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New Faculty Offices: An Evaluation

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NEW FACULTY OFFICES: AN EVALUATION

by

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VITA

The author, Laurie Anderson, is the daughter of David F. Anderson and Jane Shanahan Anderson. She was born on October 22, 1955 in Manchester, New Hampshire.

Her elementary and secondary education was obtained mostly in public schools in Setauket, New York and Hamilton, Massachusetts. She entered Northfield Mt. Hermon High School in Mt. Herman, Massachusetts in September 1971 and graduated in June 1973.

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INTRODUCTION

Overview

As workers are becoming more widely recognized as key to organizational excellence, interest in how office environments influence worker satisfaction, performance, and health has been growing. The recent construction of a faculty office building at a local university provided the opportunity to evaluate various environmental issues related to users' perceptions and intended behavior.

The purpose of this paper is to examine faculty attitudes towards their offices and their expectations of behavioral changes. The theoretical issues of concern relate to the dynamics of environmental evaluation, satisfaction, and the relationship between satisfaction and intended behavior. The applied focus of this paper centers on evaluating how successfully the building met the major goal defined by the university planning committee. Specifically, the goal of the building was to increase faculty satisfaction with their office conditions and thereby increase the amount of time faculty spend on campus and their availability to other faculty and students.

Results suggest that experiences in past environments influence evaluation and intended behavior in new environments. In addition, despite differing evaluations and behavioral expectations for the new offices, the new building appears to be meeting its primary goal. All subjects expressed more satisfaction with the new offices and an increase in their intended rate of interaction with faculty. The respondents who left particularly unsatisfactory conditions expected to spend more time in the new offices and to meet more frequently with students than when in the former offices.

Background and Rationale

As building costs soar, as more professionals are held accountable for their work, and as the public becomes increasingly aware of their surroundings, designers of built environments are called upon to observe the consequences of their decisions and to systematically learn from past experiences. Post-occupancy evaluations have been designed to provide valid and reliable information to help guide more effective office planning and design.

During the past 15 years, there has been an increase in the amount of research directed at studying the office environment. It has become increasingly clear during this time that a solid understanding of user needs and preferences is a prerequisite to creating office conditions that support both the work experiences of the individual and

the overall goals of the organization.

Although recent research has contributed to our understanding of the office environment, there are practical and theoretical issues that need attention. One problem for the application of this work is that most studies have not established a set of criteria that can be used to identify the degree of excellence or success in office environments. When criteria were specified, corresponding measures of success were not tested (Campbell, 1979; Goodrich, 1982; Knight, 1980; Marans & Spreckelmeyer, 1982).

A conceptual model that explains the relationship between the physical environment and people's subjective and behavioral responses to that environment would offer clarity, organization, and direction to the application of office evaluation studies. Yet few studies in this area are guided by conceptual models (Brookes & Kaplan, 1972; Marans & Spreckelmeyer, 1982).

This study was designed to address these two shortcomings. First, the study design was guided by a conceptual model proposed by Marans and Sprekelmeyer (1982) which suggests that any interpretation of environmental satisfaction and its impact on behavior must include consideration of the different standards people bring to their assessments. This study focused on the influence that satisfaction with former offices had on faculty satisfaction with, and behavioral intentions for, the new

offices.

Criteria for success were established and tested with the satisfaction and behavioral intention data. Success was defined as fulfillment of the major goal set for the building, namely, increasing faculty satisfaction with their office conditions and thereby increasing the amount of time faculty spend on campus and their availability to colleagues and students.

CHAPTER II

REVIEW OF RELATED LITERATURE

Overview

The purpose of this study was to evaluate faculty attitudes towards new office conditions and their expectations of behavioral changes. To do so, it was necessary to consider the role of the workplace, attitudes towards the workplace in general and towards offices in particular, the influence of various factors on environmental attitudes, and the relationship between work-related attitudes and behaviors. Relevant theory and findings from the psychological literature will be reviewed here.

The Workplace

The Hawthorne studies. The first and perhaps most famous set of studies conducted by industrial psychologists on the physical aspects of the workplace was the Hawthorne studies, named for the Hawthorne, Illinois plant of the Western Electric Company where the research was conducted. The research began in 1924 by Mayo and associates as a straightforward investigation of the impact that various physical aspects of the workplace, such as illumination, temperature, humidity, and noise might have on worker efficiency (Schultz, 1982). Interpreting the results was

not so straightforward. Numerous environmental changes did lead to production increases; but production rates increased when the physical changes were withdrawn. It appeared that the physical conditions of the work environment were important, but that the effects of the physical environment were modified by how the workers perceived and adapted to them. The physical changes in the work environment seemed to be interpreted by the Hawthorne workers as evidence of management concern. As a consequence, attitudes towards management improved among the workers and the heightened morale produced an increase in the work output.

The Hawthorne studies pointed out the difficulties inherent in interpreting the relationship between the physical environment and behavior. The Hawthorne researchers concluded that the primary factors influencing this relationship were the attitudes of the workers. Although this interpretation was contested (Kimmel, 1969), the Hawthorne researchers were among the first to perceive worker attitudes as key to understanding work behavior.

Satisfaction and performance. Subsequent research in industrial psychology concentrated on job attitudes, specifically job satisfaction and its influence on job performance. The Hawthorne studies were considered responsible for the birth of the human relations movement in industry (Bass & Barrett, 1981). The human relations

movement attempted to increase productivity by satisfying the perceived needs of the workers (Schwab & Cummings, 1970). By the 1950s, the primary concern of human relations experts was to prove that job satisfaction improved productivity (Kimmel, 1969). However, most of the studies conducted on this topic during this period failed to show a causal relationship between job satisfaction and job performance (Vroom, 1964).

Herzberg's (1959) motivation-hygiene, or two-factor theory of job attitudes, was designed to remedy the prior failure of researchers to relate satisfaction to performance. It stated that certain job conditions operated primarily to dissatisfy workers and that a separate set of job conditions operated primarily to satisfy workers. The job factors that produced dissatisfaction, or the hygiene factors, included features related to the work environment, such as work conditions, benefits, and policy practices. Herzberg's theory was analogous to Maslow's needs-hierarchy formulation (Schultz, 1982). Like Maslow, Herzberg proposed that lower-order needs must be satisfied before one is affected by higher-order needs. Herzberg's hygiene factors corresponded to Maslow's lower-order physiological, safety, and love needs. In Herzberg's theory the higher-order needs, or "motivators," included issues related to the nature of the job and the person's sense of achievement, responsibility, and personal development, and only the motivators have

the potential to produce job satisfaction.

Subsequent research both supported and contradicted Herzberg's two-factor theory (Schultz, 1982). Regardless of the inconsistencies, Herzberg's work represented a heuristic advancement beyond the simple causal relationship between job satisfaction and job performance proposed by others. One major implication of Herzberg's work was that job satisfaction is a multidimensional construct. Just as Herzberg's work expanded current understanding of the construct "job satisfaction," the variable "job attitudes" also needed more construct clarification. Locke (1976) noted that the worker attitudes referred to by Mayo and his associates in the Hawthorne studies included a variety of attitudes beyond job satisfaction. They included the workers' views of management, of the economic situation, and their own hypotheses about the purpose of the experiment.

In addition to the research interests of industrial psychologists, certain social and economic developments in the United States underscored the value of exploring worker attitudes towards job conditions and their relationship to productivity. Fueled partly by the recent problems of lagging productivity, the trend towards the humanization of work produced a new organizational style largely concerned with improving the quality of work life (QWL). For many organizations QWL means optimizing worker involvement and contributions to work by exploring the use of opportunity,

recognition, participation, and rewards (Kerr & Rosow, 1979). One increasingly popular tool for taking the company's pulse regarding QWL is the organizational survey. For instance, at General Motors, home of one of the more ambitious QWL programs, teams of psychologists have developed a 90-item questionnaire which is continuously being refined to measure employee attitudes towards QWL. Sixteen dimensions are represented on this instrument, including a dimension on the physical work environment, specifically the adequacy of the physical environment in terms of efficiency, safety, and comfort (Schultz, 1982).

In summary, early studies of the workplace concluded that worker attitudes were key to understanding work behavior. Although productivity became conceptually linked with job satisfaction at this time, subsequent studies failed to demonstrate a causal relationship between satisfaction and performance. Herzberg's two-factor model represented one of the first theoretical advancements to challenge the view of satisfaction, whether related to jobs or environments, as a unidimensional construct. In an effort to clarify the more general relationship between attitudes and behavior, other researchers (Fishbein & Ajzen, 1975) later explored a multicomponent view of attitudes. Because one focus of this study was on the relationship between office satisfaction and intended behavior, other theories and findings relevant to the attitude-behavior

link will be briefly reviewed.

Attitudes and Behavior

Consistent with the literature on job satisfaction and performance, both general social psychological studies (Wicker, 1969) and specific studies of environmental attitudes and behavior (O'Riordan, 1976) failed to uncover a strong attitude-behavior link. Social psychologists offered different theories to account for the weak attitude behavior association. Bem (1968), for example, offered an explanation based on a unique view of attitudes. Unlike other attitude theorists, Bem argued that behaviors could predict attitudes. According to his self-perception theory, attitudes are essentially self-descriptive statements which people infer from behavior.

Bem's theory of self-perception differed from the cognitive consistency theories, such as cognitive dissonance (Festinger, 1957) which conceived of attitudes as relatively enduring dispositions that led to consistent behavior under certain conditions. The goal of the social psychologists endorsing this perspective was to identify those conditions that predicted a strong attitude-behavior association.

In contrast to the theoretical explanations offered for the weak attitude-behavior associations, Fishbein and Ajzen (1975) offered an explanation related more to methodology. They suggested that inconsistencies in attitude

and behavior measurement both within and across studies were responsible for the murky picture. Many of the attitude behavior studies used very different kinds of attitude measures. Some examined only people's feelings toward some object; others concentrated only on people's beliefs or opinions toward some object. Further, the behavioral criterion used often did not correspond to the attitude measure in terms of level of specificity. Researchers were trying to relate a general attitude measure to a very precise behavior and consequently reporting weak attitude-behavior associations.

The more precise methodology proposed by Fishbein and Ajzen was derived from their view of attitudes as comprising beliefs, feelings, and action tendencies toward an object. While a general attitude may not predict a specific behavior, a multiple-item scale measuring the cognitive (thoughts), affective (feelings), and conative (actions) dimensions of attitudes is likely to predict a class of behaviors. Further, the best predictor of a person's behavior is the intention to perform that behavior. Two prerequisites are necessary for a strong relationship between intention and behavior. First, the intention has to be measured at the same level of specificity as the behavioral criterion. Second, the measure of intention must correspond closely in time to the actual behavior. Since intentions are usually measured some time prior to performance of the behavior, intervening

events may change the behavioral intention and consequently reduce its relationship to the actual behavior.

Because respondents in the present study were surveyed before their behavior could stabilize in the new building, data were gathered on behavioral intentions. As suggested by Fishbein and Ajzen, the data analyses focused on the relationship between a multi-component satisfaction index and behavioral intentions related specifically to the behavior to be tested later. The study design was also guided by results from recent office evaluation studies that have highlighted the need to test conceptual models related to environmental evaluation, criteria for success, and the relationship between certain environmental propoerties, such as privacy, and social interaction. These results from the environmental literature will be reviewed here.

Office Research

During the past 15 years there has been a considerable increase in the amount of research directed at studying the office environment. Goodrich (1982) attributes the recent surge of office evaluation studies to a variety of social and economic developments including the growing importance of office work, the influx of office automation, the changing character of work, and the economics of office architecture. Brookes and Kaplan (1972) commented on the growing economic significance of office architecture and reported that in 1970 nearly one-half of the nation's

civilian force consisted of white collar workers, and approximately $300 billion were being spent nation-wide on office settings and activities.

Systematic evaluations of the office environment are being recognized as crucial to effective planning and designing. The United States Government is now considering the need for evaluation as a requirement for all major public works projects. Private industry is already moving towards routine evaluations of office conditions (Marans & Spreckelmeyer, 1982).

Post-occupancy office evaluations have focused on a number of different areas including office design (Becker et al., 1983; Brookes & Kaplan, 1972; Hedge, 1982; Marans & Spreckelmeyer, 1982; Oldham & Brass, 1979), user satisfaction and environmental priorities (Farrenkopf & Roth, 1980; Oldham & Rotchford, 1982; Sundstrom et al., 1982a), office arrangement, appearance, and interaction with visitors (Becker et al., 1982; Campbell, 1979; Hensley, 1982; Oldham & Rotchford, 1982; Zweigenhaft, 1976). The methodology in this area, as in other areas of environmental psychology, includes mostly descriptive technologies such as user surveys, interviews, and behavioral observations (Bell et al., 1978; Farrenkopf & Roth, 1980; Proshansky, 1972).

While these investigations have contributed to our understanding of the office environment, they have not

addressed the issue of overall success or excellence in office environments. Most studies have not established a set of criteria that can be used to determine the degree to which an office environment is successful. When criteria were specified, corresponding measures of success were not tested (Campbell, 1979; Goodrich, 1982; Knight, 1980; Marans & Spreckelmeyer, 1982).

A conceptual model that explains the relationship between the physical environment and people's behavioral and subjective responses to that environment would greatly facilitate the application of this work. Yet few environmental evaluation studies have been guided by theoretical models (Brookes & Kaplan, 1972; Marans & Spreckelmeyer, 1982).

One model that was integrated into the design of this study was proposed by Marans and Spreckelmeyer (1982). Their model suggests that environmental satisfaction depends on evaluations of environmental attributes. How people evaluate these attributes depends on how they perceive the attributes and the standards that they use to judge them. These standards are derived from prior experiences and perceptions of comparable environments. In support of the model Marans and Spreckelmeyer (1982) found differences in office satisfaction related to the kinds of offices people had previously experienced. Relatedly, researchers have found that optimal standards for ambient

conditions (light, sound, temperature) vary with individual frames of references (Heimstra & McFarling, 1974; Holahan, 1982; Schultz, 1982; Wineman, 1982).

Privacy and social interaction. The hypothesis that perceptions of prior environments influence perceptions of current environments has been related to the issue of office privacy and its relationship to the frequency of social interaction. The issue of office privacy first gained attention with the introduction of the open-plan offices. The concept of the open-plan office originated in Germany and refers to a huge open area, with no floor to ceiling walls to divide the area into private, separate offices. From clerks to executives, all employees are organized in functional work units, each of which is separated from other units by landscaping such as trees, plants, or furniture arrangements (Hedge, 1982). In theory, open-planning was conceived as a way of saving construction and maintenance costs. Further, it was seen as a way of adding flexibility and openness to the work environment, improving both formal and informal communication, and enhancing office productivity.

Research on the effects of open-plan offices on workers has painted a different picture than that originally envisioned. The problems most frequently noted with the open-plan design are loss of privacy, increased distractions, frequent interruptions, problems with the ambient

conditions, decreased satisfaction and internal motivation (Brookes & Kaplan, 1972; Hedge, 1982; Nemecek & Grandjean, 1973; Oldham & Bass, 1979; Sundstrom et al., 1982a, 1982b). A minority of studies report improved communication among employees in an open-plan office (Allen & Gerstberger, 1973; Szilagy & Holland, 1980).

The controversy surrounding the open-plan office has inspired much research on the relationship between physical features and issues such as social interaction and privacy. Conrath (1973) compared the effects of certain organizational and environmental features on interaction among office workers and reported that face-to-face interactions among office workers were influenced more by spatial arrangement and proximity than by task and authority relationships.

Subsequent research was directed at clarifying the dynamics involved in the relationship between physical design features and interaction and between design features and privacy. Although initially counterintuitive, Proshansky (1976) noted that social interaction appeared to be facilitated not by unlimited opportunities for interpersonal contact, but by the opportunity for privacy and the freedom to choose when and how to interact. Further, the ability to control interaction appeared to be crucial in mediating the negative effects of reduced privacy and crowding. This hypothesis is consistent with Altman's (1975) claim that loss of privacy results from a reduction

or elimination of control over processes that regulate interpersonal boundaries. Other psychologists have suggested that a loss of control over interpersonal boundaries is associated with predictable adaptive responses such as flight (i.e., leaving the situation or environment) or a change in the quality of nature of the communication (Altman, 1975; Becker et al., 1983; Holahan & Slaikey, 1977).

These interpretations have been supported by various research results. For example, in a laboratory study comparing self-disclosure in different settings, Holahan and Slaikey (1976) found that subjects asked to give personal histories volunteered less sensitive information in open as compared to more private settings.

The impact of other design features on social interaction and perceived privacy in the workplace has also been investigated. For instance, Oldham and Rotchford (1983) conducted a study to investigate how certain office characteristics affected interpersonal contact among employees. They were specifically concerned with four office characteristics: openness or the amount of unencumbered space; density, the amount of space per employee; architectural accessibility, the extent to which employee workspaces were visually or behaviorally accessible to external intrusions; and darkness, the overall illumination level. The results showed that employees tended to have

poor interpersonal experiences in the comparatively dark and dense offices that were originally thought to facilitate contact among employees. Dark and dense offices were associated with low feedback from others, few friendship opportunities, and high interpersonal contact. Further, employees in dense, dark, and accessible offices experienced low privacy and concentration and described the office as crowded.

Sundstrom et al. (1982a; 1982b) conducted research to clarify the relationship between office design factors, satisfaction with communication, and perceived privacy. For instance, in a study of employee reactions to a move from a closed to an open-plan office setting, participants were more satisfied with their communication in workplaces that they rated as private, regardless of the location of the office design setting of the workplace (Sundstrom et al., 1982a). Satisfaction with communication was correlated with perceived privacy and not with a particular office design feature per se.

Further investigations were then begun to examine which design features contributed to perceived privacy and whether certain correlates of privacy were a function of job type. Sundstrom et al. (1982b) investigated whether perceived privacy was associated with workspaces that allowed for voluntary isolation from visual and auditory distractions. The number of enclosed sides was the major

correlate of perceived privacy among all job groups. The data did not support the hypothesis that the importance of privacy increased with the complexity of the job. Instead, results suggested that people with different job duties perceived privacy differently in terms of the desired amount and their idea of the ideal physical components of a private workspace.

Although untested in their study, Sundstrom et al. (1982b) proposed an explanation for the differences in perceived privacy among job groups that is based on a concept of a hierarchy of needs. This explanatory model parallels that proposed by Herzberg (1959) in relation to job satisfaction. Personal perceptions of privacy may vary with the level of privacy needs at which the individual is functioning. For instance, the most basic need for privacy may be to maintain an optimal level of social contact and to avoid crowding. For those who have basic control over social contact, the next need may be the opportunity for mental concentration and absence of distraction. A third category of privacy needs for those who may be protected from crowding and distractions, may be autonomy from supervisor visibility or audibility.

The body of research described here has shown that perceived privacy is associated with satisfaction with communication and with interpersonal interactions. In a review of the literature on environmental factors affecting

satisfaction, Wineman (1982) reported that privacy-related considerations, such as the ability to concentrate, conversational and visual privacy, are also consistently associated with general office satisfaction measures. It has also been suggested that privacy concerns are related to perceived status support, or the extent to which organizational position is symbolically reflected by work facilitites (Konar et al., 1982).

Optimal personal space and conditions for interaction may also be influenced by furniture arrangement. Zweigenhaft (1976) reported that "open" offices that were arranged with desks against the walls and no physical objects located between the interactants, promoted more favorable student evaluations of teachers than "closed" offices, in which the desks were situated between students and teachers. Although there was a clear association between faculty desk placement and student evaluations, Zweigenhaft's data disallowed testing for the possibility of a causal relationship between desk orientations and student evaluations.

Rather than producing certain evaluations per se, desk orientation may reflect global teacher attitudes (Hensley, 1982). Teachers who project a formal, closed demeanor in general are likely to communicate their educational attitudes in the form of a closed desk placement. Similarly, the informal, open classroom teachers are probably more likely to prefer open desk arrangements.

In a study conducted to test his hypothesis regarding teacher attitudes and desk placement, Hensley (1982) reported mixed results. The data supported his first hypothesis that more traditional educational orientations were associated with faculty offices with more closed desk arrangements. But the data did not reveal that more liberal educational orientations were similarly associated with more open desk arrangements. Hensley suggested that a problem with limited variance in liberality may have contributed to the mixed picture.

Not all the studies concerned with desk placement have demonstrated an effect. For instance, Campbell and Herren (1978) report that student evaluations of professors were unaffected by opposing desk arrangements. In another study Campbell (1979) failed to find an effect of various furniture arrangements of appreciable magnitude. Thus, although many studies found a relationship between furniture arrangement and interaction or communication variables, the exact meaning of these relationships is still unclear. Furniture arrangements may directly influence interaction processes or they may reflect other important variables, such as teacher attitudes and behavioral tendencies.

Because of its specific relevance to the present research on privacy and social interaction, one study of faculty offices will be discussed in greater detail. Becker et al. (1983) explored how characteristics of the

office setting affect specific organizationally-valued faculty behaviors. Survey data were gathered from faculty and students at three community colleges to compare the effects of open and closed office designs on faculty work patterns and faculty-student interaction. "Open" offices referred to individual work areas in a larger space divided by partitions. "Closed" offices or private offices referred to traditional fully-enclosed rooms with a solid door. Although Becker et al. also distinguish between single and multiple occupancy closed offices, the major results concerned differences between open and closed offices.

This study differed from most prior investigations on open-plan offices. Faculty were asked to specify the activities they perceived to be affected by different office arrangements. Results supported the principle hypothesis that faculty in open offices report more distractions and greater impairment of work behavior and of faculty-student interaction than do faculty in private offices. Faculty in open offices were not only more likely to report problems with noise disturbances in general but were also more likely to report noise problems that specifically affected (1) their ability to do work requiring high levels of concentration, (2) the amount of work they accomplished, and (3) the length of time that they spent in their offices. Faculty in open offices were more likely to report problems with distractions in general and

specifically, distractions affecting the length of time needed to complete a task and their ability to meet with students regarding sensitive issues. Faculty in open offices were also more dissatisfied with the overall level of office privacy and their inability to speak without being overheard. They were more likely to report problems with lack of privacy affecting the type of topics discussed, effectiveness of feedback to students, and the ability to effectively praise and criticize students. Faculty in open offices were significantly more negative in their assessments of the impact that their personal workspaces had on their effectiveness as teachers and faculty members. Finally, faculty housed in open offices were more likely to report working in locations other than their offices than were faculty housed in closed offices.

Students' perceptions of their meetings with faculty strongly supported the faculty perceptions. Students of faculty in open offices compared to those of faculty in closed offices reported (1) they would be more uncomfortable dropping in unexpectedly, (2) they received less useful feedback on their work, (3) they had less time to discuss their concerns, and (4) faculty offices were a less desirable place to meet with faculty.

Results from this study strongly confirm the detrimental effects that open offices can have on faculty behaviors and on student-faculty interaction. Ironically,

as Becker et al. report, enhanced communication and information flow were among the primary benefits originally cited for open-plan offices. Becker et al. concur with Altman (1975) that the loss of privacy resulting from a reduction in control over interpersonal boundaries in an open office produces certain adaptive responses. Flight, or working in locations other than the office, was one response. Changes in the nature or quality of communication between faculty and students appeared to be another response.

Consistent with these results, Farrenkopf and Roth (1980) found that privacy was highly valued among faculty. Privacy was rated higher in importance to faculty in shared offices than to faculty in single-occupancy offices. In another study Farrenkopf and others found that occupants of open-plan offices ranked acoustical and visual privacy significantly lower in adequacy than occupants in traditional office plans and significantly higher in importance (Farrenkopf & Roth, 1980). Their conclusion, which has direct relevance to the present study, was that environmental dimensions are perceived as more important when inadequacies exist than when all is adequate. That is, privacy is more salient in importance to faculty who do not have it than to faculty who do.

Summary

The work environment is now more widely recognized as contributing to worker satisfaction and performance. Given its importance, it is necessary to clarify the factors that influence satisfaction with the workplace and its relationship to work-related behaviors. One general factor that appears important in understanding reactions to work environments is users' perceptions of, and experiences in, preceding environments. Yet this information is often omitted in post-occupancy evaluation studies. Further, environmental dimensions appear to be more salient to users when deficiencies exist than when all is adequate. Deficiencies in certain environmental dimensions may produce more dissatisfaction than in others. The office evaluation literature has demonstrated that privacy, for example, is crucial to office workers and the perception of privacy is related to specific environmental experiences. Academic faculty have reported that inadequate privacy interferes with their capacity to work productively and to interact effectively with students.

Consistent with the direction of this literature, the study reported here attempted to clarify the relationship between evaluations of past and present environments and to investigate whether faculty satisfaction with the new facilities was related more to the correction of perceived deficiencies in the former offices than to the perpetuation

or introduction of other valued environmental characteristics. Because many faculty in this sample were vacating shared offices for private offices, the issue of privacy and its relationship to expectations of behavioral change was also examined. Finally, this study was designed to evaluate the building's "success" against a set of criteria determined by an administrative group, the university planning committee.

CHAPTER III

METHOD

Overview

The data for this thesis come from the first phase of a longitudinal evaluation of the faculty offices in the new Humanities Building at Loyola University of Chicago. This phase of the larger study was designed to provide information about how the offices were being used and perceived from the point of view of the users. All full-time faculty members whose offices were relocated to the new building as of January 1984 were asked to complete a questionnaire that addressed their perceptions and behavior in both their new and former offices.

The Humanities Building

The Humanities Building, located behind Cudahy Library at Loyola's Lake Shore Campus, was completed on November 30, 1983. There are a total of 157 offices, seminar and faculty conference rooms in the new building. The Loyola Computer Center and the Vice President of University Ministry Office occupy the building's first level. The second level contains an auditorium with a seating capacity of 250 people and the Fine Arts Department which includes faculty

offices, studios, and a gallery for displaying art. The remaining floors house the faculty offices for the Philosophy and Theology Departments on the third level, for the English Department on the fourth level, and for the History and Classical Studies Departments on the fifth level. The Lake Shore Campus Admissions offices are also located on the fourth level.

Subjects

All full-time faculty members whose offices were relocated to the new Humanities Building as of Spring Semester 1984 were asked to participate in the study. The academic departments represented in the study include: Classical Studies (9%), English (28%), Fine Arts (6%), History (18%), Philosophy (21%), and Theology (18%).

Members of the study population were identified via faculty lists made available by the departmental secretaries. The secretaries were later asked to verify the inclusion criteria for each person on the list. There were a total of 107 faculty in the defined population. Seventy-one people returned the questionnaire for a response rate of 66%.

The resulting sample of respondents included 57 men and 14 women (80% and 20%, respectively). Slightly more than half of the sample was over 45 years of age. Approximately one quarter of the sample were full professors at

Loyola; the remaining subjects were associate or assistant professors. The mean number of years that subjects had taught at Loyola was 13 years. Before moving, subjects had spent an average of 6.6 years in their former offices.

Various comparisons were made between the subject group and the group of faculty who did not return the questionnaire. Chi-square analyses revealed no significant differences in composition between the two groups in terms of gender, rank, department affiliation, or the number of years teaching at Loyola. Because the study was largely concerned with the issue of office satisfaction, it was important to ascertain whether the non-respondents and the respondents differed significantly in their level of satisfaction with the new offices. Twenty-five percent of the group of non-respondents were randomly sampled with replacement to be surveyed only in regards to their level of satisfaction with their new offices. A *t*-test compared the mean level of overall satisfaction with the new office between the random sample of non-respondents and a 25% random sample of the respondents. The results showed no significant difference in overall level of satisfaction between the two groups.

The Questionnaire

The data for this study come from a five-page questionnaire designed for self administration. A copy of

the questionnaire can be found in Appendix A. The focus of the questionnaire was on respondents' evaluations of their former and new offices. Respondents were asked to rate both spaces on a variety of dimensions such as accessibility to students, accessibility to colleagues, spaciousness, privacy, and comfort. In addition, respondents were asked to indicate the aspects that they most liked and most disliked about both office spaces they have occupied and to identify what factors they generally considered to be most important in an academic office environment. Although most of the questions called for subjective ratings, respondents were also asked to provide some information about their behavioral experiences in both offices. For example, respondents were asked to report the average amount of time per week that they spent in their former office and the number of hours per week that they expected to spend in their new offices.

Procedure

Before the questionnaire was distributed, Dr. Jill Nagy Reich, Assistant Professor of Psychology, personally contacted the chairperson of each of the six academic departments now located in the Humanities Building to explain the goals and requirements of the study. Following this initial contact, materials were dropped off to the departmental secretaries. The secretaries were asked to

distribute the cover letter and accompanying five-page questionnaire to all of the faculty members in their respective departments who now had office space in the Humanities Building. Respondents were asked in the cover letter to return the completed questionnaire to their departmental secretaries for later collection.

The questionnaires were distributed approximately 2-3 weeks after faculty members assumed occpuation of their new offices. Data collection began immediately following the move so that: (a) users' perceptions of their former spaces and experiences would still be memorable, and (b) users would still be knowledgeable about their new offices but had less than a month's experience with its use. As explained earlier, follow-up questionnaires and direct behavioral assessments will be made over the course of the next year when users' behavior has stabilized.

A high return rate was considered critical to achieving the goals of this evaluation. Therefore, follow-up contacts were made to encourage completion of the survey instrument. Respondents had been asked to include their names at the end of the questionnaire. The names were used only for follow-up purposes and all respondents were assured of total confidentiality. Two alternative follow-up procedures were used. First, efforts were made to reach respondents on the telephone to encourage completion

of the questionnaire. If respondents could not be reached on the telephone after several trials, they were sent another copy of the questionnaire accompanied by a personalized note requesting their completion.

There was a potential problem with timing that was directly related to the strategy of data collection. Some respondents completed the questionnaire right after distribution. Others took longer. Because of the discrepancies in completion time, the return dates were noted on each questionnaire to later investigate any bias in results. Subsequent analyses revealed that the differences in return dates did not alter any of the relationships reported in this thesis.

Measures

The questionnaire included a variety of open-ended questions pertaining to what respondents like, dislike, and consider most important in an office environment. A total of eight content-specific categories, and one miscellaneous category (available for further definition if necessary) were derived from the responses to these questions. The categorization scheme used here corresponded closely to results from other post-occupancy evaluation studies (Brookes, 1972; Farrenkopf & Roth, 1980) in which lists of environmental priorities were generated.

Most of the questionnaires were coded by one person.

However, all ambiguous responses were resolved by a second party. A check on the reliability of the coding scheme was performed on 15% of the questionnaires and it yielded a 94% inter-item agreement rate between two independent coders.

For the open-ended items described here, respondents were asked to list three factors that they most liked, most disliked, or considered most important in their office environment. Two different variables were derived from the responses to these series of questions: (1) the factors that respondents mentioned first in the series of three mentions; (2) the total number of times that each factor was mentioned across the three possible mentions. None of the results presented in this thesis depended on which variable was used. Thus, to be consistent with prior research on the validity of first mention data (Veroff, Douvan, & Kulka, 1981) the results presented in this thesis are based only on the first mention responses.

Office satisfaction was a critical issue in this study. Respondents were asked to use a seven-point scale to rate their level of satisfaction with both their former and new offices on a variety of dimensions such as: a place to work in, access to classrooms, access to students, access to departmental faculty, access to all Humanities faculty. A global satisfaction index was created that

averaged responses across a minimum of three of the five dimensions. Cronbach's Alpha test for internal consistency revealed that the two satisfaction indices related to former and new offices had high inter-item reliability (index for satisfaction with former office, Alpha = .78; index for satisfaction with new office, Alpha = .87).

Methodological Concerns

As mentioned earlier, this survey represents the first wave of a longitudinal evaluation. There are certain questions that are relevant to the aims of the larger study that cannot be adequately addressed by the results from this phase. For instance, data from this study cannot address whether any changes in perception and expected behavior are related more to the anticipation or process of moving than they are to specific features of the new offices. Follow-up interviews and behavioral observations will determine whether changes in perceptions and expected behavior endure over time or are more reflective of a halo effect.

There are other problems more specific to this survey design that restrict some of the conclusions suggested by these data. This study relies exclusively on user reports which are vulnerable to inaccuracies resulting from faulty recall, response bias, or demand characteristics. There are two items on the survey that are critical

to the results reported here. One item asks respondents to report prior behavior, specifically how many hours they spent in their former offices during an average week. The other item asks respondents to estimate the time they plan to spend in their new offices. Reports of past behavior and predictions of future behavior will inevitably contain errors of judgment. In addition, it is somewhat sensitive to ask faculty to report how such time they have spent or plan to spend in their offices. This could be interpreted as asking faculty to report how much they "work," which may serve to elevate the estimates. Although worth special notation, this issue does not represent a major limitation to the goals of this survey, which were essentially to evaluate change. It seems safe to assume that whatever bias results from the wording of these items would be distributed relatively evenly across past and future reports of behavior as well as across different individuals.

CHAPTER IV

RESULTS

Overview

This study was designed to explore two categories of questions. The first set of questions was more theoretical in nature and included these issues:

1. What do faculty consider generally most important in an office environment?
2. Are there differences in office satisfaction and evaluation between people from contrasting environments?
3. Is there a relationship between people's evaluations of past environments and their evaluations of new and ideal environments?
4. Is there a relationship between satisfaction with the physical environment and individual behavior, specifically the amount of time spent in the environment?

The second category of questions was less theoretical, and more applied in nature. These issues were related to the major goals set for the new building by the administrative planning committee. Specifically, the committee hoped that providing better office accommodations would

result in an overall increase in the amount of time that faculty spent on campus, and ultimately, an increase in the amount of time faculty spent with students and other faculty members. This survey was designed to answer the following questions:

1. Are the faculty more satisfied with their new offices?
2. Are the faculty planning to spend more time on campus now that their offices have been relocated to improved facilities? If so, are they planning to spend this additional time in their offices as opposed to other campus locations?
3. Are faculty members planning to spend more time in meetings with students and other faculty?

Theoretical Findings

Environmental priorities. Respondents were asked to indicate what they perceived as the most important factor to consider when designing faculty offices. Table 1 presents the proportion of respondents who identified various environmental dimensions as their top priority. As seen in Table 1, "space and equipment" was cited by 37% of respondents as the most important design consideration. Designing private or single offices was mentioned by the second highest proportion, or 24%, of respondents.

Group differences in office satisfaction and

Table 1

First Priority for Office Design

	%	n
Space and Equipment	37	26
Private Office	24	17
Acoustical Privacy	11	8
Location	7	5
Lighting	4	3
Windows	3	2
Aesthetics	3	2
Temperature	3	2
Other	1	1
Missing Value	7	5
TOTAL	100	71

evaluation. Before relocating, respondents in this study were housed in offices of contrasting quality. Of the 71 study participants, 68% moved from an older, less accommodating, currently condemned office building named Wilson Hall. This group of faculty, from the English, History, and Philosophy Departments, were candidates for relocating because of an obvious need for more suitable office space and will be described here as the "Need Group." The remaining 22 study participants from the Theology, Classics, and Fine Arts Departments, relocated from a group of more impressive facilities, specifically 1041 and 1051 West Loyola, Damen Hall, and Dumbach Hall. This group of faculty were relocated to the new building because of their affiliation with the other Humanities Departments, and will be referred to here as the "Relationship Group."

Given the known differences in quality of former office spaces, it was not surprising to find significant differences between the Need and Relationship Groups with respect to their level of satisfaction with their offices and with respect to the factors they most liked and most disliked. On a seven-point scale, the mean level of satisfaction was 3.23 for the Need Group ($N = 48$) and 4.57 for the Relationship Group ($N = 21$) [$F(1,68) = 18.9$, $p < .01$].

All respondents were asked to identify the factors

they most liked and most disliked about their former offices. The original coding scheme included 9 response categories. For presentation purposes, the data were re-grouped into the following 5 categories:

1. Ambient conditions, which includes lighting, noise, and temperature considerations.
2. Private office, which includes satisfaction with having a private or single occupancy office as a "like" factor or dissatisfaction with sharing an office as a "dislike" factor.
3. Location, which includes access to students, classrooms, other faculty, support services, or parking facilities.
4. Space and furnishings, which includes all issues related to size, furniture, or windows.
5. Other, which is a miscellaneous category including all other responses.

Table 2 presents the proportion of people from each group who mentioned a certain factor as representing what they most liked about their former offices. The vast majority of the Need Group identified "location" as being a factor they most liked about their former offices. Responses from the Relationship Group were distributed across the five categories. Table 2 shows that the chi-square comparing the distribution of responses between

Table 2

Former Like Factors by Group

	Need Group	Relationship Group
Location	88%	32%
Space and Furnishings	3%	27%
Private Office	0%	27%
Ambient Conditions	0%	9%
Other	0%	5%
TOTAL	100% (N=34)	100% (N=22)

$\chi^2 = 25.47$

df = 4

$p < .01$

these two groups was significantly different at $p < .01$ level.

Table 3 reveals that these groups also differed significantly with respect to the factor they most disliked about their former office spaces. The biggest difference was in the proportion of people who mention private offices as a dislike factor. Almost one-third of the Need Group and only 9% of the Relationship Group raised this issue. The chi-square analysis reveals a significant difference between these groups at $p < .01$ level.

In addition to the open-ended questions regarding former office spaces, respondents were asked to use a seven-point semantic differential scale to rate their former offices on nine dimensions related to spaciousness, privacy, ventilation, noise, functionality, lighting, attractiveness, comfort, and convenience. Table 3 presents the results from a factor analysis using a principle factors solution. Relying on the Kaiser criterion, the analysis revealed one global factor accounting for 52.6% of the total variance. Using the regression method, factor scores were calculated and then compared between the groups. As might be expected, there was a significant difference between the Need and the Relationship Groups with the Need Group rating their former offices significantly lower on this global factor than the Relationship

Table 3

Former Dislike Factors by Group

	Need Group	Relationship Group
Private Office	31%	9%
Space and Furnishings	29%	23%
Ambient Conditions	10%	27%
Location	2%	27%
Other	28%	14%
Total	100% (N=42)	100% (N=21)

$\chi^2 = 15.59$

df = 4

$p < .01$

Table 4

Factor Analysis of Former Office Scale Ratings[a]

	Factor I
Eigenvalues	4.73
Percent of Total Variance Accounted For	52.6%

VARIABLES	Factor Loadings
cramped. . .spacious	0.56
public. . .private	0.45
poorly ventilated. . .well ventilated	0.57
noisy. . .quiet	0.40
nonfunctional. . .functional	0.73
poorly lighted. . .well lighted	0.45
unattractive. . .attractive	0.56
uncomfortable. . .comfortable	0.71
inconvenient. . .convenient	0.31

[a]Principle factors solution using Kaiser criterion.

Group [$F(1,60) = 65.3$, $p < .01$].

Respondents were asked the same group of open-ended and closed-rating questions to evaluate their new offices in the Humanities Building. Table 5 shows that there was a significant difference between the Need and the Relationship Groups in terms of what people identified as the factor they most liked about their new offices. Slightly over one-third of the Need Group mentioned having a private office as the factor they most liked about their new offices. In contrast, none in the Relationship Group mentioned this factor. There was no corresponding difference between these two groups in what they most disliked about their new offices.

Table 6 presents the results from the factor analysis of the semantic differential scale data pertaining to the new offices. The factor analysis used a principle factors solution with a varimax orthogonal rotation. Again, relying on the Kaiser criterion, three factors were uncovered with this analysis. The first factor which is identified by the scale items pertaining to function, lighting, attractiveness, comfort, and convenience represents a general "accommodations" factor, and accounts for 41% of the total variance. The second factor, which accounts for 16.4% of the total variance, is identified by the items pertaining to space and privacy and appears

Table 5

Present Like Factors by Group

	Need Group	Relationship Group
Space and Furnishings	45%	53%
Private Office	36%	0%
Ambient Conditions	12%	9%
Location	5%	5%
Other	2%	33%
Total	100% (N=42)	100% (N=21)

$\chi^2 = 18.28$

df = 4

$p < .01$

Table 6

Factor Analysis of New Office Scale Ratings[a]

	Factors		
	I	II	III
Eigenvalues	3.69	1.48	1.00
Total Variance Accounted For	41.0%	16.4%	11.1%
VARIABLES	FACTOR LOADINGS		
cramped. . .spacious	0.13	0.74*	-0.18
public. . .private	0.12	0.81*	0.18
poorly ventilated. . .well ventilated	0.18	-0.13	0.84*
noisy. . .quiet	0.17	0.52	0.63*
nonfunctional. . .functional	0.71*	0.44	0.22
pooly lighted. . .well lighted	0.72*	-0.19	0.00
unattractive. . .attractive	0.74*	0.25	0.30
uncomfortable. . .comfortable	0.90*	0.08	0.02
inconvenient. . .convenient	0.72*	0.17	0.25

[a]Principle factors solution, varimax orthogonal rotation, Kaiser criterion. Starred loadings indicate items which discriminate one factor from another.

to be a "personal space" factor. The third factor is weakest in terms of variance accounted for and is less clear conceptually than the other two. The items that load on this factor are those related to noise and ventilation. Factor scores, calculated with the regression method, did not differ significantly between the Need and the Relationship Groups.

Relationship between past and present evaluations. Another goal of this study was to investigate the possible relationships between people's evaluations of past environments and their evaluations of new environments. The data revealed interesting differences in the relationships among past and present likes and dislikes between the Need and the Relationship Groups. For the Need Group, there was a significant association between what people most disliked about their former offices and what they most liked about their new offices ($\chi^2 = 34.37$; $df = 16$; $p < .01$). The largest overlap occurred in regards to the private office issue. Ten of the 12 faculty who were dissatisfied with sharing their former offices expressed satisfaction at having a private office in the new building.

There was also a significant association for the Need Group between what they most disliked about their former offices and what they considered most important in any office environment ($\chi^2 = 33.18$; $df = 16$; $p < .01$).

Again, having a private office was the major link in this relationship.

For the Relationship Group there were no significant relationships between what respondents liked or disliked about their former offices and what they liked or disliked about their new offices.

Office satisfaction and behavior. Regression analyses were conducted to investigate whether level of office satisfaction predicted time spent, or time intended to spend, in the office environment. Results showed that for both groups, former satisfaction was not a significant predictor of time spent in the former offices. However, level of satisfaction with the new offices was a significant predictor of the time faculty intended to spend in the new offices for the Need Group but not for the Relationship Group. Although statistically significant, the prediction equation for the Need Group accounted for only 10% of the variance [$F(1,43) = 5.03$, $p < .05$, Beta = -.32].

Regression analyses that included three independent variables were conducted for all subjects. The three predictor variables were: satisfaction with the office space, membership in either the Need or Relationship Group, and the interaction between level of satisfaction and group membership. The regression equations from these analyses revealed the same effects but they were not as

statistically strong.

Applied Findings

Increase in satisfaction. For all subjects there was a significant increase in the level of satisfaction with their new offices ($\bar{X}$ = 5.84) as compared to their former offices ($\bar{X}$ = 3.61) [$t(1,66) = 9.0$, $p < .01$].

Increase in time. Respondents were asked to indicate how many hours on the average they spent in their former offices during the Fall Semester. Because the first phase of this longitudinal design was conducted immediately following the relocation, respondents surveyed in this phase were asked to estimate how many hours they expected to spend each week in their new offices during the Spring Semester.

There were no significant differences between these groups in how much total time they spent on campus or in the amount of time specifically spent in their offices before moving. The Need Group reported spending on the average 27.4 hours per week on campus during the Fall, 10.8 of which were spent in their offices. The Relationship Group reported spending an average of 31.6 hours per week on campus, 20.3 of which were spent in their offices. After moving, both groups expected to spend approximately the same amount of time in campus locations other than their offices as they had during the Fall. Further, both

groups said that they expected to spend on the average 18-20 hours per week in their new offices during the Spring.

There were significant differences between these two groups regarding the change in estimates for office time. A repeated measures analysis was conducted comparing the time estimates in the former and new offices between the Need and Relationship Groups. A significant group by time interaction was found [$F(1,64) = 8.8$, $p < .01$]. As seen in Table 7, only the Need Group reported a significantly increased intention to spend time in their new offices.

It is worth noting that there was no corresponding difference in courseload between the Fall 1983 Semester and the Spring 1984 Semester for either group. Further, there was no significant difference for either group in the time estimates reported for other campus locations other than the offices between the Fall and Spring Semesters.

Increase in interactions. Respondents were asked to estimate for an average day how many times they met with various groups in scheduled appointments and impromptu meetings during the Fall, and how many times they planned to meet with these groups during the Spring. The groups included: other faculty in their respective departments, other Humanities faculty outside their departments, and

Table 7

Behavioral Changes by Facility and Group

	Hours Per Week				Daily Meetings with Students			
	Old Office	New Office	N	t	Old Office	New Office	N	t
Need Group	10.8	18.3	45	4.26**	3.51	3.94	35	2.32**
Relationship Group	20.3	19.7	21	0.48	4.17	3.94	18	0.66

**Significant at $p < .05$

students. Results showed that the number of scheduled appointments faculty expected to have with other faculty or with students were not significantly increased for either the Need or the Relationship Groups. However, there were important differences in the number of informal meetings faculty expected to have once in the new building. For all subjects, there was a significant increase in the estimates for daily impromptu interactions with other departmental faculty [$t(1,52) = 2.51$, $p < .05$]. Before moving, respondents estimated an average of 3.4 daily impromptu meetings with other departmental faculty. After moving, respondents estimated 4.1 daily impromptu meetings. There was also a significant increase for all subjects in their estimates for interactions with Humanities faculty outside their respective departments [$t(1,46) = 2.03$, $p < .05$]. Before moving, subjects estimated an average of 1.7 daily meetings; after moving, they estimated an average of 2.5 daily meetings.

Although all subjects expected more frequent informal interactions with faculty, only members of the Need Group anticipated a significant increase in their informal contacts with students. As seen in Table 7, the Need Group estimated a significant increase in the number of daily impromptu meetings with students whereas there was no corresponding increase of significance among members

of the Relationship Group.

CHAPTER V

DISCUSSION

Overview

Results from this study point to an issue of major importance in understanding user response to their environment. Faculty perceptions and intended behavior in the new offices were best understood in conjunction with data on their perceptions and level of satisfaction with their former offices. There were important differences between the faculty who were generally dissatisfied with their former offices, the Need Group, and the faculty who were generally satisfied with their former office accommodations, the Relationship Group. In terms of environmental evaluation, the Need Group generally valued characteristics in their new offices that they considered deficient in their former offices. This was not true for the Relationship Group. In terms of intended behavior, only the Need Group planned to spend more time in their new offices. Further, satisfaction with the new offices predicted the amount of weekly time planned for the new offices among the Need Group but not among the Relationship Group. Finally, although both groups expected more

interaction with other Humanities faculty both inside and outside their departments, only the Need Group expected more informal interaction with students in the new offices.

The purpose of this chapter is to explore these findings in more depth and to suggest future directions for related research.

Environmental Evaluation

The distinguishing characteristic of the Need and the Relationship Groups was the disparate level of satisfaction with former office conditions. On two separate office satisfaction measures (i.e., an overall index related to functionality dimensions and a factor score derived from a factor analysis of various office characteristics), the Need Group expressed significantly more dissatisfaction with their former offices than the Relationship Group. Although the groups did not differ significantly in terms of what they generally liked about any academic office environment. They did differ in terms of what they specifically liked and disliked about their former offices. For instance, there was unanimity among the Need Group on the choice of location as a like factor, perhaps because few other environmental dimensions of their offices were sufficiently acceptable to compete for priority. In contrast, responses from the Relationship Group were more evenly distributed across issues pertaining

to location, space and furnishings, and having a private office.

There were also differences between these groups in terms of what they disliked about their former offices. Almost two-thirds of the Need Group mentioned either sharing an office or inadequate space and furnishings as their primary dislike factor. Only one-third of the Relationship Group identified either of these issues.

Perhaps more interesting than these findings, however, were the differences between the groups in their evaluations of the same environment, the new offices in the Humanities Building. None in the Relationship Group identified having a private office as the most important like factor associated with their new offices. In contrast, slightly more than one-third of the Need Group identified this as a critical factor. There were no significant differences between these groups in terms of the dislike factors associated with the new offices.

These results are intriguing in light of previous environmental research on the relationship between environmental shortcomings and perceived importance. Various researchers have found that environmental dimensions tend to be rated as more important when perceived deficiencies exist (Farrenkopf & Roth, 1980; Marans & Spreckelmeyer, 1982).

Other results in this study supported the relationship between evaluation of past environmental deficiencies and evaluation of environmental priorities. There was a significant association for the Need Group between what they most disliked about their former offices and what they considered most important in any office environment. There was also a significant association for the Need Group between what people most disliked about their former offices and what they most liked about their new offices. The link in both these relationships was the private office issue. That is, more people chose sharing an office as their primary dislike factor and having a private office as their primary like or ideal factor than any other combination of responses.

There were no corresponding associations among the Relationship Group between what they felt about specific characteristics of their previous office environments and what they felt about their new offices. As a group, these faculty were generally satisfied with their former office conditions and they failed to highlight any particular environmental dimensions as especially troublesome.

In this study the environmental shortcomings were connected to past, and not current, office environments. Thus, results reported here do more than reinforce the idea that environmental shortcomings influence the value

placed on those particular dimensions. They also reinforce the importance of including information about past environmental experiences and perceptions in evaluations of recently inhabited environments. This added research implication is consistent with the conceptual model proposed by Marans and Spreckelmeyer (1982). Their model states that environmental evaluation can best be understood by addressing people's standards of comparison or their frames of reference. These standards evolve at least in part from past experiences, and perhaps more specifically, from dissatisfaction with past experiences.

Changes in Intended Behavior

The administrative planning committee hoped that the improved office facilities would increase faculty office time and relatedly, faculty availability. To evaluate fulfillment of these goals, two kinds of behavioral intentions were examined in this study: intentions regarding time spent in the office and intentions regarding interaction rates with other faculty and students.

Members of both groups expressed significantly more satisfaction with the improved facilities. But only the Need Group reported intentions to spend more time in the new offices. Regression analyses revealed that office satisfaction predicted time estimates only for the Need Group and only in the new offices.

Although not specifically tested in this study, results suggested that environmental conditions affect time schedules only when conditions, previously unsatisfactory, are remedied. Once certain environmental needs are met, schedules conform more to work demands. In this instance, perhaps once the Need Group experienced satisfactory office facilities, their office schedules were altered to accommodate their normal teaching and research demands and not an unsatisfactory work environment. Time schedules among members of the Relationship Group remained constant because they were never limited by their work environment. More research is needed to clarify these findings.

All subjects anticipated more frequent informal interactions with other faculty. This finding is most likely related to particular design features in the new Humanitites Building, the consolidation of entire departments on one floor, and the consolidation of all Humanities departments into one building. The faculty in this study were not previously housed in facilities that were comparable in these ways.

Only the Need Group expected more frequent informal contact with students. This finding may be related to the increase in personal space afforded by the new office conditions. The Need Group identified two major

improvements with the new offices, additional space and private offices. Previous research has investigated the influence of privacy on social interaction (Becker et al., 1983; Holahan & Slaikey, 1977; Sundstrom et al., 1982a, 1982b) and found that interaction is facilitated more by the opportunity for privacy than by unlimited opportunities for interpersonal contact. In particular, lack of privacy has been found to have detrimental effects on the quality and content of faculty-student interaction (Becker et al., 1983).

Future Directions for Related Research

Results from this study address many questions and raise others. For instance, the data show that all subjects were more satisfied with the present office accommodations. Yet only the subjects who were especially dissatisfied with former conditions, the Need Group, intended to spend more time in their new offices. One general interpretation was offered that related to the importance of privacy and personal space. Further research is needed to explore this possibility. Further research is also needed to explore how faculty perceived the meaning and impact of these environmental improvements. Perhaps, as the Hawthorne reseachers suggested, the new schedules are resulting in part from attitude changes, such as improved morale associated with receiving new office facilities.

As mentioned earlier, the study reported here is part of a longitudinal evaluation which includes plans for follow-up questionnaires and direct behavioral observations. One of the issues that will be investigated relates to whether the expected changes in behavior that are reported here are actually realized, and if so, whether they persist over time or reflect more a halo effect.

The data presented here revealed an interesting relationship between office satisfaction and behavioral intentions. Additional data are needed to investigate the attitude-behavior relationship further. As Fishbein and Ajzen (1975) suggest, attitude measures are strengthened with data on beliefs, feelings, and action tendencies. Although beyond the scope of this study, it would be useful to collect data on faculty beliefs about office needs and more data on their past and present action tendencies in academic office environments. Fishbein and Ajzen also argue for behavioral measures of corresponding specificity. In this case, behavioral observations of past and present office use would be indicated.

Another issue raised by these data pertain to the possiblity of a hierarchy of need phenomenon analagous to that originally proposed by Maslow, adopted later by Herzberg, and most recently by Sundstrom et al. (1982b). It may be, for example, that when certain basic environmental needs are unfulfilled, behavior is affected. Once

these needs are met, behavior is unaffected. Thus, when certain faculty needs for office accommodations are wanting, schedules are affected. Once these needs are met, as they seem to have been for the Need Group in the new building and for the Relationship Group in both new and former spaces, office schedules stabilize more in accordance with faculty schedules than with environmental conditions.

CHAPTER VI

CONCLUSION

The purpose of this study was to evaluate faculty attitudes towards new office conditions and their expectations for behavioral changes. The sample included full-time Humanities faculty who had relocated to the new facility as of January 1984. Questionnaire data were collected on environmental perceptions and experiences for both the new offices and the offices faculty inhabited immediately preceding relocation. Very different patterns of responses emerged for the faculty who left office conditions with which they were generally dissatisfied, the Need Group, as compared to faculty who vacated offices with which they were generally satisfied, the Relationship Group. The findings suggest that the data collected on faculty perceptions of, and satisfaction with, their former offices were key to understanding environmental perceptions and intended behavior in the new offices.

The entire group of faculty was significantly more satisfied with the new office accommodations. Yet only the faculty who were especially dissatisfied with their former conditions, the Need Group, intended to spend more

time in their present offices. For all subjects, there was a significant increase in the estimates for daily impromptu meetings with other departmental faculty and for formal or informal daily interactions with other Humanities faculty as a whole. Yet only the Need Group expected to meet more with students on an informal basis in the new as compared to the former facility. In terms of the relationship between environmental satisfaction and time spent in the environment, regression analyses revealed that office satisfaction predicted time estimates only for the Need Group and only in the new offices.

Results from this study corroborate what others (Farrenkopf & Roth, 1980; Marans & Spreckelmeyer, 1982) have found, specifically, that environmental dimensions are more important to users when deficiencies exist. Further, users perceive ideal environments more in terms of remedied deficiencies instead of perpetuation of valued characteristics.

The critical change for the Need Group appeared to be the increase in space and privacy afforded by the new office accommodations. These were the key components in their evaluations of both their former and present offices. For the Need Group, the two major complaints of their former offices related to shared offices and lack of space. The two factors they liked most about the new

offices were more space and private offices. It is likely that the increase in personal space, in terms of both square footage and privacy concerns, was responsible for the Need Group's expectation for more office use and for more frequent informal interactions with students.

Results from this study suggest that a more complete understanding of users' environmental perceptions and behaviors requires information about their frames of reference, specifically, their perceptions and experiences in comparable environments. Findings from post-occupancy evaluation studies may be more readily interpretable with this added dimension.

Results from this study also point to the importance of systematic evaluations of the workplace. One of the guiding assumptions of this study was that any evaluation of the "success" of an office environment requires user-based information. Few building planners, designers, or evaluators dispute the value of user surveys. However, few have designated them a priority. As shown here, satisfaction with the workplace can have an important impact on worker behavior, and consequently, on fulfillment of organizational objectives. One of the major goals of the administrative planning committee was to increase faculty availability through improved office facilities. Results from this study indicated that for the entire sample, the

improved facilities generated more office satisfaction and an increase in the intended rate of interaction among faculty. For the faculty who left a particularly dissatisfactory situation, moving was associated with an increase in time planned for the new offices and in expected frequency of interactions with students. Thus far, then, the building appears to be a success.

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APPENDIX A

LOYOLA UNIVERSITY OF CHICAGO

6525 North Sheridan Road, Chicago, Illinois 60626 • (312) 274-3000

January 9, 1984

Dear Colleague:

As an environmental psychologist who has been involved in the development of the new Humanities Building I am most interested in how you feel about this facility. Therefore, I am writing to ask you to complete the attached questionnaire. The purpose of this survey is to discover how well the physical characteristics and qualities of the Humanities Building meet the needs of its users. This information will then be used in the completion and maintenance of the present facility and in the planning and design of new facilities. As a faculty member you are in the best position to identify the important factors of this kind of facility.

I will be asking what types of activities you are routinely involved in and how you feel about the places where you typically perform these activities. All of the questions relate only to your former facility or the new Humanities Building.

Because I wish to understand how your needs and preferences might shift over time, I ask that you include your name at the end of this form; I may ask you to participate in this survey one more time during the course of the year. I assure you that names will be used only for this second contact. In no way will the data be identified with any individual respondent.

The usefulness of our results depends on how accurately I am able to describe your needs and preferences now and in the future. It is for this reason that I assure you total confidentiality and urge you to complete this questionnaire. I recognize that this is a busy time of the year but hope that you will take 10 to 15 minutes to answer these questions.

Thank you for your assistance. It would be most helpful if you could complete this within the week. When completed, please return to your department secretary.

Sincerely,

Jill Nagy Reich

Jill Nagy Reich, Ph.D.
Assistant Professor of Psychology

JNR/jms
Enc.

HUMANITIES BUILDING SURVEY

THE FIRST SET OF QUESTIONS PERTAINS TO THE OFFICE YOU OCCUPIED BEFORE MOVING TO THE NEW HUMANITIES BUILDING.

1. Where was your former office located? Building:_____ Room: _____

2. How long were you in that office? _____years _____months

3. During an average week this past Fall Semester, approximately how many hours did you spend on campus: in your office: _____ hours per average week
in all other campus locations (excluding residence) _____hours per average week

4. Overall, how satisfied were you with your former office as a place:

To work in	1	2	3	4	5	6	7
	Very Unsatisfied						Very Satisfied
To get to classrooms	1	2	3	4	5	6	7
	Very Unsatisfied						Very Satisfied
To be accessible to students..	1	2	3	4	5	6	7
	Very Unsatisfied						Very Satisfied
To be accessible to your ..... departmental faculty	1	2	3	4	5	6	7
	Very Unsatisfied						Very Satisfied
To be accessible to ..... Humanities faculty	1	2	3	4	5	6	7
	Very Unsatisfied						Very Satisfied
OTHER (please specify)	1	2	3	4	5	6	7
_____	Very Unsatisfied						Very Satisfied

5. Recognizing that your schedule varies from day to day, select an average day during this past Fall Semester and indicate the approximate number of times per day that you performed the following activities as well as where these activities were likely to occur, such as your office, the hallway, etc.

	Times on an Average Day	Location on an Average Day
Interacted with students in scheduled appointments	_____	_____
Interacted with students in impromptu meetings	_____	_____
Interacted with your departmental faculty in scheduled appointments	_____	_____
Interacted with your departmental faculty in impromptu meetings	_____	_____

Interacted with other Humanities faculty _____ _____

Interacted with non-Humanities faculty _____ _____

6. Please circle the number which best describes your former office and, if possible, comment briefly about the reason for your rating in the space provided to your right.

My former office was:

1 2 3 4 5 6 7 .....Reason: _____
cramped spacious

1 2 3 4 5 6 7 .....Reason: _____
public private

1 2 3 4 5 6 7 .....Reason: _____
poorly ventilated well ventilated

1 2 3 4 5 6 7 .....Reason: _____
noisy quiet

1 2 3 4 5 6 7 .....Reason: _____
non functional functional

1 2 3 4 5 6 7 .....Reason: _____
poorly lighted well lighted

1 2 3 4 5 6 7 .....Reason: _____
unattractive attractive

1 2 3 4 5 6 7 .....Reason: _____
uncomfortable comfortable

1 2 3 4 5 6 7 .....Reason: _____
inconvenient convenient

7. In order of importance indicate the three aspects of your former office that you most liked and the three aspects of your former office that you most disliked.

Most Liked		Most Disliked	
_____	first	_____	first
_____	second	_____	second
_____	third	_____	third

8. What do you consider to be the three most important factors when designing faculty offices?

First most important factor _____

Second most important factor _____

Third most important factor _____

THE NEXT SET OF QUESTIONS PERTAINS TO YOUR PRESENT OFFICE IN THE NEW HUMANITIES BUILDING.

9. What is the room number of your present office? _____

10. During an average week this uncoming Spring Semester, approximately how many hours do you expect to spend on campus?

in your office _____ hours per average week

in all other campus locations (excluding residence) _____ hours per average week

11. Overall, how satisfied are you with your present office as a place:

To work in	1	2	3	4	5	6	7
	Very Unsatisfied						Very Satisfied
To get to classrooms	1	2	3	4	5	6	7
	Very Unsatisfied						Very Satisfied
To be accessible to students..	1	2	3	4	5	6	7
	Very Unsatisfied						Very Satisfied
To be accessible to your .... departmental faculty	1	2	3	4	5	6	7
	Very Unsatisfied						Very Satisfied
To be accessible to ..... Humanities faculty	1	2	3	4	5	6	7
	Very Unsatisfied						Very Satisfied
OTHER (please specify)	1	2	3	4	5	6	7
	Very Unsatisfied						Very Satisfied
_____							

12. Estimate for an average day during the upcoming Spring Semester the number of times that you expect to perform the following activities and where you expect these activities to occur.

	Times on an Average Day	Locations on an Average Day
Interact with students in scheduled appointments	_____	_____
Interact with students in impromptu meetings	_____	_____
Interact with your departmental faculty in scheduled appointments	_____	_____
Interact with your departmental faculty in impromptu meetings	_____	_____
Interact with other Humanities faculty	_____	_____
Interact with non-Humanities faculty	_____	_____

13. Please circle the number which best describes your present office and, if possible, comment briefly about the reason for your rating in the space provided to your right.

My present office is:

1 2 3 4 5 6 7 .....Reason: _____
cramped spacious

1 2 3 4 5 6 7 .....Reason: _____
public private

1 2 3 4 5 6 7 .....Reason: _____
poorly well
ventilated ventilated

1 2 3 4 5 6 7 .....Reason: _____
noisy quiet

1 2 3 4 5 6 7 .....Reason: _____
non functional
functional

1 2 3 4 5 6 7 .....Reason: _____
poorly well
lighted lighted

1 2 3 4 5 6 7 .....Reason: _____
unattractive attractive

1 2 3 4 5 6 7 .....Reason: _____
uncomfortable comfortable

1 2 3 4 5 6 7 .....Reason: _____
inconvenient convenient

14. In order of importance indicate the three aspects of your present office that you most like and the three aspects of your present office that you most dislike.

Most Like		Most Dislike	
_____	first	_____	first
_____	second	_____	second
_____	third	_____	third

THE NEXT QUESTIONS PERTAIN TO THE HUMANITIES BUILDING AS A WHOLE.

15. Imagine you were involved in designing a new Humanities Building for this campus. How important would the following factors be to you?

Building Costs 1 2 3 4 5 6 7
not important very important

Maintenance Costs 1 2 3 4 5 6 7
not important very important

Attractiveness of exterior 1 2 3 4 5 6 7
not important very important

Attractiveness of interior 1 2 3 4 5 6 7
not important very important

Location 1 2 3 4 5 6 7
not important very important

Space for classrooms 1 2 3 4 5 6 7
not important very important

Space for faculty offices 1 2 3 4 5 6 7
not important very important

Space for receptions 1 2 3 4 5 6 7
not important very important

Space for computer facilities 1 2 3 4 5 6 7
not important very important

Outdoor landscape (plaza, walks)..... 1 2 3 4 5 6 7
not important very important

One of the goals identified for this building was to provide a statement about the importance of Humanities to Loyola.

16. As a member of the Humanities faculty, do you perceive a need for this kind of a statement? Yes ____ No ____

17. If yes, are you satisfied with the new Humanities Building as a way of making this statement? Yes ____ No ____

Reason: _____

_____

Please complete the following information.

Age: 25-35 36-45 46-55 over 55 Sex: Male Female

Faculty: Full Time Part Time Number of years teaching at Loyola _____

Current Job Title _____

Department _____

Courses taught Fall, 1983 _____: Average # Students per class _____

Courses teaching Spring, 1984 _____: Average # Students per class _____

If there are any issues which we have failed to address that are important to how you perceive or use the existing facilities or expect to perceive or use the new facilities, please tell us about them on the back of this page.

THANK YOU. NAME _____

RETURN TO YOUR DEPARTMENT SECRETARY

APPROVAL SHEET

The thesis submitted by Laurie Anderson has been read and approved by the following Committee:

Dr. Jill Nagy Reich, Director
Associate Professor, Psychology, Loyola

Dr. Fred B. Bryant
Assistant Prfessor, Psychology, Loyola

The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the thesis is now given final approval by the Committee with reference to content and form.

The thesis is therefore accepted in partial fulfillment of the requirements for the degree of Master of Arts.

11-8-84
Date

Jill Nagy Reich
Director's Signature