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ABSTRACT

Based on Barker's Manning Theory, the behavioral and attitudinal consequences of participation in undermanned settings were examined among university faculty. Faculty from the four smallest (undermanned) and four largest liberal arts departments at Central Connecticut State College were surveyed regarding their academic activities and their attitudes toward peers. Of 118 full-time faculty members who were mailed a questionnaire, 85 responses were received. The questionnaire focused on faculty activities from fall 1979 to spring 1982, including committee work, research activities, and teaching. Respondent characteristics, interpersonal relations within the department, and overall job satisfaction were also addressed. The strongest evidence of undermanning effects was found on indices reflecting time and energy commitments to the setting and concerns about its maintenance, while perceptions of colleagues did not appear to be affected. Overall, the results support some aspects of manning theory. Faculty in small departments seem more committed to their setting, with fewer sick days, more concerns about enrollment, and more participation in committee work. (Author/SW)

# Undermanning and Faculty Behavior: An Exploratory Study

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Running head: Undermanning and Faculty Behavior

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## Abstract

Based on Barker's Manning theory, the behavioral and attitudinal consequences of participation in undermanned settings were examined among university faculty. Faculty from the four smallest (undermanned) and four largest Liberal Arts departments at a small college were surveyed regarding their academic activities and attitudes towards peers. Responses were scored along ten indices reflecting undermanning effects. Significant differences between large and small departments in the predicted direction were found on three measures; scores on four of the remaining seven were in the anticipated direction. The strongest undermanning effects were found on indices reflecting time and energy commitments to the setting and concerns about its viability; little evidence was found for attitudinal effects. The findings are discussed in light of the specific history of the institution studied as well as in regard to prevailing academic norms which encourage individual scholarly activity over collective work.

# Undermannning and Faculty Behavior: An Exploratory Study[1,2]

Ecology refers to the study of relationships of organisms to their larger environments. Early studies in ecology focused on investigations of sub-human species, but recently many social scientists have begun to adapt an ecological perspective in examining man's adaptation to his environment, e.g., Barker, 1968; Catalano, 1979. This study attempts to expand this knowledge base by providing an ecological analysis of the impact of certain academic settings on the behavior of faculty members.

Building on the work of Barker and his colleagues (Barker, 1968, Barker & Gump, 1964), this study was an exploratory study of the behavioral consequences of participation in undermanned (small) academic departments versus overmanned (large) academic departments. The next section will introduce the concept of behavior setting and its relationship to manning theory, as well as give a selective review the pertinent literature on undermanning effects.

Roger Barker, long a proponent of an ecological point of view, proposed that environment and behavior should be described and measured independently in order to understand the nature of the relatonship between them. To this end, Barker (1963) defined the "behavior setting" as the basic environmental unit. While Barker (1968) has

developed an extensive methodology for defining and surveying behavior settings, a more intuitive understanding of this term can be garnered from the following example given by Barker himself when he delivered the Kurt Lewin Memorial Address in 1963 in Philadelphia.

> It is not often that a lecturer can present to his audience an example of his phenomena, whole and functioning in situ--not merely with a demonstration, a description, a preserved specimen, a picture, or diagram of it. I am in the fortunate position of being able to give you, so to speak, a real behavior setting.
>
> If you will change your attention from me to the next most inclusive, bounded unit, to the assembly of people, behavior episodes, and objects before you, you will see a behavior setting. It has the following structural attributes which you can observe directly:
>
> 1. It has a space-time locus: 3:00-3:50 p.m., September 2, 1963. Clover Room, Bellevue-Stratford Hotel, Philadelphia, Pa.
>
> 2. It is composed of a variety of interior entities, and events; of people, objects (chairs, walls, a microphone, paper), and other

processes (air circulation, sound amplification).

3. Its widely different components form a bounded pattern that is easily discriminated from the pattern on the outside of the boundary.

4. Its component parts are obviously not a random arrangement of independent classes of entities; if they were, how surprising, that all the chairs are in the same position with respect to the podium, that all members of the audience happen to come to rest upon chairs, and that the lights are not helter-skelter from floor to ceiling, for example.

5. The entity before you is part of a nesting structure; its components (e.g., the chairs and people) have parts, and the setting, itself, is contained within a more comprehensive unit, the Bellevue-Stratford Hotel.

6. This unit is objective in the sense that it exists independently of anyone's perception of it, qua unit. (p. 26)

One further characteristic of behavior settings should be noted: they have one or more <u>standing patterns</u> of behavior. These refer not to the idiosyncratic behavior of particular individuals, but to the more

consistent behaviors one is likely to observe in a given setting regardless of the particular individuals present, e.g., lecturing and note-taking in a classroom or praying in a church service.

Barker asserted that behavior settings must be supported by member participation if the settings are to continue to exist. If the number of people available to perform the essential setting functions is small, and there is a desire to maintain the setting, people may experience considerable "press" from the environment to participate in the setting. To illustrate, staffing a five member committee permits considerable choice of involvement to members of a 30 member academic department, but as the department size approaches five, the pressure on individual faculty to participate increases if the committee is to continue to exist.

The concept of undermanning was introduced by Barker (1960) in connection with a cross-cultural study of the behavior settings of two small towns, one in Kansas ("Midwest"), the other in England ("Yoredale"). Barker discovered that the smaller Kansas town actually had 1.2 times as many behavior settings as its English counterpart. Given the population available to staff the existing settings, Barker described Midwest as "undermanned" relative to Yoredale. He found that the inhabitants of Midwest participated more often in a

greater number of settings, and held more positions of responsibility in them.

The notion of undermanning and its consequences has been the subject of considerable study by Barker and his colleagues. Barker and Gump (1964) compared large and small high schools and found that small schools tended to have a disproportionately greater number of activities (behavior settings) per student. Thus, the small schools were "undermanned" relative to the larger one since each small school student needed to participate in a greater number of settings if they were to be maintained. Barker noted several behavioral and psychological consequences for students at the small schools: They participated in a wider range of settings and were more likely to be involved as actors rather than spectators than were their large school counterparts. Moreover, when asked about their sources of satisfaction in the school setting, students reported satisfactions stemming from the development of competence, cooperation with fellow students and the meeting of challenges. In contrast, students from large schools reported more satisfactions of a vicarious nature.

In another study of students, Willems (1967) examined students' sense of obligation to school activities as related to school size and marginality of the student. He defined 'sense of obligation" as the

personal feeling of "I ought to . . . or I must . . ." with reference to attending, participating in or helping with a group activity. The number of students available per activity, a close correlate of school size, had no marked effect upon regular students. The picture was quite different for marginal students, selected for relatively poor suitability for school and its affairs. In the small schools, where there were relatively few students available for activities, the marginal students reported a sense of obligation that was similar in magnitude to their regular schoolmates. In large schools, the marginal students were a group apart from the regular students and reported little, if any, sense of obligation. Willems also found that students in small schools experienced considerably more press from the environment to participate in school activites than did students at large schools.

Baird (1969) replicated Barker and Gump's 1964 findings with college students. The extracurricular college activites of students from small and large high schools were studied. While no differences in the college activities of students from small and large high schools were found, college size per se had an impact on involvement. Students from small colleges had higher degrees of participation than did students from larger colleges. Baird interpreted these findings as indicating that students' participation is strongly influenced by

their immediate situation, essentially supporting the undermanning hypothesis.

In yet another replication of the small school phenomena, Wicker (1968) demonstrated that small school students entered a much wider range of school settings and engaged in more performances, as measured by the number of positions of responsibility in the setting, than did students from large schools.

Wicker has also studied undermanning effects in other settings. For example, in a study of small and large churches, Wicker (1969) found that support of church activities was much greater in small churches and that members of small churches participated in more different activities, had more positions of leadership, spent more time in the activites, attended church more often, and contributed more money than did members of large churches.

In one of the few experimental tests of the undermanning hypothesis, Perkins (1982) varied individual differences (competence level) and task structure (additive versus conjunctive) under two levels of manning (adequate or undermanned). His results provided mixed support for manning theory: subjects in the undermanned conditions worked harder, held more different positions, performed more difficult and more important jobs, yet, they did not tend to view their cohorts in more

task-oriented ways. Perkins' findings suggest that some of the generalizations about undermanning effects might be unwarranted and that certain individual and task factors might override setting influences.

The present study explored the impact of manning levels on faculty behavior at a small college. Unlike the occupants of other field settings where manning levels have been studied such as high schools (Barker & Gump, 1964) or churches (Wicker, 1969), one can argue that faculty members have been more rigorously socialized regarding the importance of individual versus group productivity. Academic honor (as well as promotions and tenure!) is given principally to those who manifest outstanding individual achievement; excellence in committee work is less often rewarded. Indeed, observers of the academic scene, e.g., Baldridge, Curtis, Ecker & Riley (1978), Brown (1982), have noted academia's "anarchistic" qualities in which faculty act like independent entrepeneuers and efforts to develop organizational concensus are often doomed to failure. Since undermanning effects are concerned with group rather than individual endeavors (see Greenberg, 1979), applying this theoretical framework to an academic setting was viewed as a good test of the strength of the model.

For college faculty, the notion of undermanning is most relevant for academic departments rather than total college size. Both large and small departments tend to have about equal number of committees; therefore, in small departments, each faculty member may be required to serve on several committees if the committees are to function, and if the department is to be duly represented on college-wide committees. Similarly, since most departments require their undergraduate majors to take about 36 semester hours of course work in the area, faculty in smaller departments may teach a greater diversity of courses. These departmental differences in environmental demands should lead to behavioral and psychological consequences similar to those found previously among high school and college students.

METHODOLOGY

Wicker and Kirmeyer (1976) have listed a number of generalized consequences for occupants of undermanned settings (see Table 1). Each of these consequences was "translated" into a behavioral index appropriate for the institution being studied. Faculty from large and small academic departments were then surveyed in term of these measures.

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Insert Table 1 about here

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Subjects for this study were 85 full-time faculty members from the four largest and four smallest Liberal Arts departments at Central Connecticut State College.[3] Selection of the eight departments began with an examination of the archival records for the academic year 1979-1980 for all departments within the Liberal Arts college. The four largest departments were: English (32), History (23), Applied Math (20) and Biology (18) and four smallest were: Speech (8), Philosophy (6), Political Science (6) and Geography (5). It was assumed that small departments would represent undermanned situations relative to the large departments since committee and teaching demands (largely specified by AAUP contract) are equivalent in both large and small departments. However, an actual survey of behavior settings was not done.

A questionnaire was mailed in March 1982 to all full-time faculty members of the eight departments (118 total). Within a three week period, 85 faculty (72%) responded. Table 2 presents the size and response rates of the eight departments.

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Insert Table 2 about here

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The questionnaire, based on Dillman's (1978) total design method, focused on faculty activities from Fall 1979 to Spring 1982. Faculty were asked about the kinds of academic activities with which they were involved (in addition to teaching), e.g., committee work, research activities, as well as their interpersonal relations within the department, their overall job satisfaction and certain background information. Questions were designed to provide quantitative data on the 10 indices listed in Table 1.

Results

Table 3 presents group means and t-test comparisons on the ten indices for large and small departments. Three comparisons were significant ($p<.05$), two as predicted--faculty in smaller departments reported fewer sick days and more anxiety about declining enrollments--and one in the opposite direction--a higher proportion of Ph.D's in the smaller departments. A fourth comparison approached significance ($p<.10$) in the expected direction: members of small departments served on more committees than their large department colleagues. Four of the six remaining comparisons were in the anticipated direction but not significant; the two discrepant items dealt with perceptions of peers, i.e., small department faculty did not see their colleagues in more task-oriented ways, nor were they less

sensitive to individual differences.

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Insert Table 3 about here

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## Discussion

The results of this exploratory study provide fair support for Barker's manning theory. The general pattern of results were in the predicted direction (with several exceptions discussed below), although the magnitude of the effects were not very large. The strongest evider of undermanning effects was found on indices reflecting time and energy commitments to the setting and concerns about its maintenance; perceptions of colleagues did not appear to be affected. These outcomes are generally consistent with those of Perkins (1982) who found the strongest undermanning effects on measures of behavior and not in subjects' reports of interpersonal perceptions.

The one significant wayward finding, the higher proportion of Ph.D's in small departments, may represent an artifact of the particular institution studied. When the college originated, its principal task was teacher education, and a large proportion of the faculty was hired with Master's degrees, a tradition that continued for many years. Within the last two decades, however, the character and size of the school have changed, as

well as the composition of the faculty. Due to a sustantial increase in school size and greater emphasis on scholarly activities, as well as the dynamics of the academic marketplace, most newer faculty members have been hired at the PhD. level. The small departments in this study consist of newer faculty who were hired under more competitive conditions. Faculty of the large departments studied have been at Central for a mean of 15.6 years, versus 10.4 years for faculty in the small departments ($t(116)=4.59$, $p<.0005$).

A second dynamic affecting, in a more general way, these findings is the academic culture and the norms governing faculty behavior. Brown (1982) states that "In academia, performance is seen to be independent, acriptive and holistic" (p. 10). Academic institutions generally lack the high level of interdependence and coordinated division of labor that characterize most work organizations. An academician's obligation is to his/her discipline and students, not to strong faculty group goals. Indeed, Weisbord (1976) has attributed the failure of organization development activities in medical settings largely to the lack of identification by professionals such as doctors and nurses, to their specific unit but rather to their specific discipline. Consequently, the academic may feel less pressure from others in his environment to "support" the setting. Greenberg (1982) noted that, according to Wicker, unitary

tasks cannot be considered as affecting the manning of a behavior setting. Academics work independently on the majority of their tasks. Thus faculty may put little emphasis on group tasks, such as committee activity, since they view this activity as less "relevant" to their professional endeavors. Faculty, in contrast to students, have probably been more stringently socialized in distinguishing between professional and "extra-curricular" activities.

Overall, the results provide support for some aspects of manning theory. The data are generally consistent with the behavioral predictions; faculty in small departments seem more "committed" to their setting, with fewer sick days, more concerns about enrollment, and more committee work. There was no evidence, however, that small department faculty perceived their colleagues in the ways predicted by the theory.

Given the exploratory nature of the study with its limited sample, as well as the structural and cultural forces of academia which would seem to mitigate against strong manning effects, the present findings may be taken as a tribute to the robustness of the behavioral manifestations of manning theory. Further research is needed to determine the applicability of manning theory to other organizations where professional norms may vitiate the impact of environmental pressures.

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## Footnotes

[1] This paper is based upon a Master's thesis completed by the second author.

[2] All correspondence should be addressed to Marc B. Goldstein, Department of Psychology, Central CT State University, New Britain, CT 06117.

[3] Since the date of data collection, the name of the school has been changed from Central CT State College to Central CT State University.

Table 1

Consequences of Participation in Undermanned Settings[1]

| Consequence | Behavioral Index |
|---|---|
| Greater effort to support the setting and its function, either by "harder" work or by spending longer hours. | 1. Spend more time on campus. |
| Participation in a greater diversity of tasks and roles. | 2. Serve on more committees. |
| Involvement in more difficult and more important tasks. | 3. Serve in more leadership roles, i.e., chair more committees. |
| More responsibility in the sense that the setting and what others gain from it depend on each individual occupant. | 4. Better attendance; fewer sick days. |
| Viewing oneself and others in terms of task-related characteristics rather than in terms of social-emotional characteristics. | 5. More team efforts to resolve departmental conflicts; greater focus on content rather than personal values. |
| Greater functional importance of individuals. | 6. Greater feelings of accomplishment; more job satisfaction. |
| Less sensitivity to and less evaluation of differences between people. | 7. Less sensitivity to differences of opinion among peers; greater respect and recognition of peers' contributions. |
| Setting of lower standards and fewer tests for admission into the setting. | 8. Faculty would be generalists rather than than specialists; fewer Ph.D.'s. |
| A lower level of maximal or best performance. | 9. Less research productivity. |
| Greater insecurity about the maintenance of the setting. | 10. More anxiety about declining enrollments. |

pted from Wicker and Kirmeyer (1976)

Table 2

Response Rate from Large and Small Departments

| Department | Number of faculty | Number of respondents | Percent returned |
|---|---|---|---|
| Overmanned | | | |
| English | 32 | 20 | 63% |
| History | 23 | 19 | 83% |
| Applied Math | 20 | 12 | 67% |
| Biology | 18 | 13 | 72% |
| Undermanned | | | |
| Speech | 8 | 7 | 87% |
| Philosophy | 6 | 5 | 83% |
| Political Science | 6 | 5 | 83% |
| Geography | 5 | 3 | 80% |

Table 3

Means and t-value Comparisons on Behavioral Indices for Small and Large Departments

| Behavioral Index | $\bar{x}$ Small Dept. | $\bar{x}$ Large Dept. | t-value | Prob. |
|---|---|---|---|---|
| Spend more time on campus | 14.5 | 9.7 | -1.29 | n.s. |
| Serve on more committees[1] | 5.13 | 4.02 | -1.91 | <.10 |
| Chair more committees[1] | 0.66 | 0.58 | -0.28 | n.s. |
| Fewer sick days | 3.00 | 7.60 | 2.05 | <.01** |
| See peers in more task-oriented way[1] | 3.27 | 3.61 | 0.82 | n.s. |
| Higher job satisfaction | 1.73 | 1.65 | -0.37 | n.s. |
| Less sensitive to differences among peers[1] | 6.73 | 6.35 | -1.10 | n.s. |
| Fewer Ph.D.'s | 3.00 | 2.70 | -4.27 | <.01** |
| Less research productivity | 6.17 | 6.36 | 0.07 | n.s. |
| More anxiety about declining enrollments | 2.60 | 2.06 | -2.12 | <.05* |

[1]Means reflect composite scores of several questions addressing this issue.