+.16	-.08
Discussion Dept. Head	+.09	-.02	+.14	-.30*	+.14	-.29
Discussion Head Dept. Comm.	+.08	-.00	+.05	-.21	+.22	-.20
Discussion Grad Students	-.06	+.06	-.20	-.18	+.21	-.07
Discussion Faculty Other Dept.	-.27**	-.36*	-.14	-.36*	-.05	+.24

Table 1.--Continued.

Variable	All Departments	Cartter Rated Depts.		Cartter Non-Rated Depts.		High Autonomy	Medium Autonomy	Low Autonomy
		Dept.	Other	Dept.	Other			
Discussion Head	-.15	-.04	-.13	-.13	-.22	+.12	-.05	
Discussion Dean	+.01	-.13	+.13	+.13	-.04	+.03	+.18	
Discussion University Adm.	-.11	-.11	-.06	-.06	+.01	+.04	-.24	

*p < .05

**p < .01

***p < .001

Instead, a direct relationship between departmental autonomy and a favorable Cartter rating was suggested although the relationship was not statistically significant.

Table 2.--Relationship between Cartter report ratings and faculty perception of departmental autonomy.

Cartter Ratings	Departmental Autonomy			Total	N
	High	Medium	Low		
Rated	51.5	37.5	28.1	39.1	38
Not Rated	48.5	62.5	71.9	60.8	59
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>97</u>
N	33	32	32		

$$\begin{aligned} \chi^2 &= 3.78 \\ df &= 2 \\ p &> .05 \end{aligned}$$

Joint Appointments

Hypothesis.--The percentage of faculty members within a department holding joint appointments will be inversely related to the degree of departmental autonomy.

Data presented in Table 3 tend to be in the direction of the stated hypothesis although the differences were not statistically significant. Table A-1 and all others also located in Appendix A are designed to indicate how a relationship between departmental autonomy, the independent variable, and a particular dependent variable, in this case, joint appointments, is modified when the various test factors are introduced as control variables. The overall

relationship between the degree of departmental autonomy and the frequency of joint appointments, as noted in Table 3 was not significant.

Table 3.--Relationship between percentage of faculty members holding joint appointments in departments and faculty perception of departmental autonomy.

Joint Appointments	Departmental Autonomy			Total	N
	High	Medium	Low		
Present	9.6	12.2	13.3	11.7	127
Not Present	90.4	87.8	86.7	88.3	957
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>1084</u>
N	363	353	368		

$$\chi^2 = 2.49$$

$$df = 2$$

$$p > .05$$

Column one of Table A-1, however, indicates the conditions under which a significant relationship, which was not present in the overall relationship, emerged. Column two indicates the conditions under which there was a significant amount of variation in the relationship between departmental autonomy and the percentage of faculty members holding joint appointments, with joint appointments being more frequent in departments characterized by medium rather than high or low autonomy. Column three indicates the conditions in which there was a significant amount of variation in the relationship between departmental autonomy and the percentage of faculty members holding joint

appointments, with joint appointments being least frequent in departments characterized by a low rather than a high or medium degree of autonomy.

Thus, for example, Table A-1 indicates that in private supported institutions, there was an inverse relationship between the degree of departmental autonomy and the percentage of joint appointments which was significant at the .01 level of significance. However, no such significant relationship emerged between departmental autonomy and the percentage of faculty with joint appointments within public supported institutions.

The most common pattern noted in Table A-1 was for the frequency of joint appointments to be greatest in departments with medium autonomy. However, in departments where faculty influence was low, in departments which were large or placed strong emphasis upon basic research, and were also characterized by medium autonomy, a smaller percentage of faculty with joint appointments existed than in departments with high or low autonomy. Thus joint appointments were much more frequent in departments with medium autonomy and high total, external and outward communication particularly with the deans and university administration. Joint appointments were also more common in departments characterized by a low degree of democracy and influence of the departmental faculty as a whole in combination with a medium degree of autonomy. The

initiative for making joint appointments in departments with medium autonomy thus appears as if it may lie outside of the department. The highest incidence of faculty with joint appointments in a department (30.8%) was in a department where a medium degree of autonomy and a high degree of influence attributed to the university administration were combined. No joint appointments were reported in departments where high autonomy was also associated with a low emphasis upon basic research, low influence attributed to the departmental faculty as a whole, or low democracy in departmental decision making.

Internal Problems

Hypothesis.--The percentage of faculty members in a given department indicating one or more problems classified by source as internal or under the control of the department, will be inversely related to the degree of departmental autonomy.

Table 4.--Relationship between percentage of faculty members in departments noting one or more problems classified by source as internal to the department and faculty perception of departmental autonomy.

Source of Problem	Departmental Autonomy			Total	N
	High	Medium	Low		
Indicated	60.5	59.2	66.9	62.3	693
Not Indicated	39.5	40.8	33.1	37.7	419
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>1112</u>
N	367	355	390		

$\chi^2 = 5.56$
 $df = 2$
 $p > .05$

An examination of the data in Table 4 reveals that the hypothesis was not confirmed. There was, however, a tendency for low autonomy to be associated with a high percentage of faculty members within given departments indicating the existence of problems classified by source as internal, a trend which approached but did not reach statistical significance. Few notable relationships emerged when various test factors were introduced into the analysis. Generally, the lowest percentages of faculty indicating internal problems were in departments with medium autonomy while faculty in departments with low autonomy were most likely to indicate problems classified by source as internal. This was the case in departments also characterized by private support, low publication rates, low external communication and in departments attributing high influence to the faculty, individually and collectively, high reference group orientation to the university and high amounts of discussion with either the dean or departmental faculty. Medium autonomy thus appears to be consistently related to fewer problems which could be controlled by departmental action.

The percentage of faculty members noting one or more problems classified by source as internal ranged from a high of 77.7 per cent in departments characterized by a low degree of autonomy and high discussion of

departmental affairs among the departmental faculty as a whole to a low of 43.1 per cent in departments characterized by highly influential faculty and a medium degree of departmental autonomy.

External Problems

Hypothesis.--The percentage of faculty members in a given department indicating one or more problems classified by source as external to or beyond the control of the department will be directly related to the degree of departmental autonomy.

Table 5.--Relationship between percentage of faculty members in departments noting one or more problems classified by source as external to the department and faculty perception of departmental autonomy.

Source of Problem External	Departmental Autonomy			Total	N
	High	Medium	Low		
Indicated	64.0	66.5	61.8	64.0	712
Not Indicated	36.0	33.5	38.2	36.0	400
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>1112</u>
N	367	355	390		

$$\chi^2 = 1.77$$

$$df = 2$$

$$p > .05$$

As indicated in Table 5, there was only a very slight overall relationship between the percentage of faculty members noting one or more problems classified by

source as external, or beyond the control of the department, and the degree of departmental autonomy. Only nine significant relationships emerged when the twenty-four test factors were introduced into the analysis and none of the significant relationships supported the hypothesized relationship. Instead, heightened awareness of problems with an external source was most evident in departments characterized by a medium degree of autonomy while the fewest external problems were in departments with low autonomy.

High perception of problems caused by sources beyond the control of the department was particularly evident in departments which were rated in the Cartter report or departments which placed low emphasis upon undergraduate instruction. Cartter-rated departments are more likely than non-rated departments to seek and receive research funds or money for improved facilities or additional faculty, all of which are not directly controllable by the department. Thus it is not surprising that such departments would have a larger percentage of problems classified by source as external.

Perception of externally caused problems was also associated with departments characterized by high total and external communication, particularly with the dean or university administration. Thus these consultative patterns, presumably, are viewed by the departmental faculty

as constituting interference with departmental prerogatives rather than providing administrative support. The percentage of faculty members noting one or more problems classified by source as external ranged from a high of 76.7 per cent in departments characterized by high total communication and medium autonomy to a low of 50.0 per cent in departments with a medium orientation to the department as a reference group and a high degree of autonomy.

Influence of Various Actors

Influence of Department Chairman

Hypothesis.--The influence of the department chairman in departmental affairs will be inversely related to the degree of departmental autonomy.

Table 6.--Relationship between faculty perception of the influence of the department chairman and faculty perception of departmental autonomy.

Influence of Department Chairman	Departmental Autonomy			Total	N
	High	Medium	Low		
Very Great	33.4	52.5	66.3	50.9	624
Great	43.6	40.3	28.4	37.3	457
Some, Slight or None	23.0	7.2	5.3	12.8	144
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>1225</u>
N	404	402	419		

$$\chi^2 = 123.93***$$

$$df = 4$$

$$p \leq .001$$

As noted in Table 6, a strong inverse relationship was found to exist between the perceived influence of the department chairman and the degree of departmental autonomy, thus lending strong support to the hypothesis. The Spearman rank order correlation coefficients between the influence of the department chairman and the degree of departmental autonomy for all departments and for all subgroups, except for departments of medium autonomy were, for the most part, highly significant. The strongest relationship was evident among departments rated favorably in the Cartter report ($r_s = -.68$). Furthermore, the mean amounts of influence, on a five point scale, decreased as one moved from conditions of low (4.60) to medium (4.45) and from medium to high (4.07) autonomy, with all differences being highly significant.

Table A-2 illustrates how the overall inverse significant relationship between departmental autonomy and the dependent variable noted in Table 6 was altered when the twenty-four test factors were introduced into the analysis. The original inverse relationship held, as noted in column one, in sixty-five of the seventy conditional relationships examined.

Column two indicates, among other things, that the overall significant inverse relationship between the degree of departmental autonomy and the influence of the department chairman vanished in departments placing a

medium degree of emphasis upon graduate instruction. The inverse relationship held, however, at the .001 level of significance in departments placing either a high or low emphasis upon graduate instruction. Additional modifications of the overall relationship were evident only in departments ranked high or medium in regard to the ratio of research to general fund dollars, in departments where the total amount of communication was high and in departments where the influence of the department chairman was ranked medium. In these instances the significant relationship between the degree of departmental autonomy and the influence of the department chairman vanished. There were no instances, as revealed by column three of Table A-2, in which there was significant variation between the degree of departmental autonomy and the influence of the department chairman which were not in keeping with the overall inverse relationship between these two variables.

The percentage of faculty members attributing a very great amount of influence to the department chairman ranged from a high of 77.4 per cent in departments with low upward communication and low autonomy to a low of 18.6 per cent in departments with a high ratio of research dollars to general fund dollars and high autonomy.

Influence of Departmental Faculty
as a Whole

Hypothesis.--The influence of the departmental faculty as a whole in departmental affairs will be directly related to the degree of departmental autonomy.

Table 7.--Relationship between faculty perception of the influence of the departmental faculty as a whole and faculty perception of departmental autonomy.

Influence of Departmental Faculty	Departmental Autonomy			Total	N
	High	Medium	Low		
Very Great	33.9	25.9	13.8	24.4	301
Great	35.9	32.1	30.0	32.6	402
Some	22.4	31.1	33.8	29.1	359
Slight or None	7.9	10.9	22.4	13.9	171
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>1233</u>
N	408	405	402		

$$\chi^2 = 81.34***$$

$$df = 6$$

$$p \leq .001$$

Table 7 indicates a strong, direct, highly significant relationship between the degree of departmental autonomy and the influence of the departmental faculty as a whole. The relationship was strongest ($r_s = +.49$) in departments which were rated favorably in the Cartter report. As one moved from conditions of low (3.29) to medium (3.70) and from medium to high (3.95) autonomy the mean amounts of influence attributed to the departmental faculty on a five point scale, increased significantly. Under the

condition of high autonomy the relative influence of the faculty approached, but did not equal that of the department chairman (4.07) in departmental affairs.

The relationship between the perceived influence of the departmental faculty as a whole and the perceived degree of departmental autonomy, although strong, was not, however, as strong as the relationship between autonomy and the influence of the department chairman. Thus Table A-3 reveals that the hypothesized relationship held in fifty-one of the seventy as compared to sixty-five of seventy of the conditional relationships noted. The degree of democracy in departmental decision making and the influence of the university administration were particularly important test factors. Thus the significant relationship between the influence of the departmental faculty as a whole and the degree of departmental autonomy vanished in departments characterized as either high or low in regard to these test factors. Under the conditions of high publication rates, high orientation to the university as a reference group, and low discussion with university administrators the direct relationship between departmental autonomy and the influence of the departmental faculty as a whole also vanished.

The third column of Table A-3 indicates seven conditions under which the one significant sub-pattern of variation emerged: the tendency for faculty in departments

with a medium degree of autonomy to regard themselves as more influential than faculty in departments with high or low autonomy. Here, under such conditions as a weak department chairman, highly influential individual faculty members, and high outward communication, true collegial power is likely to exist. The percentage of faculty members attributing a very great amount of influence to the departmental faculty as a whole ranged from a high of 49.6 per cent when discussion with departmental faculty and departmental autonomy were high to a low of 8.3 per cent when discussion with departmental faculty and departmental autonomy were low.

Influence of Individual Faculty Members

Hypothesis.--The influence of the individual faculty member in departmental affairs will be directly related to the degree of departmental autonomy.

Table 8.--Relationship between faculty perception of personal influence and faculty perception of departmental autonomy.

Personal Influence of Faculty Member	Departmental Autonomy			Total	N
	High	Medium	Low		
Very Great, Great or Some	58.9	57.5	48.9	55.0	671
Slight	34.7	33.4	31.2	33.1	403
None	6.4	9.0	19.9	11.9	145
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>1219</u>
N	404	398	417		

$$\chi^2 = 40.49***$$

$$df = 4$$

$$p \leq .001$$

While there was a suggestion of a direct relationship between the personal influence of faculty members and the degree of departmental autonomy, the main factor contributing to the large chi square value noted in Table 8 was the relatively low percentage of faculty members (48.9%) in departments with low autonomy who felt that they had at least some influence in departmental affairs. Thus the mean amount of influence attributed to individual faculty members, on a five point scale, was significantly lower in departments of low autonomy (2.39), than that of faculty in departments of medium (2.60), or high (2.64) autonomy, where the relative influence of individual faculty members was essentially the same. The Spearman rank order correlation coefficients, except for those departments which were not rated in the Cartter report ($r_s = +.26$), were not statistically significant.

A number of modifications of the overall direct relationship between personal influence and departmental autonomy occurred when the twenty-four test factors noted in Table A-4 were introduced into the analysis. The hypothesized relationship held in exactly 50 per cent (35) of the cases while it vanished in twenty-nine cases and exhibited other significant patterns of variation in nine other instances.

The overall direct relationship between personal influence and departmental autonomy vanished, most notably

in departments with high rankings on all of the group communications variables. The relationship also vanished in Cartter-rated departments and in departments characterized by high or medium amounts of democracy in decision making and high or medium percentages of research dollars from outside sources. Taken together, these findings suggest a highly competent community of scholars where differences in the perception of one's personal influence are slight because the degree of personal influence exerted is uniformly high.

A consistent sub-pattern of variation which occurred in each of nine instances when there was significant variation from the overall pattern was for one's perception of his own personal influence to be highest in departments with a medium degree of autonomy and lowest in departments with low autonomy. Thus, there was not a single instance among the forty-seven significant relationships noted when low departmental autonomy was not associated with a lower perception of personal influence than was the case in departments characterized by a medium or high degree of departmental autonomy.

The percentage of faculty members attributing a very great, great, or some amount of influence to themselves as individuals ranged from a high of 73.4 per cent when the influence of the departmental faculty as a whole was high and was combined with a medium degree of autonomy to a low

of 36.2 per cent when the total amount of communication and departmental autonomy were low.

Emphasis Upon Departmental Goals

We now turn to the examination of the relationship between the degree of departmental autonomy and the degree of emphasis placed upon three primary departmental goals: (1) undergraduate instruction, (2) graduate instruction, and (3) basic research. Here, in general, as indicated by the mean amount of emphasis attributed to the various departmental goals, on a five point scale, the faculty in our sample placed a significantly higher emphasis upon graduate instruction (4.14) as opposed to basic research (3.74) or undergraduate instruction (3.71). Under conditions of high and medium autonomy the relative emphasis placed upon the three departmental goals remained the same as stated above. Under the condition of low departmental autonomy, emphasis upon graduate instruction (4.01) was also clearly strongest. However, emphasis upon undergraduate instruction (3.74) was somewhat higher than the emphasis placed upon basic research in departments with low autonomy (3.56), although the difference was not statistically significant.

Emphasis Upon Undergraduate Instruction

Hypothesis.--Emphasis upon undergraduate instruction as a departmental goal will be inversely related to the degree of departmental autonomy.

Table 9.--Relationship between faculty perception of emphasis placed upon undergraduate instruction and faculty perception of departmental autonomy.

Emphasis Upon Undergraduate Instruction	Departmental Autonomy			Total	N
	High	Medium	Low		
Very Great	14.3	21.0	20.9	18.8	238
Great	45.6	45.8	43.4	44.9	570
Some, Slight or None	40.1	33.3	35.6	36.3	461
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>1269</u>
N	419	415	435		

$$\chi^2 = 9.66^*$$

$$df = 4$$

$$p \leq .05$$

Although there was significant variation in the overall relationship between the degree of emphasis placed upon undergraduate instruction and the degree of departmental autonomy, the relationship as evidenced by the lack of significant Spearman rank order correlation coefficients, was not linear. Nor were the mean emphases placed upon undergraduate instruction under conditions of high (3.63), medium (3.76) and low autonomy (3.74) significantly different from each other. The hypothesis was, therefore, not confirmed. The most significant tendency indicated in Table 9 was for the faculty in departments with high autonomy to place a relatively low emphasis upon undergraduate instruction.

As the overall relationship between the degree of emphasis placed upon undergraduate instruction and the

degree of departmental autonomy was one of borderline significance, it was not surprising that significant relationships were evident in only twenty-nine of the seventy conditional relationships noted in Table A-5. The trend for faculty in departments characterized by high autonomy to indicate less emphasis upon undergraduate instruction than faculty in departments with medium or low autonomy, however, held for twenty-seven of the twenty-nine significant relationships.

The percentage of faculty members indicating that a very great amount of emphasis was placed upon undergraduate instruction ranged from a high of 46.4 per cent in departments where democracy was high and autonomy was low to a low of 5.1 per cent in departments when a low amount of discussion was coupled with a high degree of departmental autonomy. Because the overall relationship between departmental autonomy and the degree of emphasis placed on undergraduate instruction was tenuous at best, further attempts to interpret the data might only lead to a misrepresentation of the actual situation.

Emphasis Upon Graduate Instruction

Hypothesis.--Emphasis upon graduate instruction as a departmental goal will be directly related to the degree of departmental autonomy.

Table 10.--Relationship between faculty perception of emphasis placed upon graduate instruction and faculty perception of departmental autonomy.

Emphasis Upon Graduate Instruction	Departmental Autonomy			Total	N
	High	Medium	Low		
Very Great	36.5	35.9	26.3	32.8	412
Great	51.2	50.5	54.8	52.2	655
Some, Slight or None	12.3	13.6	18.9	15.0	188
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>1255</u>
N	414	412	429		

$$\chi^2 = 16.08^{**}$$

$$df = 4$$

$$p \leq .01$$

The data in Table 10 tend to support the hypothesized relationship between the degree of emphasis placed upon graduate instruction and the degree of departmental autonomy. Most notable, however, was the tendency for faculty in departments with a low degree of autonomy to attribute a low emphasis to graduate instruction as a departmental goal. Thus the mean amount of emphasis placed upon graduate instruction under the condition of low departmental autonomy (4.01), was significantly lower than the means for departments characterized by medium (4.19), or high (4.23) autonomy.

The Spearman rank order correlation coefficient, between the degree of emphasis upon graduate instruction and the degree of departmental autonomy, as noted in Table 1, were significant for the entire sample of ninety-seven

departments ($r_s = +.23$) and particularly for departments not rated in the Cartter report ($r_s = +.33$). However, the direct significant relationship held, as noted in Table A-6, for only seventeen of the seventy conditional relationships examined. Generally, departments placing high emphasis upon graduate instruction were characterized by a high total amount of communication, particularly within the department. Such departments were not oriented to the discipline and were more likely to be non-rated in the Cartter report. In each of the six instances in which there was significant variation not in accordance with the overall relationship, emphasis placed upon graduate instruction was lowest in departments with low autonomy and highest in departments with medium autonomy. Thus in all twenty-five of the significant relationships examined, low autonomy was associated with a low emphasis upon graduate instruction.

The percentage of faculty members indicating that a very great amount of emphasis was placed upon graduate instruction ranged from a high of 48.9 per cent when a medium orientation to the department as a reference group was combined with a high degree of autonomy, to a low of 18.7 per cent when a low degree of autonomy was combined with a low ratio of research to general fund dollars. As was the case in examining the relationship between autonomy and emphasis upon undergraduate instruction, the strength

of the overall relationship between emphasis upon graduate instruction and departmental autonomy was too unstable to permit further attempts at interpretation.

Emphasis Upon Basic Research

Hypothesis.--Emphasis upon basic research as a departmental goal will be directly related to the degree of departmental autonomy.

Table 11.--Relationship between faculty perception of emphasis placed upon basic research and faculty perception of departmental autonomy.

Emphasis Upon Basic Research	Departmental Autonomy			Total	N
	High	Medium	Low		
Very Great	29.8	26.3	19.8	25.2	316
Great	43.1	39.4	33.4	38.6	483
Some, Slight or None	27.1	34.3	46.8	36.2	453
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>1252</u>
N	413	414	425		

$$\chi^2 = 36.90***$$

$$df = 4$$

$$p \leq .001$$

Data in Table 11 lend support to the stated hypothesis. There was considerable variation produced due to the relatively small percentage of faculty in departments with low autonomy (19.8%) who attributed a very great amount of emphasis to basic research as a departmental goal. However, the Spearman rank order correlation coefficients were of marginal significance at best ($r_s = +.18$)

for all departments. This is counterbalanced by the fact that the mean emphasis placed upon basic research increased, on a five point scale, from 3.56 to 3.78 to 3.91 under conditions of low, medium, and high autonomy, respectively. The difference in means for departments of high and low autonomy and for departments of medium and low autonomy were significant at the .001 and .01 levels of significance, respectively.

Thus, as noted in Table A-7, when the twenty-four test factors were introduced, the overall relationship held in forty-two of seventy instances. Twelve significant relationships emerged which were at variance with the overall pattern. In forty-six of the fifty-four significant relationships examined, faculty in departments with low autonomy were less likely than faculty in departments of high or medium autonomy to indicate strong emphasis upon basic research.

In general, where emphasis upon basic research was weak, as when the size of the department was small, democracy in decision making was low, funds from external sources were slight, the chairman of the department was highly influential, discussion with departmental faculty was low, and discussion with the dean or with faculty and chairmen of other departments was high, the overall significant relationship between the degree of departmental autonomy and the amount of emphasis placed upon basic

research vanished. On the other hand, when individual faculty members were perceived as having high or moderate influence, the relationship also vanished, probably because under these conditions, emphasis upon basic research was very high.

Emphasis upon basic research was highest in departments where a high publication rate was combined with a medium degree of autonomy. In this instance, 62.7 per cent of the faculty indicated a very great amount of influence was placed upon basic research. This finding tends to corroborate Pelz and Andrews' finding that productivity (a high publication rate) is enhanced under conditions of moderate coordination or autonomy. At the other extreme, only 5.9 per cent of the faculty in departments characterized by a low degree of democracy in departmental decision making and high departmental autonomy indicated that a very great emphasis was placed upon basic research.

Reference Group Orientations

Discussion of findings in regard to the reference group orientation of individual faculty members requires a slight change in format. Table 12 presents the data relevant to all three stated hypotheses. As noted by the extremely small chi square value, virtually no variation in reference group orientation was evident among faculty working in settings of varying departmental autonomy.

Table 12.--Relationship between reference group orientations of faculty and faculty perception of departmental autonomy.

Reference Group	Departmental Autonomy			Total	N
	High	Medium	Low		
University	15.8	17.0	16.9	16.6	203
Department	38.8	41.9	39.6	40.1	491
Discipline	45.4	41.1	43.4	43.3	531
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>1225</u>
N	405	401	419		

$$\chi^2 = 1.60$$

$$df = 4$$

$$p \geq .05$$

Table A-8 indicates the nine conditions under which significant variation was evident relevant to the stated hypotheses. The three test factors dealing with departmental emphasis upon undergraduate instruction, graduate instruction and basic research appeared to be prominently associated with the presence of significant relationships between an individual's reference group and the degree of departmental autonomy.

University Reference Group Orientation

Hypothesis.--Orientation to the university as a reference group will be inversely related to the degree of departmental autonomy.

The Spearman rank order correlation coefficients between the degree of departmental autonomy and the degree

of orientation to the university as a reference group, as noted in Table 1, yielded no significant relationships. Orientation to the university as a reference group ranged from a low of 9.2 per cent of faculty in departments characterized by low influence of individual faculty members and a medium degree of autonomy to a high of 31.8 per cent of the faculty in departments placing a low emphasis upon basic research and having a high degree of departmental autonomy.

As noted in Table A-8, the hypothesized inverse relationship between departmental autonomy and orientation to the university as a reference group emerged in only one of the nine relationships in which significant variation existed. The converse, a direct relationship between university orientation and the degree of departmental autonomy was evident in two of the nine conditions: when emphasis upon basic research and, somewhat unexpectedly, when discussion with university administration were low.

Departmental Reference Group Orientation

Hypothesis.--The relationship between departmental autonomy and orientation to the department as a reference group will be curvilinear. A higher percentage of individuals within departments with a medium degree of autonomy than in departments with a high or low degree of autonomy will be oriented to the department as a reference group.

The Spearman rank order correlation coefficients between departmental reference group orientation and departmental autonomy revealed a negative orientation to the department ($r_s = -.32$) among faculty in highly autonomous departments and a positive orientation to the department ($r_s = +.30$) on the part of faculty in departments with low autonomy.

Orientation to the department as a reference group ranged from a high of 52.8 per cent among faculty in departments with a medium degree of autonomy and a low amount of discussion with university administration to a low of 19.8 per cent of the faculty in departments where the collegial power of the departmental faculty as a whole and departmental autonomy were high. The hypothesis that orientation to the department as a reference group would be highest in departments characterized by a medium degree of departmental autonomy was supported in seven of the nine conditions under which significant relationships emerged. Thus, high orientation to the department appeared to occur when medium autonomy was associated with low emphasis upon graduate instruction or basic research. Departmental orientations were also prominent when an external power pattern was evident whereby faculty, individually, and collectively, have low influence although the total amount of communication, particularly with the university administration and department chairman are low.

Reference Group Discipline

Hypothesis.--Orientation to the discipline as a reference group will be directly related to the degree of departmental autonomy.

The Spearman rank order correlation coefficients between the degree of disciplinary reference group orientation and the degree of departmental orientation, as noted in Table 1, were generally inconsistent. The opposite direction of the correlations for departments with high ($r_s = +.29$) and low autonomy ($r_s = -.22$) indicate how important the degree of autonomy, itself, may be in determining reference group orientation. It is not surprising, then, that the direct hypothesized relationship between the degree of disciplinary orientation and the degree of departmental autonomy held in only two of nine instances.

In seven of the nine conditional relationships noted in Table A-8, however, a disciplinary orientation was strongest in departments where high autonomy was combined with low emphasis upon undergraduate or graduate instruction, low individual or collective influence of departmental faculty and low total communication, particularly with the department chairman and with university administration. Thus, except for the varying degrees of autonomy and differing emphases upon undergraduate instruction and basic research, orientation to the department and to the discipline appear to be associated with many of the same factors.

Orientation to the discipline as a reference group ranged from highs of 59.0 per cent in departments with high autonomy and low emphasis upon graduate instruction and 59.8 per cent in departments with high autonomy and low discussion with the department head to a low of 32.4 per cent among faculty in departments with a medium degree of autonomy and low discussion with university administration.

Communication

Group Communication Means

Hypotheses:

A. The relationship between departmental autonomy and the total amount of communication by a department will be curvilinear. Individuals within departments with a medium degree of autonomy will communicate more frequently with persons internal or external to the department than will persons in departments with high or low degrees of autonomy.

B. The relationship between departmental autonomy and the amount of communication with persons external to the department will be curvilinear. Individuals within departments with a medium degree of autonomy will communicate more frequently with persons outside of their own department than will persons in departments with high or low degrees of autonomy.

C. The relationship between departmental autonomy and the amount of internal communication within departments will be curvilinear. Individuals within departments with a medium degree of autonomy will communicate more frequently with persons within their own department than will persons in departments with high or low degrees of autonomy.

Table 13 presents the individual and group communication means for departments of high, medium, and low autonomy and notes the contrasts of means which, when compared, were significantly different from one another. The only group communication means in which significant variation existed were in regard to internal communication. In this instance, the mean for internal communication was significantly lower in departments of low autonomy (3.01) than the means in departments of high (3.17) or medium (3.18) autonomy. The group internal communication mean (3.14) was much higher than the mean for external communication (1.61).

Internal Communication

As might be expected, and as noted by the individual communication means in Table 13 which were all significantly different from each other, the greatest amount of internal communication took place among faculty within the department (3.88), while the department chairman (3.52), chairmen of special departmental committees (2.96), and

Table 13.--Relationship between individual and group communication means and faculty perception of departmental autonomy.

	Departmental Autonomy			Significant Contrasts of Means		
	1 High	2 Medium	3 Low	1-2	1-3	2-3
Total Communication	2.37	2.40	2.32	-	-	-
Internal Communication						
With Department Faculty	3.17	3.18	3.01	-	.01	.01
With Department Chairman	3.89	3.89	3.86	-	-	-
With Chairmen of Special	3.63	3.60	3.32	-	.001	.01
Departmental Committees	3.00	3.09	2.80	-	.05	.01
With Graduate Students	2.17	2.15	2.07	-	-	-
External Communication						
Outward Communication	1.59	1.60	1.64	-	-	-
With Faculty in Other Depts.	1.59	1.64	1.69	-	-	-
With Chairmen Other Depts.	1.73	1.81	1.88	-	.05	-
Or Institutes	1.46	1.48	1.49	-	-	-
Upward Communication						
With Dean	1.59	1.57	1.60	-	-	-
With University Adminis-	1.76	1.66	1.74	-	-	-
tration	1.41	1.49	1.46	-	-	-

graduate students (2.23) were consulted significantly less often. Findings in regard to each of these individual communication variables are reported in the order of the frequency of consultation. Hypotheses are not stated relating the individual communication variables to the degree of departmental autonomy because implicit in the hypotheses that the group communication means will be highest in departments of medium autonomy is the assumption that individual communication means will also be higher under this condition.

Discussion with Departmental Faculty

Although communication was most frequent with one's colleagues within his own department the data in Tables 13 and 14 indicate virtually no difference in regard to the frequency with which faculty in departments with varying degrees of autonomy consult with each other. Communication with departmental colleagues was, thus, uniformly high.

When the twenty-four test factors were introduced into the analysis of the relationship between the degree of discussion with one's departmental colleagues and the degree of departmental autonomy, significant variation was noted in only one of the seventy conditional relationships. As more than one significant relationship could have been expected to occur by chance, further reporting of findings is not warranted.

Table 14.--Relationship between the amount of discussion with the faculty in one's department and faculty perception of departmental autonomy.

Discussion with Departmental Faculty	Departmental Autonomy			Total	N
	High	Medium	Low		
Very Great	24.1	25.4	25.0	24.8	306
Great	47.2	43.7	41.7	44.2	544
Some, Slight or None	28.7	30.9	33.3	31.0	382
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>1232</u>
N	407	405	420		

$$\chi^2 = 3.01$$

$$df = 4$$

$$p > .05$$

Discussion with Department Chairman

If one examines the percentage of faculty in departments of high, medium and low autonomy who indicated either a slight degree of communication or no communication at all with the department chairman, as noted in Table 15, a direct relationship is evident. At the other extreme, a very great amount of communication with the department chairman was most common in departments characterized by a medium degree of autonomy. Further indication of a direct relationship is given, however, when one notes that the mean amounts of discussion with the department chairman were significantly higher in departments with high (3.63) or medium (3.60) autonomy than in departments with a low (3.32) degree of autonomy. The correlation between departmental autonomy and discussion with the department chairman for all departments ($r_s = +.09$) was insignificant

with negative correlations of borderline significance in departments of high ($r_s = -.30$) and low ($r_s = -.29$) autonomy.

Table 15.--Relationship between the amount of discussion with the department chairman and faculty perception of departmental autonomy.

Discussion with Department Chairman	Departmental Autonomy				N
	High	Medium	Low	Total	
Very Great	24.9	28.0	21.3	24.7	304
Great	30.3	27.0	22.2	26.5	326
Some	31.3	27.8	30.9	30.0	369
Slight or None	13.5	17.2	25.6	18.8	232
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>1231</u>
N	406	407	418		

$$\chi^2 = 26.63***$$

$$df = 6$$

$$p \leq .001$$

Table A-9 shows that, with the introduction of twenty-four test factors, a significant direct relationship between departmental autonomy and discussion with the department chairman was present in nineteen of the seventy conditional relationships examined. A significant sub-pattern of variation in fourteen instances was for communication with the department chairman to be highest in departments with a medium degree of autonomy. Departments exhibiting this sub-pattern also exhibited a great deal of communication with all other elements of the university, a

high university reference orientation, high emphasis upon undergraduate instruction and high influence of the departmental faculty as a whole.

The percentage of faculty members who indicated that they discussed departmental affairs to a very great extent with the department chairman ranged from a high of 41.5 per cent in departments within privately supported institutions with a medium degree of autonomy to a low of 13.9 per cent in departments characterized by a medium amount of discussion of departmental matters with departmental faculty and a low degree of autonomy.

Discussion with Chairmen of Special Departmental Committees

No consistent linear relationships between the degree of communication with the chairmen of special departmental committees and the degree of departmental autonomy, as noted by the Spearman rank order correlation coefficients in Table 1, were evident. The mean amounts of communication with the chairmen of special departmental committees, as indicated in Table 13, were, however, significantly higher in departments of high (3.00) and medium autonomy (3.09) than in departments with low autonomy (2.80). This trend was evident also in the display of data in Table 16 and contributed, undoubtedly, to the significance of the chi square value which was obtained.

Table 16.--Relationship between the amount of discussion with chairmen of special departmental committees and faculty perception of departmental autonomy.

Discussion with Chairmen of Special Departmental Committees	Departmental Autonomy			Total	N
	High	Medium	Low		
Very Great or Great	33.7	35.3	27.6	32.1	392
Slight	36.6	37.8	35.0	36.5	445
None	29.7	26.8	37.4	31.4	383
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>1220</u>
N	404	399	417		

$$\chi^2 = 12.55^*$$

$$df = 4$$

$$p \leq .05$$

Seeking to obtain further evidence as to the strength of the relationship between departmental autonomy and communication with the chairmen of special departmental committees and the conditions under which this relationship was present, twenty-four test factors were introduced into the analysis. The results are noted in Table A-10. Significant variation was noted in only nineteen of the seventy conditional relationships examined. In thirteen of the nineteen relationships, the overall trend, which was for the most discussion with the chairmen of special departmental committees to take place in departments with medium autonomy and for the least amount of communication to take place in departments with low autonomy, was repeated. The fact that this trend was particularly evident

in larger departments and in departments in public supported institutions which tended to be larger, suggests that these committees may be operational in nature, reflecting a division of labor found in most complex organizations. Discussion with the chairmen of special departmental committees appeared to be associated with a relatively high total amount of communication, particularly with one's colleagues and with the university administration.

The percentage of faculty indicating a very great or great amount of discussion with the chairmen of special departmental committees ranged from a high of 41.4 per cent for faculty in departments with medium autonomy and more than thirty faculty members to a low of 17.5 per cent in departments characterized by high autonomy as well as a low emphasis upon basic research.

Discussion with Graduate Students

Although the communication means for discussion with graduate students noted in Table 13 tended to increase as the degree of autonomy increased and a very slight direct relationship might be detected between the two variables from the data in Table 17, the insignificance of the chi square and the Spearman rank order correlation coefficients fail to indicate a clear relationship.

Table 17.--Relationship between the amount of discussion with graduate students and faculty perception of departmental autonomy.

Discussion with Graduate Students	Departmental Autonomy			Total	N
	High	Medium	Low		
Very Great, Great or Some	34.2	33.0	29.6	32.3	397
Slight	38.9	40.2	39.9	39.6	488
None	26.9	26.8	30.5	28.1	346
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>1231</u>
N	409	403	419		

$\chi^2 = 2.93$
 $df = 4$
 $p > .05$

Similarly, when the twenty-four test factors were introduced into the analysis, only ten of the seventy conditional relationships examined indicated a significant amount of variation. Among the ten significant relationships, discussion with graduate students showed a direct relationship to the degree of departmental autonomy in six instances and an inverse relationship in two instances. Discussion with graduate students was most frequent under conditions of medium autonomy in four instances. Discussion with graduate students was more common when high autonomy was coupled with public support, a high amount of upward communication, particularly with the university administration, or a low degree of support from outside research funds.

These findings suggest that communication with graduate students may be greater when graduate student support comes from the university rather than outside funds. Thus, for example, a teaching assistantship may provide an opportunity for a greater amount of communication with a larger number of faculty than would a research assistantship. The greater degree of upward communication found when discussion with graduate students was high might, in turn, be due to the politicking involved with securing support for a department's graduate students. The percentage of faculty indicating at least some discussion with graduate students about departmental affairs ranged from a high of 42.9 per cent in departments characterized by a medium degree of autonomy and a low orientation to the department as a reference group to a low of 19.4 per cent when low autonomy was combined with a high ratio of research to general fund dollars.

External Communication

As indicated by the group communication means in Table 13, external communication (1.61) was much less frequent than internal communication (3.14). Within the category of external communication the mean amount of outward communication to chairmen of other departments or institutes and faculty of other departments (1.61), was approximately as frequent as upward communication to the dean or other university administrators (1.59).

Generally, as shown by the communication means in Table 13, when faculty members wanted to discuss departmental matters with someone outside of their immediate department, they turned to faculty members outside of their department (1.81), before consulting with the dean (1.72), chairmen of other departments or institutes (1.48) or university administration (1.45).

Discussion with Faculty in Other Departments

The data in Table 18 would lend some support to an hypothesis that an inverse relationship exists between the degree of departmental autonomy and the amount of discussion with faculty outside of the department. Communication with faculty outside of the department, as noted by the communication means in Table 13, decreased as autonomy increased with faculty in departments with high autonomy (1.73) communicating with faculty outside of the department significantly less often than faculty in departments with a low degree of autonomy (1.88).

The analysis of data through the use of the chi square technique for determining statistical significance, Spearman rank order correlation coefficients, and analysis of variance all indicated a significant inverse relationship between departmental autonomy and communication with faculty outside of the department. However, when the twenty-four test factors were introduced into the analysis

the significant inverse relationship held in only ten of the seventy conditions examined while in five additional instances communication with external faculty was highest within departments characterized by medium autonomy.

Table 18.--Relationship between the amount of discussion with faculty outside of department and faculty perception of departmental autonomy.

Discussion with Faculty Outside of Department	Departmental Autonomy			Total	N
	High	Medium	Low		
Very Great, Great, Some or Slight	52.2	61.4	61.7	58.5	712
None	47.8	38.6	38.3	41.5	505
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>1217</u>
N	405	394	418		

$$\chi^2 = 9.49^{**}$$

$$df = 2$$

$$p \leq .01$$

When combined with a high degree of departmental autonomy such factors as public support, a high amount of democracy in departmental decision making, a low degree of outside research support, and low orientation to the university as a reference group were associated with a relatively high amount of communication with faculty outside the department. Similarly, when a medium degree of departmental autonomy was combined with high personal influence of individual professors or small departmental size (5-19 members), discussion with faculty outside of one's department was more frequent.

Again, the data point to the importance of departmental size as related to communication with various elements internal and external to the department. Thus significant Spearman rank order correlation coefficients for all departments between the number of faculty in the ranks of assistant professor and above and communication with various persons were as follows:

Variables	r_s with Size of A Faculty
Discussion with Dean	-.49***
Discussion with Department Chairman	-.40***
Discussion with Chairmen of Special Departmental Committees	+.32**
Discussion with Chairmen of Other Departments or Institutes	-.32**
Discussion with Faculty in Other Departments	-.25*

The percentage of faculty members indicating at least a slight degree of communication with faculty outside of one's department ranged from a high of 76.7 per cent in departments with less than twenty faculty and a medium degree of autonomy to a low of 45.3 per cent of the faculty in departments combining high autonomy with a low reference group orientation to the university.

Discussion with the Dean

None of the Spearman rank order correlation coefficients in Table 1 and none of the contrasts of

communication means in Table 13 were significant. At least a slight degree of communication with the dean somewhat unexpectedly, was associated more often with high autonomy while communication was least frequent when a medium degree of autonomy was present. When the twenty-four test factors were introduced into the analysis, significant variation existed in eleven of the seventy conditional relationships.

Table 19.--Relationship between the amount of discussion with the dean and faculty perception of departmental autonomy.

Amount of Discussion With the Dean	Departmental Autonomy			Total	N
	High	Medium	Low		
Very Great, Great, Some or Slight	47.9	40.8	45.4	44.7	551
None	52.1	59.2	54.6	55.3	681
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>1232</u>
N	407	404	421		

$$\chi^2 = 4.21$$

$$df = 2$$

$$p > .05$$

In ten out of eleven instances, in accordance with the general trend, communication with the dean was least frequent when a medium degree of departmental autonomy was perceived. Thus, when a medium degree of departmental autonomy was also associated with such factors as large departmental size or high orientation to either

the department or the discipline as a reference group, communication with the dean was relatively less common than in departments with a high or low degree of autonomy.

The percentage of faculty indicating at least some discussion of departmental matters with the dean ranged from a high of 65.7 per cent in departments where high autonomy was combined with a highly influential dean to a low of 27.8 per cent in large departments with more than thirty faculty members in the rank of assistant professor and above and a medium degree of perceived autonomy.

Discussion with Chairmen of Other Departments or Institutes

No consistent relationships between the degree of departmental autonomy and the amount of communication with the chairmen of other departments or institutes were apparent through the chi square analysis noted in Table 20 or through the examination of Spearman rank order correlation coefficients and discussion means noted in Table 13.

When the twenty-four test factors were introduced into the analysis, only seven of the seventy conditional relationships which emerged exhibited any significant variation. Here, the combination of a low degree of autonomy with small departmental size, a weak department chairman, or a low orientation to the university as a reference group were most prominently associated with the discussion of departmental affairs with the chairman of other departments or institutes.

Table 20.--Relationship between the amount of discussion with chairmen of other departments or institutes and faculty perception of departmental autonomy.

Discussion with Chairmen of Other Departments	Departmental Autonomy			Total	N
	High	Medium	Low		
Very Great, Great, Some or Slight	35.5	36.9	36.0	36.1	444
None	64.5	63.1	64.0	63.9	785
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>1229</u>
N	406	404	419		

$\chi^2 = 0.18$
 $df = 2$
 $p > .05$

A medium degree of departmental autonomy combined with a low orientation to the department was also associated with relatively greater communication with the chairmen of other departments or institutes. The percentage of faculty members in a department who discussed departmental matters with the chairmen of other departments or institutes ranged from a high of 59.3 per cent in departments with weak chairmen and low autonomy to a low of 20.9 per cent in departments characterized by high autonomy and a medium degree of orientation to the department as a reference group.

Discussion with University Administrators

The chi square value noted in Table 21, the Spearman rank order correlation coefficients between the degree

of departmental autonomy and the percentage of faculty who indicate that they have some communication with university administrators, and the communication means in Table 13 point to no consistent relationship between the two variables.

Table 21.--Relationship between the amount of discussion with university administrators and faculty perception of departmental autonomy.

Discussion with University Administrators	Departmental Autonomy			Total	N
	High	Medium	Low		
Very Great, Great, Some or Slight	30.2	33.6	30.5	31.4	385
None	69.8	66.4	69.5	65.6	840
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>1225</u>
N	404	402	419		

$$\chi^2 = 1.30$$

$$df = 2$$

$$p > .05$$

Of the six significant conditional relationships that emerged when the twenty-four test factors were introduced, five indicated that discussion with university administrators was more frequent under conditions of medium rather than high or low departmental autonomy. Thus the combination of a medium degree of autonomy with a high orientation to the university as a reference group, high discussion with the dean, small departmental size, low democracy in departmental decision making or a weak

department chairman were all associated with a relatively high percentage of faculty who discussed departmental affairs with university administrators. The percentage of faculty members who discussed departmental affairs with university administrators ranged from a low of 24.3 per cent in departments where low autonomy was combined with high discussion with one's faculty colleagues in his own department to a high of 51.0 per cent of the faculty in departments characterized by a medium degree of autonomy as well as a high orientation to the university as a reference group.

Summary

Attempts to summarize the findings of this study are difficult due both to the volume of data and to the lack of any clear decision-rules as to when the data point either to a confirmation or rejection of a given hypothesis. In general, a hypothesis was regarded as being supported if the chi square analysis of data, Spearman rank order correlation coefficients, and the means for appropriate variables obtained from an analysis of variance were consistent with each other.

Applying the criterion of consistency, only four of the sixteen stated hypotheses were supported including those which hypothesized:

1. An inverse relationship between the degree of departmental autonomy and the influence of the department chairman,
2. A direct relationship between the degree of departmental autonomy and the influence of the departmental faculty as a whole,
3. A direct relationship between the degree of departmental autonomy and emphasis upon graduate instruction,
4. A direct relationship between the degree of departmental autonomy and emphasis upon basic research.

In addition, for three of the sixteen stated hypotheses, a significant relationship between the degree of departmental autonomy and a dependent variable was evident. However, the data did not support these hypothesized relationships between the degree of departmental autonomy and:

1. The individual faculty member's personal influence,
2. The amount of emphasis placed upon undergraduate instruction,
3. Internal communication.

A more complete explanation of the manner in which these findings varied from those which were expected is found in the summary section at the beginning of Chapter V.

The remaining nine hypotheses were not supported by the data, nor was significant variation between the degree of departmental autonomy and the particular dependent variable evident. However, in each of these nine instances, when data were analyzed through the process of elaboration, except for the influence of the departmental

faculty as a whole, at least six of the seventy conditional relationships examined showed significant variation between the degree of departmental autonomy and the particular dependent variable. Also, in three of the nine relationships where no significant relationship was evident, data tended to be in the direction of the stated hypothesis. This was the case in regard to the hypothesized relationship between departmental autonomy and:

1. Favorable ratings in the Cartter report,
2. The percentage of faculty members within a given department holding joint appointments,
3. Orientation to the department as a reference group.

In addition, although hypotheses were not stated in regard to the eight individual discussion variables, significant variation was found to exist between the degree of departmental autonomy and:

1. Discussion with the department chairman,
2. Discussion with the chairmen of special departmental committees,
3. Discussion with faculty outside of the department.

A more complete explanation of these findings is also found in the summary section at the beginning of Chapter V.

CHAPTER V

SUMMARY, DISCUSSION, IMPLICATIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

The first section of this chapter provides a summary of findings. The second section is devoted to a discussion of these findings while part three explores some of the implications of the study and the last section indicates some recommendations for further research.

Summary of Findings

The purpose of this study was to examine the manner and conditions under which departments and individuals within departments characterized by high, medium, or low degrees of departmental autonomy differed in regard to departmental characteristics, influence of various actors within the department, emphasis upon primary departmental goals, reference group orientation, and communication patterns. The findings are summarized below.

Departmental Characteristics

1. No significant relationship was found to exist between the degree of departmental autonomy and a favorable rating in the Cartter report (Table 2).

2. No significant relationship was found to exist between the degree of departmental autonomy and the percentage of faculty members within a department who held joint appointments (Table 3).
3. No significant relationship was found to exist between the degree of departmental autonomy and the percentage of faculty members in departments who noted one or more problems designated by source as internal. However, there was a strong tendency for low departmental autonomy to be associated with a high percentage of faculty members who noted one or more problems classified by source as internal to the department (Table 4).
4. No significant relationship was found to exist between the degree of departmental autonomy and the percentage of faculty members in a given department who noted one or more problems classified by source as external to the department (Table 5).

Influence

1. An extremely strong inverse relationship was found to exist between the degree of departmental autonomy and the perceived influence of the department chairman. This relationship held for virtually all departments except for those which had extensive support from fund sources external to the university (Table 6).
2. A strong direct relationship between the degree of departmental autonomy and the influence of the departmental faculty as a whole was found to exist under most conditions. A prominent sub-pattern of variation showed the influence of the departmental faculty as a whole to be particularly high in departments with a medium degree of autonomy (Table 7).
3. Significant non-linear variation was found to exist between the degree of departmental autonomy and the individual faculty member's perception of his own influence. Individuals in departments where the degree of autonomy was perceived as low were particularly apt to express low perceptions of their own personal influence (Table 8).

Emphasis

1. Significant non-linear variation was found to exist between the degree of departmental autonomy and the amount of emphasis placed upon undergraduate instruction as a departmental goal. There was a tendency for faculty in departments with a high degree of autonomy to place a low emphasis upon undergraduate instruction although the mean amounts of emphasis upon undergraduate instruction under conditions of high, medium, and low autonomy were not significantly different from each other (Table 9).
2. A significant direct relationship was found to exist between the degree of departmental autonomy and the amount of emphasis placed upon graduate instruction as a departmental goal due largely to the fact that faculty members in departments with a low degree of autonomy placed a low emphasis upon graduate instruction (Table 10).
3. A significant direct relationship was found to exist between the degree of departmental autonomy and the amount of emphasis placed upon basic research as a departmental goal. Emphasis upon basic research was particularly low when the degree of departmental autonomy was also low (Table 11).

Reference Group Orientation

1. No significant relationship was found to exist between the degree of departmental autonomy and the percentage of faculty members who were oriented to the university as a reference group (Table 12).
2. No overall significant linear relationship was found to exist between the degree of departmental autonomy and the percentage of faculty members who were oriented to the department as a reference group. However, in departments with high and low degrees of autonomy, there were significant inverse and significant direct relationships, respectively, between the degree of departmental autonomy and the percentage of faculty members within a given department who declared a departmental reference group orientation (Table 12).

3. No overall significant relationship was found to exist between the degree of departmental autonomy and the percentage of faculty members who were oriented to the discipline as a reference group (Table 12).

Communication

1. No significant relationship was found to exist between the degree of departmental autonomy and the average amounts of total or external discussion of departmental affairs with various elements within the university (Table 13).
2. Significant non-linear variation was found to exist between the degree of departmental autonomy and the amount of internal communication in regard to departmental affairs. The average amount of internal communication in a given department with the departmental faculty as a whole, the department chairman, the chairmen of special departmental committees and graduate students was significantly lower in departments characterized by a low rather than a medium or high degree of departmental autonomy (Table 13).
3. Discussion of departmental affairs with one's colleagues in his own department was significantly greater than communication with the department chairman or any other element within the university. However, no apparent relationship was found to exist between the degree of departmental autonomy and the amount of discussion of departmental affairs with other members of the departmental faculty (Table 14).
4. Significant inverse linear variation was found to exist between the degree of departmental autonomy and the degree to which departmental affairs were discussed with the department chairman. Discussion of departmental affairs with the department chairman was significantly less frequent in departments of low autonomy than in departments of medium or high autonomy (Table 15).
5. Significant non-linear variation was found to exist between the degree of departmental autonomy and the amount of discussion of departmental concerns with the chairmen of special departmental committees. Discussion of departmental affairs

was significantly greater in departments of high and medium autonomy than in departments with a low degree of autonomy (Table 16).

6. There was no significant relationship between the degree of departmental autonomy and the amount of discussion of departmental affairs with graduate students (Table 17).
7. A significant inverse relationship was found to exist between the degree of departmental autonomy and the amount of discussion of departmental affairs with faculty outside of the department, particularly in Cartter-rated departments, or in departments characterized by high autonomy. Discussion of departmental affairs with faculty members outside of the department was significantly lower in departments with high autonomy than in departments characterized by a low degree of autonomy (Table 18).
8. No significant relationship was found to exist between the degree of departmental autonomy and the degree to which departmental concerns were discussed with the dean (Table 19).
9. No significant relationship was found to exist between the degree of departmental autonomy and the amount of discussion of departmental affairs with chairmen of other departments or institutes (Table 20).
10. No significant relationship was found to exist between the degree of departmental autonomy and the amount of discussion of departmental affairs with university administrators (Table 21).
11. Size of the department, as indicated by the number of faculty members within each department in the rank of assistant professor and above, was found to be directly related to the amount of discussion with the chairmen of special departmental committees and inversely related to the amount of discussion with the dean, department chairman and the faculty or chairmen of other departments or institutes.

Discussion

In this section we turn our attention first to an examination of some of the reasons why it is probable that a number of the study's hypotheses were not confirmed. Here, an opportunity is presented to compare the findings of this study with those previously cited in the review of literature.

Next, a composite summary of findings is reviewed noting the probable reaction of administrators and faculty to departmental autonomy. The review serves to point out the probable lack of agreement between the two groups as to the desirability of a high degree of departmental autonomy.

Finally, on the basis of the study's findings and on the basis of a suggestion by Kornhauser, an attempt is made to make a case for the desirability of characteristics associated with departments possessing a medium degree of autonomy.

The hypothesis that departments with a medium degree of autonomy would be most likely to be favorably rated in the Cartter report may have been erroneous on several counts. The hypothesis was based primarily on the research conducted by Pelz and Andrews who found that, for scientists in research organizations, a medium degree of coordination provided a setting which appeared to improve performance.

One of the most obvious difficulties in attempting to generalize this finding to this particular sample was that most of Pelz and Andrews' respondents were scientists in private or governmental research laboratories, not university faculty members in a number of disparate disciplines. As such, their performance was judged in terms of the individual's contributions and usefulness to the organization as well as his output of reports, papers, and/or patents. On the other hand, it is uncertain just what a favorable rating in the Cartter report means.

Basically, the Cartter report appears to represent the verdict of a jury of one's peers in his discipline. Thus, such criteria as prestige and academic notability rather than performance in terms of institutional goals are emphasized. Dressel, Johnson and Marcus found that Cartter-rated departments are less involved in local institutional matters, and presumably enjoy greater freedom from university restrictions. Data noted in Table 2 would tend to support this finding as the percentage of departments rated favorably in the Cartter report tended to increase as the degree of departmental autonomy increased, although the trend was not statistically significant. In retrospect, perhaps a Cartter report rating is more of an indicator of extra-organizational outlook than a multifaceted measure of performance.

The inability of this study to replicate the findings of previous studies may be due to any number of factors including different sampling populations. However, it also points further to the paucity of research in regard to important processes within the university. Gross and Grambsch as well as Hill and French found in their studies that faculty enjoyed greater power in regard to college or university goals or policy than did the department chairman. However, in this study, most likely because the referent was the amount of influence various actors exerted in regard to departmental affairs--not matters of university-wide policy, the power of the department chairman was found to be significantly greater than the influence of the departmental faculty as a whole, except under the condition of high autonomy. Here, the influence of the department chairman was still greater than that of the faculty but the difference was not significant.

In regard to the relative emphasis which faculty perceive to be placed upon three primary departmental goals: those of undergraduate instruction, graduate instruction and basic research, the findings of this study were also quite different from those reported by Gross and Grambsch. Although Gross and Grambsch's sample was drawn from some sixty-eight universities as opposed to the fifteen universities included in this study, both studies

included only those faculty in departments which were offering graduate degree programs. Thus the differences are somewhat surprising.

Gross and Grambsch ranked the university-wide goals of carrying on pure research, encouraging graduate work, and emphasizing undergraduate instruction 7th, 18th, and 44th, respectively, in terms of their perceived importance. This study, with reference to departmental, rather than university goals found the perceived emphasis upon graduate instruction to be significantly higher than emphasis upon either basic research or undergraduate instruction.

Perhaps, again, the difference between the university and departmental reference points of the two studies in regard to goals is crucial with the higher emphasis which Gross and Grambsch's respondents perceived in regard to pure research reflecting the traditional image of the university as the discoverer of new knowledge. However, in reality, the lower emphasis accorded to basic research in this study may reflect the failure to allocate adequate resources at the departmental level. This may in turn cause the goal of basic research to be displaced by that of graduate instruction. In any case, undergraduate instruction appears to be truly the least of the brethren as both studies indicate that this goal receives the least emphasis among the three primary goals. Indeed, the relatively constant amount of emphasis placed upon

undergraduate instruction under conditions of high, medium and low autonomy may suggest that it, like the kid brother, is an ever present tag-along which must be tolerated.

Under the condition of low departmental autonomy, however, undergraduate instruction was found to receive a slightly greater emphasis than basic research. Returning to the analogy of the kid brother, this might suggest that as opportunities (funds) are unavailable to play with more desirable companions (basic research), as was generally found to be the case when autonomy was low, the little brother (undergraduate instruction) becomes more and more attractive as a playmate.

This study found virtually no linear relationship between the degree of departmental autonomy and the percentage of faculty in a department with university, departmental, or disciplinary reference group orientations. The few instances in which significant variation did exist were often in regard to the varying degrees of emphasis placed upon undergraduate and graduate instruction and basic research. Perhaps, if a large enough sample were available, the relative effects of departmental autonomy and departmental emphasis or goals could be distinguished from each other.

In regard to communication among various elements internal or external to the department but within the university, the findings of this study are not directly

comparable to those of Crane or Hagstrom who looked at disciplinary communication networks. Similarly, the findings of this study are not directly comparable to those of Pelz and Andrews whose findings in regard to communication were related to performance measures. The perhaps mistaken assumption to equate a medium degree of autonomy with a medium degree of coordination which Pelz and Andrews found to be associated with highest performance led the writer to hypothesize that communication among various elements internal and external to the department would be highest in departments characterized by a medium degree of autonomy.

In actuality, however, although a medium degree of autonomy was associated with the greatest amount of communication with the chairmen of special departmental committees, most differences were small. Indeed, perhaps the most significant finding which emerged from the analysis of the communication variables was in regard to the amount of discussion of departmental affairs with departmental faculty in departments with varying degrees of autonomy. Here, although discussion with departmental faculty was more frequent than discussion with any other element internal or external to the department, there was virtually no difference in the amount of discussion which took place, even when all twenty-four test factors were introduced into the analysis.

Somewhat unexpectedly, low autonomy was associated with the least amount of communication with the department chairman or with the chairmen of special departmental committees. These findings do, however, help account for the low amount of internal communication in regard to departmental affairs found in departments with low autonomy.

The administrator with concern for the university as a whole and the individual faculty member who look at the departmental characteristics which are correlated with departmental autonomy as noted in Table 1, may have mixed reactions. Depending upon whether the administrator prefers a strong or weak department chairman, he will look with disfavor or favor upon the relatively weak influence exerted by department chairman in departments with high or medium autonomy. He may also view the greater democracy of departmental decision making which characterizes departments of relatively high autonomy as threatening. Similarly, if the administrator views the vesting of collegial power in the hands of the departmental faculty as harmful to university interest, he will be unhappy about the collective power of faculty members in autonomous departments.

In regard to the perceived emphasis placed upon particular departmental goals, the administrator may view the positive correlation between departmental autonomy and emphasis upon graduate instruction or basic research as

contributing further to the compartmentalization of the university. On the other hand, faculty are likely to regard increased departmental autonomy as a precondition necessary for achievement of the valued goals of advancing knowledge and training scholars.

Findings in regard to the relationship between departmental and disciplinary reference group orientations of faculty and the degree of departmental autonomy are likely to disturb the administrator. Here, particularly in departments characterized by high autonomy, orientation to the department was low. Similarly, the administrator who was intent upon improving communication among various elements within the university is likely to attempt to curb autonomy when he finds that in departments with high autonomy, there is a negative correlation between the amount of departmental autonomy and the total amount of communication with other elements, both internal and external to the department. The low total and outward communication, particularly with faculty in other departments and with the department chairman noted in high autonomy departments, on the other hand, are probably valued by the faculty member in that external interference is minimal.

The administrator and the faculty member, again, depending upon their individual perspectives when they look at some of the additional correlates of departmental autonomy indicated in Table A-12, are likely to regard

departmental autonomy as desirable or undesirable in that it is associated with a low preference for emphasizing undergraduate instruction, low influence of university committees, high concern for prestige, and increased emphasis upon professional activities outside of the university. The administrator, feeling that many other departments may be just as deserving, may also fail to appreciate the fact that highly autonomous departments, and particularly Cartter-rated departments, enjoy a number of perquisites which come with the relatively high amount of general fund dollars expended per faculty member, i.e., greater access to funds for supplies and equipment and a higher percentage of faculty members with private offices.

The administrator, as well as the faculty member, may on the other hand, take pride in the ability of autonomous, and particularly Cartter-rated departments, to attract research dollars although this pride may be tempered by the remembrance of the headaches encountered in securing these funds. Administrators and faculty may also tend to look with favor upon the positive correlation between departmental autonomy and the production of Ph.D. degrees. Particularly disturbing to the administrator, however, would be the tendency, as noted in Table A-12, for faculty members in departments with high autonomy to state that departmental autonomy should not be controlled.

The preceding section failed to indicate correlates of either a high or low degree of departmental autonomy which both faculty and administrators could regard as being desirable. Much of the difficulty was, no doubt, due to the different perspectives which the two groups may generally be expected to adopt in regard to institutional matters. Thus, in this section, findings relative to departments characterized by a medium degree of autonomy are noted in an effort to cite outcomes which might generally be regarded as favorable to the university.

Admittedly, there may be much argument as to what characteristics are desirable from an institutional viewpoint. However, the analysis of data through the process of elaboration indicated that a medium degree of autonomy was positively associated with several communication and departmental characteristic variables. Although there was no overall significant relationship between the percentage of faculty members holding joint appointments and the degree of departmental autonomy, a medium degree of autonomy was most frequently associated with the incidence of joint appointments.

It appeared that a smaller percentage of faculty members in departments with medium autonomy indicated the existence of departmental problems of an internal nature which could be resolved by the department. On the other hand, a medium degree of departmental autonomy was

associated with a relatively high percentage of external problems, most notably in Cartter-rated departments and in departments characterized by a high amount of total communication and external communication, particularly with the dean. Taken together these findings suggest that a medium degree of departmental autonomy may be associated with rigorous pursuit of outside funds as evidenced by a greater number of external problems, relatively little internal conflict, and a fair amount of communication with various elements within the university.

Although there were few conditions under which significant relationships emerged between the degree of departmental autonomy and a particular reference group orientation, a strong departmental reference orientation was most often associated with a medium degree of departmental autonomy. A medium degree of departmental autonomy was also associated with increased communication. Thus, the amount of discussion of departmental affairs with various elements such as the department chairman, chairmen of special departmental committees and university administrators was highest in departments of medium autonomy in several instances. To the degree that the above findings associated with a medium degree of departmental autonomy appear to represent a lessening of internal conflict, a probable rigorous pursuit of outside funding possibilities, an intra-institutional reference group orientation (to the

department), and increased communication with other persons within the university, a medium degree of departmental autonomy may represent, as Kornhauser has suggested, an ideal toward which universities should strive.

Implications

The favorable outcomes for the university found to be associated with a medium degree of departmental autonomy may offer a ray of hope to the beleaguered administrator who, amid all the tumult and shouting of the disparate disciplines, is inclined toward much hand-wringing when he contemplates the fragmented nature of the multiversity. They serve to indicate that a medium degree of departmental autonomy can be associated with a number of characteristics which seem to indicate a degree of "departmental vitality." Thus, they tend to support the theses of such as Engel, Glaser, Caplow and McGee, and Pelz and Andrews that institutions and individuals need not be constantly at odds.

To be sure, a number of serious problems are associated with excessive degrees of departmental autonomy. But these problems are not unique to universities. The entrepreneurialism of the highly autonomous departments illustrates the dilemma between managerial planning and initiative which Blau and Scott note is common to all organizations. On the other hand, departments with low autonomy and relatively parochial concerns may exhibit tendencies toward stagnation which Hefferlin has noted.

The dilemma between hierarchical coordination and the free flow of communication, also noted by Blau and Scott, would seem to be lessened in the university which exhibits, in comparison to other formal organizations, a rather flat power structure. Direct contact with other units rather than hierarchical coordination could be enhanced through a greater number of joint appointments and the establishment of interdisciplinary teaching and research units. Holders of joint appointments can make valuable contributions to departments in that they represent "marginal men" who, if they are "loving critics" can offer fresh perspectives on a wide range of problems.

The most serious dilemma of formal organization facing the university which was noted by Blau and Scott is the conflict between bureaucratic discipline and professional expertness. The problem is heightened by both the multiplicity or lack of goals which are quantifiable and the extra-institutional orientation of many faculty members which facilitate the perennial clash between faculty and administration.

The clash is indicative, in part, of the problem which all organizations face in determining reward systems. It is complicated both by the fact that the university reward system, unlike in other organizations, is primarily based on values which are external to the university and do not take into account rewards for service to the institution.

Indeed, if additional subunits were added to the university which were designed to reward a particular competency, the benefits which would accrue from the faculty member's being able to pick the "league" in which he wishes to compete may outweigh the disadvantages of further compartmentalization.

Better attempts should be made to acquaint faculty members with institutional goals, rewards, and the limitations of institutional resources. A corps of professor-administrants who return to their faculty positions after a specified period could be helpful in this regard. At the same time, however, faculty members must recognize the necessity of accommodating their own personal interests to these goals and resources if the university is to continue as a rational entity.

Recommendations for Further Research

This research is significant from the standpoint that the question of autonomy or coordination is basic to the literature of complex organizations. The question of excessive departmental autonomy as oftentimes manifested by the department's disregard for institutional concerns interests administrators of higher education in that such organizational behavior is antithetical to the supposedly rational nature of the university.

In view of the limited volume and scope of research literature in higher education, this study represents a first attempt to construct a profile of the autonomous university department. Methodologically, this study is significant in that it, unlike most survey research in education, as noted by Trow, has not only described relationships but has also specified additional conditions under which the relationship is either changed or replicated.

The study was not without limitations. With some of these difficulties in mind, the following recommendations are made for further research in regard to departmental autonomy:

1. Additional research should draw upon a large enough number of institutions which are able to supply basic input-output data so that financial characteristics of a department such as the ratio of research to general fund dollars may be included in the definition of departmental autonomy without having to disregard the responses of those departments unable to supply such data.

2. Additional research should employ a large enough sample so that differences among disciplines may be analyzed. A larger sample would also permit in-depth analyses of two-variable relationships by allowing for the simultaneous introduction of two or more test factors.

3. Due to the lack of adequate or readily available performance measures in higher education, additional research along the lines of that undertaken by the Educational Testing Service should seek to identify desirable characteristics which indicate "institutional vitality."¹ These characteristics should then be analyzed in regard to the degree of departmental autonomy in order to determine the relationships between these variables.

The abuses caused by inordinate departmental self-interest may be due in part to the basic lack of information in regard to university operations and processes. If this is true, the ability to provide the information necessary to carry out the above recommendations for research may, in itself, go a long way toward limiting excessive departmental autonomy.

¹R. E. Peterson and D. E. Loye, eds., Conversations Toward a Definition of Institutional Vitality (Princeton: Educational Testing Service, 1968).

APPENDIX

Table A-1.--Relationship between percentage of faculty members holding joint appointments in departments and faculty perception of departmental autonomy as modified by the introduction of twenty-four test factors.

Test Factor	Test Factor			Sig. Inverse Relationship Emerges			Jt. Appts. Sig. Higher in Depts. with Med. Auton.			Jt. Appts. Sig. Lower in Depts. with Low Auton.		
	Categories			Categories			Categories			Categories		
	1	2	3	1	2	3	1	2	3	1	2	3
Cartter Rating	Not Rated	Rated	NA	-	-	NA	-	-	NA	-	-	NA
Support	Public	Private	NA	-	.01	NA	-	-	NA	-	-	NA
Size A Faculty	High	Med.	Low	-	-	Low	-	-	Low	.05	-	-
Democracy	High	Med.	Low	-	-	Low	-	-	.01	-	.01	-
\$ Res./\$ Gen. F.	High	Med.	Low	-	-	Low	-	-	-	-	-	-
Publication Rate	High	Med.	Low	-	-	Low	-	-	-	-	-	-
Inf. Dept. Fac.	High	Med.	Low	-	-	Low	-	-	.001	-	-	.05
Inf. Dept. Head	High	Med.	Low	-	-	Low	-	-	-	-	.01	-
Inf. Indiv. Fac.	High	Med.	Low	-	-	Low	-	-	-	-	-	-
Emp. Ugrad. Inst.	High	Med.	Low	-	-	Low	-	-	-	-	-	-
Emp. Grad. Inst.	High	Med.	Low	-	.05	Low	-	-	-	-	-	-
Emp. Basic Research	High	Med.	Low	-	-	Low	-	.01	-	.001	-	-
Ref. University	High	Med.	Low	-	.01	Low	.05	-	-	-	-	-
Ref. Department	High	Med.	Low	-	-	Low	-	-	.001	-	.05	-
Ref. Discipline	High	Med.	Low	-	-	Low	-	-	-	-	-	-
Discus. Dept. Head	High	Med.	Low	.01	-	Low	-	-	-	-	.01	-
Discus. Dept. Fac.	High	Med.	Low	-	-	Low	-	-	.001	-	.05	-
Discussion Dean	High	Med.	Low	-	-	Low	.001	-	-	-	.05	-
Discus. Univ. Adm.	High	Med.	Low	-	.05	Low	.05	-	-	-	-	-
Total Communication	High	Med.	Low	.01	-	Low	-	-	-	-	-	-
External Comm.	High	Med.	Low	-	-	Low	.001	-	-	-	-	-
Upward Comm.	High	Med.	Low	-	-	Low	.001	-	-	-	.01	-
Outward Comm.	High	Med.	Low	-	-	Low	.01	-	-	-	-	-
Internal Comm.	High	Med.	Low	-	-	Low	-	-	-	-	-	-
	2	4	2	7	1	4	2	7	1	2	7	1
	8			12			9			9		

Table A-2.--Relationship between faculty perception of the influence of the department chairman and faculty perception of departmental autonomy as modified by the introduction of twenty-four test factors.

Test Factor	Test Factor			Sig. Inverse Relationship Holds			Significant Relationship Vanishes			Other Sig. Relationship Present		
	Categories			Categories			Categories			Categories		
	1	2	3	1	2	3	1	2	3	1	2	3
Cartter Rating	Not Rated	Rated	NA	.001	.001	NA	-	-	NA	-	-	NA
Support	Public	Private	NA	.001	.001	NA	-	-	NA	-	-	NA
Size A Faculty	High	Med.	Low	.001	.001	.05	-	-	-	-	-	-
Democracy	High	Med.	Low	.001	.001	.001	-	-	-	-	-	-
\$ Res./\$ Gen. F.	High	Med.	Low	-	-	.001	x	x	-	-	-	-
Publication Rate	High	Med.	Low	.001	.001	.05	-	-	-	-	-	-
Inf. Dept. Fac.	High	Med.	Low	.001	.001	.001	-	-	-	-	-	-
Inf. Dept. Head	High	Med.	Low	.05	-	.001	-	-	x	-	-	-
Inf. Indiv. Fac.	High	Med.	Low	.05	.05	.001	-	-	-	-	-	-
Emp. Ugrad. Inst.	High	Med.	Low	.01	.001	.001	-	-	-	-	-	-
Emp. Grad. Inst.	High	Med.	Low	.001	-	.001	-	-	x	-	-	-
Emp. Basic Research	High	Med.	Low	.001	.001	.001	-	-	-	-	-	-
Ref. University	High	Med.	Low	.001	.001	.001	-	-	-	-	-	-
Ref. Department	High	Med.	Low	.001	.001	.001	-	-	-	-	-	-
Ref. Discipline	High	Med.	Low	.001	.001	.05	-	-	-	-	-	-
Discus. Dept. Head	High	Med.	Low	.001	.001	.001	-	-	-	-	-	-
Discus. Dept. Fac.	High	Med.	Low	.001	.001	.001	-	-	-	-	-	-
Discussion Dean	High	Med.	Low	.001	.001	.001	-	-	-	-	-	-
Discus. Univ. Adm.	High	Med.	Low	.001	.001	.001	-	-	-	-	-	-
Total Communication	High	Med.	Low	-	.001	.001	x	-	-	-	-	-
External Comm.	High	Med.	Low	.001	.001	.001	-	-	-	-	-	-
Upward Comm.	High	Med.	Low	.001	.001	.001	-	-	-	-	-	-
Outward Comm.	High	Med.	Low	.001	.001	.001	-	-	-	-	-	-
Internal Comm.	High	Med.	Low	.001	.001	.001	-	-	-	-	-	-
	22			22	21	22	2	3	0	0	0	0
					65			5			0	

Table A-3.--Relationship between faculty perception of the influence of the departmental faculty as a whole and faculty perception of departmental autonomy as modified by the introduction of twenty-four test factors.

Test Factor	Test Factor			Sig. Direct Relationship			Significant Relationship			Other Sig. Relationship		
	Categories			Holds			Vanishes			Appears		
	1	2	3	1	2	3	1	2	3	1	2	3
Cartter Rating	Not Rated	Rated	NA	.001	.001	NA	-	-	NA	-	-	NA
Support	Public	Private	NA	.001	.001	NA	-	-	NA	-	-	NA
Size A Faculty	High	Med.	Low	.001	.01	-	-	-	x	-	-	-
Democracy	High	Med.	Low	-	.001	-	x	-	x	-	-	-
\$ Res./\$ Gen. F.	High	Med.	Low	.001	-	.001	-	x	-	-	-	-
Publication Rate	High	Med.	Low	-	.001	.001	x	-	-	-	-	-
Inf. Dept. Fac.	High	Med.	Low	-	.05	-	x	-	x	-	-	-
Inf. Dept. Head	High	Med.	Low	.01	.001	-	-	-	-	-	-	.05*
Inf. Indiv. Fac.	High	Med.	Low	-	.001	.05	-	-	-	.01*	-	-
Emp. Ugrad Inst.	High	Med.	Low	.001	.001	.001	-	-	-	-	-	-
Emp. Grad. Inst.	High	Med.	Low	.001	-	.001	-	x	-	-	-	-
Emp. Basic Research	High	Med.	Low	-	.001	-	-	-	-	.001	-	.001*
Ref. University	High	Med.	Low	-	.001	.001	x	-	-	-	-	-
Ref. Department	High	Med.	Low	.001	.05	-	-	-	-	-	-	.01*
Ref. Discipline	High	Med.	Low	.01	.05	.001	-	-	-	-	-	-
Discus. Dept. Head	High	Med.	Low	.001	-	.001	-	x	-	-	-	-
Discus. Dept. Fac.	High	Med.	Low	.001	.001	.01	-	-	-	-	-	-
Discussion Dean	High	Med.	Low	.01	.001	.001	-	-	-	-	-	-
Discus. Univ. Adm.	High	Med.	Low	.001	.001	-	-	-	x	-	-	-
Total Communication	High	Med.	Low	.001	-	.001	-	-	-	-	.01*	-
External Comm.	High	Med.	Low	-	.001	.001	-	-	-	.01*	-	-
Upward Comm.	High	Med.	Low	.01	.001	.001	-	-	-	-	-	-
Outward Comm.	High	Med.	Low	-	.001	.01	-	-	-	.001*	-	-
Internal Comm.	High	Med.	Low	.001	.01	.01	-	-	-	-	-	-
	16	20	15	4	3	4	4	3	4	4	1	3
	51	51	11	11	11	8						

*The percentage of faculty members in departments attributing the greatest influence to the department faculty as a whole was highest in departments with medium autonomy.

Table A-4.--Relationship between faculty perception of personal influence and faculty perception of departmental autonomy as modified by the introduction of twenty-four test factors.

Test Factor	Test Factor			Sig. Direct Relationship			Significant Relationship Vanishes			Other Sig. Relationship Appears		
	Categories			Holds			Categories			Categories		
	1	2	3	1	2	3	1	2	3	1	2	3
Cartter Rating	Not Rated	Rated	NA	.001	-	NA	-	x	NA	-	-	NA
Support	Public	Private	NA	.001	-	NA	-	x	NA	-	-	NA
Size A Faculty	High	Med.	Low	.05	-	-	-	x	x	-	-	-
Democracy	High	Med.	Low	-	-	.001	x	x	-	-	-	-
\$ Res./\$ Gen. F.	High	Med.	Low	-	-	.001	x	x	-	-	-	-
Publication Rate	High	Med.	Low	-	-	.01	-	x	-	.05*	-	-
Inf. Dept. Fac.	High	Med.	Low	.01	-	-	-	x	x	-	-	-
Inf. Dept. Head	High	Med.	Low	.05	.01	-	-	-	-	-	-	.001*
Inf. Indiv. Fac.	High	Med.	Low	-	-	.05	x	x	-	-	-	-
Emp. Ugrad Inst.	High	Med.	Low	.01	.001	.05	-	-	-	-	-	-
Emp. Grad. Inst.	High	Med.	Low	-	.05	.01	x	-	-	-	-	-
Emp. Basic Research	High	Med.	Low	-	.01	-	x	-	x	-	-	-
Ref. University	High	Med.	Low	-	.001	-	-	-	-	.01*	-	.01*
Ref. Department	High	Med.	Low	.001	.05	-	-	-	-	-	-	.05*
Ref. Discipline	High	Med.	Low	-	-	.001	-	x	-	.05*	-	-
Discus. Dept. Head	High	Med.	Low	-	-	.001	x	-	-	-	.05*	-
Discus. Dept. Fac.	High	Med.	Low	.01	.001	-	-	-	x	-	-	-
Discussion Dean	High	Med.	Low	.01	-	.001	-	x	-	-	-	-
Discus. Univ. Adm.	High	Med.	Low	.01	.001	.05	-	-	-	-	-	-
Total Communication	High	Med.	Low	-	-	.001	x	-	-	-	.01*	-
External Comm.	High	Med.	Low	-	.001	-	x	-	-	-	-	.001*
Upward Comm.	High	Med.	Low	-	.05	.001	x	-	-	-	-	-
Outward Comm.	High	Med.	Low	-	.001	.05	x	-	-	-	-	-
Internal Comm.	High	Med.	Low	-	-	.001	x	x	-	-	-	-
	10	11	14	11	11	11	11	11	4	3	2	4
	35			26			9					

*The perception of a faculty member's personal influence was highest in departments with a medium degree of autonomy and lowest in departments with low autonomy.

Table A-5.--Relationship between faculty perception of emphasis placed upon undergraduate instruction and faculty perception of departmental autonomy as modified by the introduction of twenty-four test factors.

Test Factor	Test Factor			Sig. Inverse Relationship Holds			Significant Relationship Vanishes			Other Sig. Relationship Appears		
	Categories			Categories			Categories			Categories		
	1	2	3	1	2	3	1	2	3	1	2	3
Cartter Rating	Not Rated	Rated	NA	-	-	NA	x	x	NA	-	-	NA
Support	Public	Private	NA	.001	-	NA	-	-	NA	-	.001*	NA
Size A Faculty	High	Med.	Low	-	-	-	x	-	x	-	.05*	-
Democracy	High	Med.	Low	.001	-	-	-	x	x	-	-	-
\$ Res./\$ Gen. F.	High	Med.	Low	-	.01	-	-	x	x	-	-	-
Publication Rate	High	Med.	Low	.05	.05	-	-	-	x	-	-	-
Inf. Dept. Fac.	High	Med.	Low	-	-	-	-	x	x	.001*	-	-
Inf. Dept. Head	High	Med.	Low	-	-	-	x	x	x	-	-	-
Inf. Indiv. Fac.	High	Med.	Low	-	-	.01	x	x	-	-	-	-
Emp. Ugrad. Inst.	High	Med.	Low	-	-	-	x	x	x	-	-	-
Emp. Grad. Inst.	High	Med.	Low	-	-	.01	x	x	-	-	.05*	-
Emp. Basic Research	High	Med.	Low	-	-	-	x	-	-	.01	-	-
Ref. University	High	Med.	Low	-	-	.001	x	-	-	.01 ⁺	.001	-
Ref. Department	High	Med.	Low	-	.01	-	-	-	x	-	-	.01 ⁺
Ref. Discipline	High	Med.	Low	.05	.05	-	-	-	-	-	-	-
Discus. Dept. Head	High	Med.	Low	.05	-	.05	-	x	-	-	-	-
Discus. Dept. Fac.	High	Med.	Low	-	.01	-	x	-	x	-	.01*	.01 ⁺
Discussion Dean	High	Med.	Low	-	-	-	x	-	x	.05 ⁺	-	-
Discus. Univ. Adm.	High	Med.	Low	-	-	-	-	x	-	-	-	-
Total Communication	High	Med.	Low	-	-	-	x	x	x	-	-	-
External Comm.	High	Med.	Low	-	-	-	x	x	x	-	.001*	-
Upward Comm.	High	Med.	Low	-	-	-	x	-	x	-	-	-
Outward Comm.	High	Med.	Low	-	.01	-	-	-	-	.01 ⁺	-	-
Internal Comm.	High	Med.	Low	-	-	.01	x	x	-	-	-	-
	5	6	5	5	6	5	14	12	15	5	6	2
	16			41			13					

*Greatest emphasis upon undergraduate instruction was in departments with medium autonomy; least emphasis found in departments with high autonomy.

⁺Greatest emphasis upon undergraduate instruction was in departments with medium autonomy.

Table A-6.--Relationship between faculty perception of emphasis placed upon graduate instruction and faculty perception of departmental autonomy as modified by the introduction of twenty-four test factors.

Test Factor	Test Factor			Sig. Direct Relationship Holds			Significant Relationship Vanishes			Other Sig. Relationship Appears		
	Categories			Categories			Categories			Categories		
	1	2	3	1	2	3	1	2	3	1	2	3
Cartter Rating	Not Rated	Rated	NA	.001	-	NA	-	x	NA	-	-	NA
Support	Public	Private	NA	.001	-	NA	-	x	NA	-	-	NA
Size A Faculty	High	Med.	Low	-	-	-	x	x	x	-	-	-
Democracy	High	Med.	Low	-	-	.05	x	x	-	-	-	-
\$ Res./\$ Gen. F.	High	Med.	Low	-	-	.001	x	x	-	-	-	-
Publication Rate	High	Med.	Low	-	-	-	x	x	x	-	-	-
Inf. Dept. Fac.	High	Med.	Low	-	-	-	x	x	x	-	-	-
Inf. Dept. Head	High	Med.	Low	.05	-	-	-	x	x	-	-	-
Inf. Indiv. Fac.	High	Med.	Low	-	-	-	x	x	-	-	-	.05*
Emp. Ugrad. Inst.	High	Med.	Low	.05	.001	-	-	-	x	-	-	-
Emp. Grad. Inst.	High	Med.	Low	-	-	-	x	x	x	-	-	-
Emp. Basic Research	High	Med.	Low	-	-	-	x	x	x	-	-	-
Ref. University	High	Med.	Low	-	-	-	-	x	x	.05*	-	-
Ref. Department	High	Med.	Low	.05	.001	-	-	-	-	-	-	.01*
Ref. Discipline	High	Med.	Low	-	-	.001	x	-	-	-	.05*	-
Discus. Dept. Head	High	Med.	Low	.05	-	-	-	x	x	-	-	-
Discus. Dept. Fac.	High	Med.	Low	.05	-	-	-	-	x	-	.01*	-
Discussion Dean	High	Med.	Low	-	-	-	-	x	x	.05*	-	-
Discus. Univ. Adm.	High	Med.	Low	.05	-	-	-	x	x	-	-	-
Total Communication	High	Med.	Low	.01	-	-	-	x	x	-	-	-
External Comm.	High	Med.	Low	-	-	-	x	x	x	-	-	-
Upward Comm.	High	Med.	Low	-	-	.01	x	x	-	-	-	-
Outward Comm.	High	Med.	Low	-	.01	-	x	-	x	-	-	-
Internal Comm.	High	Med.	Low	.05	-	-	-	x	x	-	-	-
	10	3	4	12	19	16	2	2	2	2	2	2
	17			47			6					

*Emphasis upon graduate instruction was lowest in departments with low autonomy and highest in departments with medium autonomy.

Table A-8.--Relationship between reference group orientations of faculty and faculty perception of departmental autonomy as modified by the introduction of twenty-four test factors.

Test Factor	Test Factor			Ref. U Inverse Relationship to Autonomy?			Ref. Dept. Highest for Depts. of Medium Aut.?			Ref. Discipline Directly Related to Autonomy?		
	Categories			Categories			Categories			Categories		
	1	2	3	1	2	3	1	2	3	1	2	3
Cartter Rating	Not	Rated	NA	-	-	NA	-	-	NA	-	-	NA
Support	Public	Private	NA	-	-	NA	-	-	NA	-	-	NA
Size A Faculty	High	Med.	Low	-	-	-	-	-	-	-	-	-
Democracy	High	Med.	Low	-	-	-	-	-	-	-	-	-
\$ Res./\$ Gen. F	High	Med.	Low	-	-	-	-	-	-	-	-	-
Publication Rate	High	Med.	Low	-	-	-	-	-	-	-	-	-
Inf. Dept. Fac.	High	Med.	Low	-	-	-	-	-	Yes	-	-	No*
Inf. Dept. Head	High	Med.	Low	-	-	-	-	-	-	-	-	-
Inf. Indiv. Fac.	High	Med.	Low	-	-	-	-	-	-	-	-	-
Emp. Ugrad. Inst.	High	Med.	Low	-	-	-	-	-	Yes	-	-	Yes*
Emp. Grad. Inst.	High	Med.	Low	-	-	-	-	-	No	-	-	Yes*
Emp. Basic Research	High	Med.	Low	-	-	-	-	-	Yes	-	-	No*
Ref. University	High	Med.	Low	-	-	-	-	-	Yes	-	-	No
Ref. Department	High	Med.	Low	-	-	-	-	-	-	-	-	-
Ref. Discipline	High	Med.	Low	-	-	-	-	-	-	-	-	-
Discus. Dept. Head	High	Med.	Low	No	-	No	No	-	Yes	No	-	No*
Discus. Dept. Fac.	High	Med.	Low	-	-	-	-	-	-	-	-	-
Discussion Dean	High	Med.	Low	-	-	-	-	-	-	-	-	-
Discus. Univ. Adm.	High	Med.	Low	-	-	No	-	-	Yes	-	-	No*
Total Communication	High	Med.	Low	-	-	No	-	-	Yes	-	-	No*
External Comm.	High	Med.	Low	-	-	-	-	-	-	-	-	-
Upward Comm.	High	Med.	Low	-	-	-	-	-	-	-	-	-
Outward Comm.	High	Med.	Low	-	-	-	-	-	-	-	-	-
Internal Comm.	High	Med.	Low	-	-	-	-	-	-	-	-	-
	I	Yes	8	No	7	Yes	2	No	2	Yes	7	No

*Disciplinary reference group orientation was highest in departments with a high degree of autonomy.

Table A-9.--Relationship between the amount of discussion with the department chairman and faculty perception of departmental autonomy as modified by the introduction of twenty-four test factors.

Test Factor	Test Factor			Sig. Direct Relationship Holds			Significant Relationship Vanishes			Most Comm. With Dept. Head in Depts. Med. Aut.		
	Categories			Categories			Categories			Categories		
	1	2	3	1	2	3	1	2	3	1	2	3
Cartter Rating	Not Rated	Rated	NA	.001	.001	NA	-	-	NA	-	-	NA
Support	Public	Private	NA	.001	-	NA	-	-	NA	-	.001	NA
Size A Faculty	High	Med.	Low	.01	-	-	-	x	x	-	-	-
Democracy	High	Med.	Low	-	-	.01	x	x	-	-	-	-
\$ Res./\$ Gen. F.	High	Med.	Low	-	-	.001	x	x	-	-	-	-
Publication Rate	High	Med.	Low	-	-	.01	x	x	-	-	-	-
Inf. Dept. Fac.	High	Med.	Low	-	-	-	-	x	x	.001	-	-
Inf. Dept. Head	High	Med.	Low	-	.01	-	x	-	x	-	-	-
Inf. Indiv. Fac.	High	Med.	Low	-	-	-	x	x	x	-	-	-
Emp. Ugrad. Inst.	High	Med.	Low	-	.001	-	-	-	x	.001	-	-
Emp. Grad. Inst.	High	Med.	Low	-	-	-	x	x	x	-	-	.05
Emp. Basic Research	High	Med.	Low	-	.05	-	x	-	-	-	-	.05
Ref. University	High	Med.	Low	-	.001	-	-	-	x	.001	-	.05
Ref. Department	High	Med.	Low	.001	-	-	-	x	-	-	-	-
Ref. Discipline	High	Med.	Low	-	.01	.001	x	-	-	-	-	-
Discus. Dept. Head	High	Med.	Low	-	-	-	x	x	x	.01	-	-
Discus. Dept. Fac.	High	Med.	Low	-	.05	-	-	-	x	.001	-	-
Discussion Dean	High	Med.	Low	-	.05	-	-	-	x	.001	-	-
Discus. Univ. Adm.	High	Med.	Low	-	.01	-	-	-	x	.001	-	-
Total Communication	High	Med.	Low	-	-	.05	-	x	-	.05	-	-
External Comm.	High	Med.	Low	-	.01	-	-	-	x	.05	-	-
Upward Comm.	High	Med.	Low	-	-	-	-	x	x	.001	-	-
Outward Comm.	High	Med.	Low	-	-	-	-	x	x	.001	-	-
Internal Comm.	High	Med.	Low	-	-	-	-	x	x	.05	-	-
	4	10	5	9	13	14	11	1	1	1	2	2
	19			36			14					

Table A-10.--Relationship between the amount of discussion with chairmen of special departmental committees and faculty perception of departmental autonomy as modified by the introduction of twenty-four test factors.

Test Factor	Test Factor			Most Disc. in			Significant			Other Sig.		
	Categories			Depts. with Med.			Relationship			Relationship		
	1	2	3	1	2	3	1	2	3	1	2	3
Cartter Rating	Not	Rated	NA	-	-	NA	x	x	NA	-	-	NA
Support	Public	Private	NA	.01	-	NA	-	x	NA	-	-	NA
Size A Faculty	High	Med.	Low	.001	-	-	-	x	x	-	-	-
Democracy	High	Med.	Low	-	-	-	x	x	x	-	-	-
\$ Res./\$ Gen. F.	High	Med.	Low	-	-	-	x	x	x	-	-	-
Publication Rate	High	Med.	Low	-	-	-	x	x	x	-	-	-
Inf. Dept. Fac.	High	Med.	Low	-	-	-	x	x	x	-	-	-
Inf. Dept. Head	High	Med.	Low	-	-	.05	x	x	-	-	-	-
Inf. Indiv. Fac.	High	Med.	Low	-	-	.01	x	x	-	-	-	-
Emp. Ugrad. Inst.	High	Med.	Low	-	-	-	x	-	x	-	.001*	-
Emp. Grad. Inst.	High	Med.	Low	-	-	-	x	x	x	-	-	-
Emp. Basic Research	High	Med.	Low	-	-	.01	x	x	-	-	-	-
Ref. University	High	Med.	Low	-	-	.05	x	x	-	-	-	-
Ref. Department	High	Med.	Low	-	-	-	x	x	x	-	-	-
Ref. Discipline	High	Med.	Low	-	-	-	x	-	-	.05*	.05*	-
Discus. Dept. Head	High	Med.	Low	-	-	.01	x	x	-	-	-	-
Discus. Dept. Fac.	High	Med.	Low	-	.01	-	-	-	x	.05*	-	-
Discussion Dean	High	Med.	Low	-	-	.001	x	x	-	-	-	-
Discus. Univ. Adm.	High	Med.	Low	-	.05	-	-	-	-	.05*	-	-
Total Communication	High	Med.	Low	-	.05	-	-	-	x	.05	-	-
External Comm.	High	Med.	Low	-	-	.01	x	x	-	-	-	-
Upward Comm.	High	Med.	Low	-	-	.001	x	x	-	-	-	-
Outward Comm.	High	Med.	Low	-	-	-	x	x	x	-	-	-
Internal Comm.	High	Med.	Low	-	-	-	x	x	x	-	-	-
	2	3	8	18	19	14	4	2	6			
	13			51			6					

*A direct relationship between the amount of discussion with the chairmen of special departmental committees and the degree of departmental autonomy was evident.

Table A-11.--Relationship between the amount of discussion with faculty outside of department and faculty perception of departmental autonomy as modified by the introduction of twenty-four test factors.

Test Factor	Test Factor			Sig. Inverse Relationship Holds			Significant Relationship Vanishes			Most Comm. in Depts. with Med. Autonomy		
	Categories			Categories			Categories			Categories		
	1	2	3	1	2	3	1	2	3	1	2	3
Cartter Rating	Not Rated	Rated	NA	-	.05	NA	x	-	NA	-	-	-
Support	Public	Private	NA	.05	-	NA	-	x	NA	-	-	-
Size A Faculty	High	Med.	Low	.05	-	-	-	x	-	-	-	.01
Democracy	High	Med.	Low	.05	-	-	-	x	x	-	-	-
\$ Res./\$ Gen. F.	High	Med.	Low	-	-	.05	x	x	-	-	-	-
Publication Rate	High	Med.	Low	-	-	-	x	x	x	-	-	-
Inf. Dept. Fac.	High	Med.	Low	-	-	-	x	x	x	-	-	-
Inf. Dept. Head	High	Med.	Low	-	-	-	x	x	x	-	-	-
Inf. Indiv. Fac.	High	Med.	Low	-	-	-	x	x	-	.05	-	-
Emp. Ugrad. Inst.	High	Med.	Low	-	-	-	x	x	x	-	-	-
Emp. Grad. Inst.	High	Med.	Low	-	-	-	x	x	x	-	-	-
Emp. Basic Research	High	Med.	Low	-	.01	-	x	-	x	-	-	-
Ref. University	High	Med.	Low	-	-	.01	x	x	-	-	-	-
Ref. Department	High	Med.	Low	-	.05	-	x	-	x	-	-	-
Ref. Discipline	High	Med.	Low	-	-	-	x	x	x	-	-	-
Discus. Dept. Head	High	Med.	Low	-	-	-	x	x	x	-	-	-
Discus. Dept. Fac.	High	Med.	Low	-	-	-	x	x	x	-	-	-
Discussion Dean	High	Med.	Low	-	-	-	x	-	x	-	.01	-
Discus. Univ. Adm.	High	Med.	Low	-	.01	-	x	-	x	-	-	-
Total Communication	High	Med.	Low	-	-	.05	-	x	-	.05	-	-
External Comm.	High	Med.	Low	-	-	-	x	x	x	-	-	-
Upward Comm.	High	Med.	Low	-	-	-	x	x	x	-	-	-
Outward Comm.	High	Med.	Low	-	-	-	-	x	x	.05	-	-
Internal Comm.	High	Med.	Low	-	-	-	x	x	x	-	-	-
	3	4	3	3	10	5	19	19	17	3	1	1
							55				5	

Table A-12.--Significant Spearman rank order correlation coefficients between the degree of departmental autonomy and additional variables.

Variable	All Depts.	Cartter Rated Depts.	Cartter Non-Rated Depts.	High Autonomy	Medium Autonomy	Low Autonomy
Democracy in Decision Making	+ .33***	+ .40**				
Influence University Committees	- .35***	- .41**	- .31**		- .44**	- .34*
Influence Graduate Students	+ .17*					
Preferred Emphasis Upon Under-graduate Instruction	- .28**		- .23*			
Preferred Emphasis Upon Basic Research	+ .20*					- .56***
Autonomy Should be Controlled				- .46**		
Autonomy Should Not be Changed				+ .35*		
Autonomy of College	- .36***	- .31*	- .30**	- .42**		
Autonomy of College & University	- .40***	- .68***				
\$ Total/A Faculty Member	+ .22*	+ .34*				
\$ Research/A Faculty Member		+ .30*				
\$ General Fund/A Faculty Member	+ .27*	+ .49**				
Operating Funds (Support) 1957		- .32*				
Operating Funds (Support) 1967		+ .36*				
% Full Professors 1967		+ .32*				
% A Faculty 1957		- .42*				
% A Faculty With Private Offices	+ .25*	+ .48**				
% New Appts. Total Faculty 1967	- .24*					- .51*
% Change in A Ratio 1957-1967						
% Promoting Dept. Outside Univ.	+ .23*					
Concern for Faculty Prestige		+ .39**				
Response Rate			+ .26*			
Ph.D./A Faculty 1957	+ .22*	+ .34*			+ .31*	+ .42*
Ph.D./A Faculty 1967	+ .23*	+ .28*				- .33*
M.A./A Faculty 1967						+ .46*
Ratio Graduate to B.A. Degrees 1957	+ .20*					

*p ≤ .05

**p ≤ .01

***p ≤ .001

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