

THE EFFECTIVENESS OF FLOWERS AS A CHANGE ELEMENT IN THE  
OFFICE ENVIRONMENT ON THE ATTITUDES OF EMPLOYEES

A THESIS

Presented in Partial Fulfillment of the Requirements  
for the Degree of Masters of Science

by

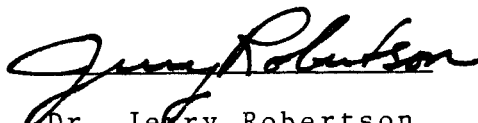
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## Chapter I

### INTRODUCTION

The positive effects that flowers create have long been recognized by consumers and florists. Florists have stressed this positive effect in their marketing strategies, especially emphasizing the beneficial effects flowers can create for special occasions. However, this strategy has instilled into consumers a limited view of when, how, and where flowers can be used. Although consumers view flowers as a precious and beautiful product they also tend to view flowers as a luxury product, such as lead crystal or bone china, that is only appropriately used on rare, special occasions. And being viewed as such a luxury, consumers tend to purchase flowers mainly for others, justifying the purchase as a gift but not for themselves (5).

American florists have envied the Dutch florists, whose customers purchase flowers regularly for themselves. The American Florists Marketing Council has been exploring new marketing strategies to promote the everyday use of flowers (4, 49).

The positive psychological and behavioral effects of nature, gardening, and horticulture have often been mentioned in literature (3, 6, 17, 23, 29, 36, 48, 51, 54). These positive effects are thought to stem from the ability of plants to meet psychological needs (aesthetics, pattern, change, nature, or nurturing). Positive effects have been reported mostly for green plants but flowers could potentially be more effective, as Everett Conklin suggested, since they could meet additional needs for color, beauty, and change (10). The benefits of increased flower use would not only be in beautified settings but also in the positive effect on humans who come in contact with them.

Concerns have been raised in recent years about the quality of work life and providing humane work environments that meet the needs of individuals (52, 53). This heightened level of concern for employees has resulted in firms being more open to initiate changes in the physical environment regardless of measured productivity effects. In this atmosphere of concern for individual needs, the interior plantscaping industry was developed rapidly, as plants met individual needs for aesthetics as well as for nature, especially in urban settings. Interiorscaping has expanded now to the point of being widely accepted and expected in many interior designs (17, 31). Progressive



interiorscapers are currently seeking to expand their market by introducing seasonal flowering plants and fresh cut flowers as additional environmental changes (54). Although firms are still concerned about the quality of work life issues, the concern is not purely humanistic. Since the concerns were initially raised, firms have concentrated more on meeting those individuals' needs that would ultimately be beneficial to the organization. Because of this concern, the investigation of the acceptance of flowers in the office environment, like that of plants, must also be accompanied by the investigation of the flowers' effectiveness in causing changes in employees' attitudes. Thus, the objectives of this study were as follows: (1) to determine if the presence of flowers in an office environment will be perceived as a change, (2) to measure possible changes in employees' attitudes, and (3) to measure some individual differences to determine if any of those differences moderate the effectiveness of the flowers.

## Chapter II

### THEORETICAL FRAMEWORK AND LITERATURE REVIEW

#### 2.1 COGNITIVE THEORY

The objectives of this study were derived from the basic cognitive theories. Cognitive theories concentrate on the intervening processes between a stimulus and a response as opposed to behavioral theory, which concentrates on the nature of the actual stimulus and response. These intervening processes, or psychological reactions, may contain any combination of cognitive and affective components. These theories have been widely accepted as important in understanding human behavior. "Individuals at work, like individuals everywhere, are both thinking and feeling creatures. Human phenomena in organizations cannot be understood without this perspective..." (43).

A number of general theories have been developed to aid in understanding the phenomena of human behaviors. Most cognitive theories concentrate on various links in the cognitive process (see Fig. 1). The basic links are between the stimulus, the psychological reactions, and the behavioral responses. Perception, circumstances,

individual differences, and the environment are considered moderators of the basic links. Researchers have acknowledged the importance of studying more than one link in the process, but have also cautioned that all the links cannot be adequately examined simultaneously. It is up to the researcher to determine what links are most crucial to his/her particular study.

## 2.2 ROLE OF ATTITUDE

An attitude is sometimes defined as a mental or emotional position toward a fact or state, or as the consequence of a cognition acquiring affective components (43, 45). Attitudes, being composed of cognitions and affects, can be identified as one of the psychological reactions between the stimulus and the response. Once this attitude is formed, as a reaction to a stimulus, it not only contributes to behavioral tendencies to respond in the current situation, but also can contribute to the way an individual perceives future stimuli. This role of attitudes can be defined as acting as preexisting moderating variables which predispose an individual to respond in a characteristic way to a stimulus (16). In both roles, attitudes are important contributing links between a stimulus and a response (Fig. 1).

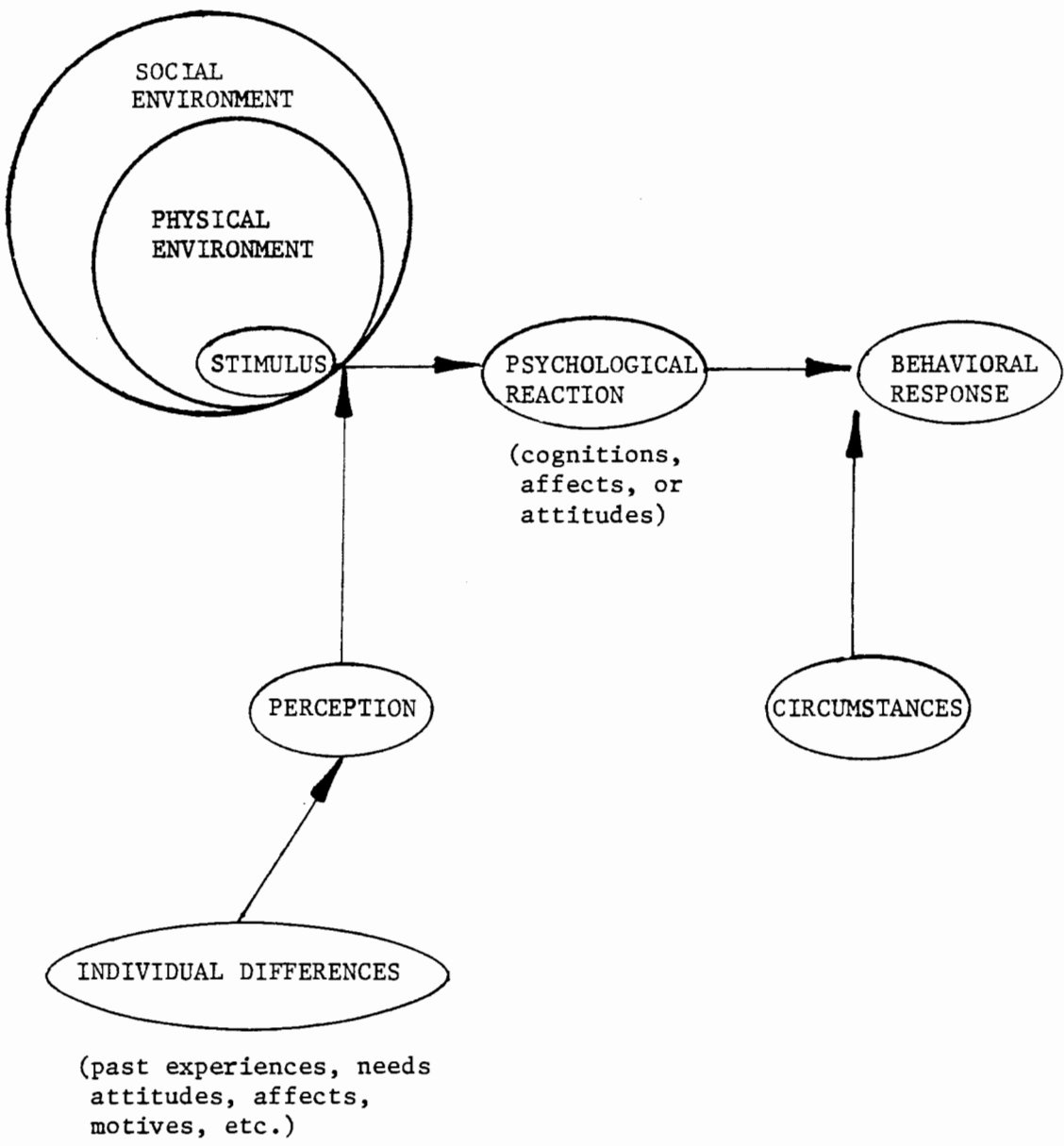


Fig. 1. Diagram of the Links in the Cognitive Process.

Although the actual behavioral response resulting from a stimulus and an attitude is often ultimately the most important as a practical consideration, research has found that the measurement of behavior directly is a large task with an inherent problem that the indices used may not represent the total picture (28). Lee further contends that "it's sometimes easier and just as valid to ask people how they feel"; in this statement he is promoting the measurement of attitudes as an indicator of behavior and a substitute for measuring behavior directly. He also promotes the measurement of attitudes as important in and of themselves: "oftentimes favorable employee attitudes are the most important outcomes."

The difficulty of measuring behavior directly combined with the inherent importance and prediction capabilities of attitudes contributed to the decision to study the effects of the stimulus (flowers) on attitudinal responses.

### 2.3 ROLE OF PERCEPTION

As Lee (28) states, "Human responses to the environment, like all responses, are sequential and interdependent. Since all the processes are interrelated, you must choose which stage you want to monitor; you may gain from observing more than one link." Because the attitudinal stage was to be monitored in this study, the additional

pertinent links for consideration seemed to be the moderating effects of perceptions and individual differences (see Fig. 1). As Lee (28) further contends, "Behavior does not occur without some perception of the situation."

Perception is defined as "all those processes by which an individual receives information about his environment" (45). Human perception is selective in that only certain stimuli in an environment are perceived; thus, to have any effect (behavioral, attitudinal, cognitive, or affective), a stimulus must first be perceived. Because of the importance of perception, one objective of the study was to determine post hoc if the flowers were perceived as a change.

In the design of the study, the variables that affect the perceptual process were taken into consideration: the characteristics of the stimulus, the characteristics of the environment, and the characteristics of the different individuals doing the perceiving (45). Literature on the characteristics of stimuli, physical environments, and individual differences was used as a basis for decisions about the design of the study. Since individual differences are variables that affect perception but that cannot be completely controlled, certain individual

differences were measured so they could be investigated post hoc for possible moderating effects. The application of these three perceptual variables (the characteristics of stimuli, the environment, and individuals) to the design of the study will be discussed separately in further detail.

### 2.3.1 Characteristics of Stimuli

Certain characteristics of a stimulus will increase its probability of being perceived. Those stimuli that are intense, frequent, numerous, novel, dominant, moving, unexpected, or otherwise distinct from the surrounding environment will have a higher probability of being perceived (45).

Flowers seem to have many of the characteristics that in most situations would ensure their being perceived; they are unexpected, provide color, pattern, intensity, and novelty. They also could be presented frequently and in substantial quantity to further ensure perception. Flowers not only possess the characteristics for perception, but also those for beauty. As Platt (42) summarizes from his research, "It now appears that the requirements for aesthetic enjoyment are simply the requirements for perception itself, raised to a higher degree; and the essential thing in each case is to have a pattern that contains the unexpected. This seems to be the heart of

what we call beautiful, and it is no exaggeration to say that men need it as they need food." This concept of a stimulus meeting some need is important because if flowers are relevant to an individual's needs, they will most likely be perceived and elicit a response. Besides to some degree meeting the human needs for aesthetics, pattern, change, and stimulation, flowers might also help meet the need for nature. In several studies of preferences, people consistently chose "green grass and trees around me" and other features of nature more than any other choice. It is further noted that greenery and flowers "fulfill some psychological need we have" (24, 29).

Studies have shown that color is a significant environmental stimuli (15, 19, 30). Studies have been done to measure the effects of color in many different situations. Holding cells that were painted pink in one study had a calming effect on prisoners kept for short periods of time and an aggressive effect on prisoners held for long periods of time. Bright aggravated colors are often used in fast food restaurants to encourage customer turnover. Dull nondescript colors are often used in classrooms and department stores so as not to detract from the main focus, the teacher or the merchandise. As many interiorscapers have recently discovered, green plants are nice, but more and more clients are asking for color along with their interior plantings (31, 40, 54).



Depending on the way flowers are presented, other needs could also be met. Flowers are a unique stimulus in that they generally become symbolic of the giver's emotions (sympathy, love, appreciation, friendship). By relating the flowers to a particular giver, other needs, such as affiliation, equity, and respect as an individual, may also possibly be met. Although the flowers may be presented in such a way to maximize the number of needs being met, individuals' differences in needs and need strengths will affect their perception of the stimulus. Perception may also be affected by the memories of past experiences (pleasant or unpleasant) that the flowers trigger (50).

Pleasantness is another characteristic that affects the response to a stimulus. Although novelty is a characteristic of a stimulus that increases the chances of it being perceived, the level of novelty can affect arousal and thereby affect the type of response elicited. Arousal level is often depicted as an inverted U-shaped curve where extremely and minimally novel situations are associated with avoidance behaviors and moderately novel situations are associated with approach behaviors or attitudes (30). Russell and Merabian (47) define approach behavior as opposed to avoidance behavior, to mean "increased preference, liking, evaluation, exploration, motivation at tasks, and desire to affiliate and cooperate." Russell and

Merabian (47) presented results supporting a reinterpretation of the standard inverted U-shaped curve by maintaining the inverted U-shape for neutral stimuli but utilizing pleasure as a moderator of the optimal arousal level (the top of the inverted U-shaped curve) (see Fig.2). If this model is accurate, the most pleasant and novel stimulus results in the highest possible approach responses.

Flowers are considered pleasant based on the definition of aesthetically pleasing, their characteristics as stimuli, subjective comments, and surveys (19). Since flowers are considered pleasant, the use of them in a novel way (as an unusual element in an environment), should result in the hypothesized positive approach responses. Questions about the importance and satisfaction with variety, change, colorfulness, the appearance of the physical surroundings, and being treated as an individual were included in the questionnaire to measure possible needs which the flowers might affect.

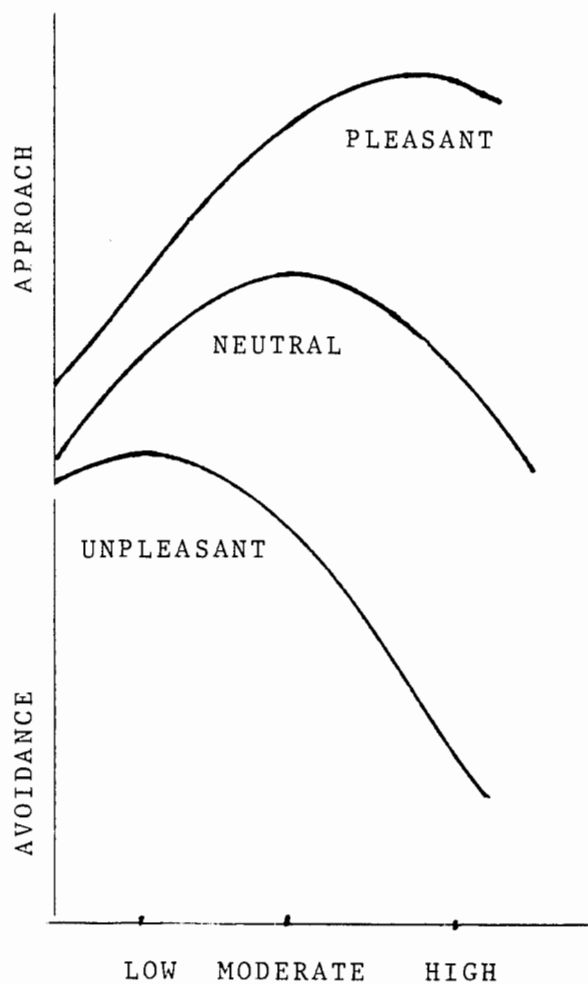


Fig. 2. Scheme of the Pleasure-Arousal Hypothesis, in which pleasure determines the optimum level of arousal.

### 2.3.2 Characteristics of the Environment

The physical and social environment plays an important role in the perception of a stimulus in that it can affect whether or not the stimulus is perceived as well as the way it is perceived. The stimulus-environment relationship can be easily identified so that an environment can be selected in which the stimulus will certainly be perceived. But the way a stimulus is perceived cannot be as easily predicted or controlled. The presence of flowers at a florist shop would not be as easily perceived (especially by employees) as the same flowers in an office or fast-food restaurant. The perception of the flowers can be influenced by choosing an environment where they will be novel and easily distinguished, but the way the flowers are perceived cannot be controlled, since it will be influenced not only by the immediate physical and social environment, but even more so by the characteristics of each individual involved. Although the characteristics of the social environment and individual were not examined as a basis for the selection of an environment, some characteristics were measured and examined post hoc such as attitudes about the supervisor, coworkers, the organization, demographics, and individual needs.

The perception of flowers in an office environment would seem to be ensured especially those offices that are devoid of interiorscaping or other aesthetically pleasing stimuli, since the flowers would be easily distinguished because of their characteristics as novel, pleasant objects.

#### 2.3.2.1 Effects of Characteristics of the Physical Environment

As Steele (50) has observed from his studies of organizations, "Most organizations have tons of drab offices." Offices can be pleasant, unpleasant, or neutral. "Many organizational settings fall into this neutral category, providing neither pleasure nor the awareness of needed change (active displeasure)." The need for aesthetic fulfillment is one which very few business environments satisfy; "thus these settings add nothing to the lives of those who use them...." Steele (50) further generalizes that if people experience pleasure in a place, they are more likely to also experience satisfaction with being there; this agrees with Merabian and Russell's (47) assertion that approach responses will be associated with pleasant situations.

This idea that approach responses (positive attitudes or behaviors) are associated with experienced pleasure in the environment has been the basic observation of studies in a

variety of fields. For example, Maslow and Mintz (34) reported that subjects remained longer in aesthetically pleasing, beautiful, comfortable surroundings than in drab, ugly, uncomfortable surroundings. Similarly, in the well-known Hawthorne studies, an important effect was uncovered even though it was not the simple lighting level/output relationship that the researchers set out to study (46). Mayo et al. failed to recognize the other environmental manipulations that were made simultaneously. As a result, worker output increased despite the light level (poor, fair, good). Some researchers have interpreted these results as indicative that any change (good or bad) will have positive results initially. However, when the simultaneous environmental manipulations are taken into account, workers' increased output and satisfaction can be seen as a result of their pleasure with the new environment. These workers were singled out from the others and relocated to their own room where they had less supervision and a layout that facilitated group interactions. This layout could have had an effect on group cohesiveness and norms which typically results in high output, as it did in this case. The increased worker satisfaction can be seen as the result of their new status, social, and physical environments.

The quality of work life movement, which supported changes in the content and environment of work that would enhance the human experience at work was popularized in the 1960's and 1970's (52). Although changes had been instituted in the workplace before, efficiency was usually the "bottom line" of concern, not the human element, as this movement emphasized. The concept of the "Burolandschaft" or office landscape, a revolutionary office design that utilized plants and work flow patterns, was developed around the same concerns as the quality of work life issues. Speaking of the effects the office landscape design had on organizations, Kurtz has concluded that, "...the systems real advantages[are]in providing a more humane work situation...an [office] environment which is less like a factory and more like a home. The benefits of this have been seen already in the psychological effects and motivations of individuals" (27).

Becker(7) reported improved morale, mood, satisfactions, and perceptions about the administration as a result of minor design modifications in a hospital. These design modifications, such as painted wall murals, used furniture, and pegboard, were minor in cost but provided aesthetic as well as some functional changes.

### 2.3.2.2 Effects of Plants in the Environment

Lewis (29) cited improved morale of workers resulting from attractive landscaping of their firm's grounds, and Kurtz (27) reported that "beautiful surroundings," the well-landscaped exterior and museum-like interior, at Connecticut General Insurance Co. headquarters produced a clear effect on employee morale.

Especially in light of vast urbanization, there have been moves to "get back to nature" as an approach to the improvement of surroundings. This move not only recognizes the necessity of nature to improve the "quality of life," but also views nature as necessary for achieving "mental well-being" (6, 48). One Notre Dame professor has said that a human being cannot reach their full potential without plants (10). Another professor, Dr. Roger Ulrich, has given an important example of plants' effect; "Executives will usually recuperate much more quickly from stress if they look at natural scenery [such as plants]..an executive who looks out on, say, a golf course, will probably perform better than one who looks out on a lot of fast-moving traffic" (17).

These ideas about plants coupled with the use of interior plants to soften the harshness of the office setting, as well as the use of plants as status symbols,



have helped promote the interior plantscaping industry to the point that now "There's not a building built today without some major thought given to plant material" (17).

#### 2.3.2.3 Effects of Flowers in the Environment

Some interiorscapers have recently diversified their product line to include flowering plants and fresh flowers in addition to their major product, green plants, partly due to frequent requests to add color to the interior plantscape. Dick Volkamer, Hawkins Greenhouse and Flower Shop, reported that the fresh flowers they had begun to supply to offices generated attitude changes, enthusiasm, and motivation. Wallace Syms, Plant Care Co., reported that the color introduced by the flowers excited people and acted as a "mood elevator" (54). As a result of a cut-flower promotion, Allan Abbott, president of Spectra Logic, reported that the employees "seemed to have different personalities and attitudes when they had a bud vase with flowers on their desks" (3).

A survey of nurses reported an overwhelming agreement that plants and flowers have a positive effect in encouraging and inspiring patients. As one nurse noted, "They are a symbol that someone cares and provide a boost in morale" (36).

A pioneer study in the field of human-plant interaction was conducted by Dr. John Talbott (51) at the Dunlap-Manhattan Psychiatric Center. Through the use of flowering chrysanthemum plants as centerpieces on the dining tables of mental patients he was able to measure significant changes in the behavior of the patients and also reported improved attitude, morale, and positive feelings on the part of the staff. These findings are especially important since the behavior of mental patients is very hard to change. The effects of the chrysanthemums on the staff's morale is also significant because the morale of the staff will directly affect patient care. Although flowering chrysanthemums were chosen chiefly because of their availability, Talbott acknowledges the important effect caused by color and the differing effect which color and variety of plant material may have.

Although there has been research on the effect of interior environments on peoples' behaviors and attitudes, very little rigorous research has been done on the effect of flowers/plants in the interior environment. The psychological research about plants which has been conducted has concentrated on preferences, outdoor landscapes, and therapeutic effects. The majority of even these studies did not employ rigorous experimental designs, but relied mostly on survey instruments. Surveys are

adequate to gather information about a population but they do not generate substantial information to infer causality. Since florists and interiorscapers are seeking to sell flowers to businesses, and since businesses are concerned about the resultant benefits of money spent to meet individual needs, it is necessary to determine the causal effect flowers might have on employees. We would expect that flowers, as a pleasant stimulus in an office environment would be perceived and should result in positive, approach responses. However, although it seems reasonable to assume that flowers in an office would be perceived, the manner of their perception will depend on the characteristics of the individuals.

### 2.3.3 Characteristics of Individuals

No two human beings are alike. Each has a different combination of past experiences, salient needs, attitudes, motivations, and other physical, emotional, and psychological characteristics. The combination present in an individual at any given time will influence the way he/she perceives a stimulus. This fact discloses the impossibility of controlling for all individual differences and the error of making broad generalizations about a group of subjects without concern for individual differences.

Individual differences must be a major consideration in studies involving human subjects. Because random selection from the entire population is a practical impossibility, a "target population" is generally identified as the population to which the experimenter generalizes (18). The target population is chosen, in true and quasi-experimental designs, on the basis of certain characteristics which seem relevant to the study. For example, an experimenter studying the effects of exercise on reducing stress might choose chief executive officers as his target population, since they often suffer from stress.

In a true experimental design, subjects are randomly selected from the target population and randomly assigned to the control or experimental group. To account for individual differences, subjects can be matched on some individual difference such as stress level, I.Q., height, locus of control, or need strength, before being assigned to a treatment group.

However, when a quasi-experimental design is chosen, random selection, assignment, and matching are not feasible alternatives. Because intact groups are chosen from the target population as the treatment groups, measured individual differences cannot be used as criteria for the assignment to groups. But if individual differences are

measured, they can be used to identify the composition of the intact groups and can be examined post hoc for possible moderating effects. This approach of measurement was used in combination with selection of a target population as a means of handling individual differences.

#### 2.3.3.1 Selection of a Target Population

Since an office was chosen as the environment for the study, the target population had to consist of office employees. One practical consideration in selecting the type of office employees was to find a population in which individuals were employed at similar tasks within the office.

Another consideration was the differing degree to which the individuals derive satisfaction and motivation from intrinsic and extrinsic rewards. After experimentation with office landscaping at the New York Port Authority building, it was noted that the physical environment "may provide some degree of satisfaction for extrinsically motivated clerical workers," but not for intrinsically motivated professionals (1). Clerical workers were chosen as the target population, since they usually constitute a large percentage of the employees in an office and because they have often been reported to derive satisfaction extrinsically more often than other types of workers, especially managerial types (1, 14, 25).

#### 2.3.3.2 Measurement of Individual Differences

Since no previous research could be used as a model for determining which individual differences might moderate the effects of the flowers, an array of questions was included in the questionnaire to measure demographics, need strengths, and work centrality. Question categories were included that were considered to be possible relevant moderators.

## Chapter III

### PROCEDURES

#### 3.1 DESIGN OF THE STUDY

Since the purpose of the study was to measure the effectiveness of flowers as a change element in the office environment, subjects had to be contained in intact groups and could not be randomly selected. This eliminated the possibility of using a true experimental design, so a quasi-experimental design was chosen. The quasi-experimental design had an advantage over the true experimental in decreasing subject reactivity; subjects in intact groups are less aware of the purposes of a study than those who have been assigned to a treatment. This suppression of purposes was crucial in this study; if subjects were aware of the purpose, they would most likely change their attitude accordingly.

A Pretest-Posttest Nonequivalent Control Group Design was utilized, since it allows for more control over threats to internal validity, timing of treatment, and selection of subjects to receive the treatment (18). The treatment was fresh flower arrangements delivered for each subject in the

experimental group every Monday morning for 3 consecutive weeks. A 67-question, 5-point, scaled questionnaire was administered as both the pretest and posttest. Table 1 outlines the design of the study and the order of occurrence of procedures during the 7 weeks of the study. Further details of the study design will be discussed in the following section.



Table 1. Study Design.

	WEEK NUMBER IN THE EXPERIMENT	DEPT. 2 EXPERIMENTAL GROUP	DEPT. 2 CONTROL GROUP	DEPT. 1 CONTROL GROUP
Memo about the survey	1	X <sup>2</sup>	X	
Pretest	2	X	X	X
Memo about the flowers	3	X	X	
Flowers	4, 5, 6	X, X, X		
Posttest	6	X	X	X
Debriefing	7	X	X	X

<sup>2</sup>X indicates the group(s) which received the particular procedures.

### 3.2 DETERMINATION OF THE SITE AND THE EXPERIMENTAL SET-UP

Although the quasi-experimental design utilizes nonequivalent groups, the researcher is expected to "attempt to have the experimental and control groups as similar as possible" (18). Certain criteria were identified so that comparable office sites could be selected. Two offices were sought that would be similar in (1) economic situation, (2) job duties, (3) company policies, (4) physical surroundings, (5) number of employees, (6) distribution of males and females, and (7) amount of interaction with clients, yet be physically isolated from each other and be located in the Columbus vicinity. After approximately four months of searching for an organization with this type of situation that would willingly cooperate, the decision was made to utilize an organization whose situation closely (but not exactly) approximated the ideal.

The organizational criteria for similarity were met, but the situation involved two departments of an organization located on different floors in the same building. This compromise situation raised the problem of possible interaction effects and forced some compromise of our basic assumptions. Both departments, 1(the control) and 2(the

experimental group), were divided between different floors of the over 14-floor building. Department 1 was a support service department where there was very little interaction with clients. Most of the employees in this department were engaged in data processing and telephone jobs. Department 2 was also mainly a support service department but more employees were involved in clerical work where client interaction was more frequent than in Department 1.

All employees included in the study were Civil Service workers in the clerical or data processing fields. The control group consisted of 38 employees from Department 1 who were asked to participate. The director of Department 2 wished to have all employees in his department fill out the questionnaire, but all the employees did not fit the selected job descriptions. Two of the four offices in Department 2 dealt more with clients, and it was felt this might influence the effect of the flowers if they became a conversation piece or affected the clients' behavior, so these floors were used as a second control group. The remaining two floors were used as the experimental group, since they were more comparable to the control group. Those employees who filled out the questionnaire but who were non-Civil Service workers were not used as subjects in the analysis.

The second control group served as a comparison group that was under the same director as the experimental group. However, this also created the question of inequality: the reason the experimental offices in the department were receiving flowers and the other two were not. This question was addressed by sending a memo about the flowers a week before they arrived to all employees of Department 2. In the memo, the employees were told that the number of flowers available was limited and therefore only certain offices would be given the flowers during different weeks (see Appendix B). Flowers were distributed to the second control group after the experiment was over in order to substantiate the claims in this memo. In addition to this memo, the director of Department 2 also sent a memo to his assistants and managers about the questionnaire in order to enlist their cooperation in informing the staff and to identify the questionnaire as being from the College of Administrative Science, to further obscure the connection between the flowers and the questionnaire (see Appendix A).

Ideally, flowers would be perceived as a gift from management. This idea was conveyed in the original memo which was written (see Appendix C). But because of the economic situation of the organization used, the management did not feel they could feasibly lead the employees to believe the flowers were paid for at all from within the

organization. Thus, as seen in the flower memo, employees were told that the flowers were left over from the floral design class at O. S. U. and the director discovered they could be obtained for the office. This information, as well as care instructions for the flowers, was distributed in the flower memo (see Appendix B).

Permission to conduct the study and to waive the rule requiring written agreement from subjects was granted by the Human Subjects Review Committee of O. S. U. The approval number was 83B0061.

### 3.3 DESIGN OF THE QUESTIONNAIRE

#### 3.3.1 Selection of Content Categories

The content for the questionnaire was chosen on the basis of the theoretical framework and hypotheses of the study. Questions were carefully selected so that the content would not reveal the connection between the flowers and the questionnaire. There were three basic categories of questions included in the questionnaire: individual differences, needs, and attitudes. Definitions of the topics in these three categories are shown in Table 2.

Individual difference questions served three purposes: (1) to provide information from which possible moderating effects could be examined, (2) to identify the population

Table 2. Definitions of Dimensions.

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INDIVIDUAL DIFFERENCES

1. Demographics: Age, sex, race, marital status, years employed, education level, size of community raised in, percent of income contribution to total family income.

2. Importance of Work in Total Life: How important is your work in your whole life? Does it have a major effect on your life or your happiness?

NEEDS

1. Importance of Being Treated as an Individual: Whether you need to be treated as an individual or whether it does not matter if you are treated as a number or a worker instead.

2. Satisfaction with the Way I'm Being Treated as an Individual: In the current situation at work are you being treated as an individual by your supervisor, coworkers, and the organizations, or impersonally, as a worker or number?

3. Importance of the Physical Surroundings: Does it matter what your work surroundings look like?

4. Satisfaction with the Physical Surroundings: How satisfied are you with the appearance of your work surroundings?

5. Importance of Variety and Change: Does it matter if there is variety and change at work?

6. Satisfaction with the Amount of Variety and Change: How satisfied are you with the present amount of variety and change at work?

## ATTITUDES

1. About Your Supervisor: Is your general attitude positive or negative with regard to his competence, friendliness, considerateness, and equitable treatment?

2. About the Organization: Is your general attitude positive or negative with regard to their competence, fairness, and considerateness?

3. About Your Coworkers: Is your general attitude positive or negative with regard to their friendliness, respectability, competence, and considerateness?

4. Job Security: How secure is your job and how satisfied are you with the amount of job security you have?

5. Equity: Do you feel you are treated equally by your supervisor, coworkers, and the organization? (This category was included under the separate attitude categories 1 and 2.)

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of subjects, and also (3) to provide a well-accepted questionnaire format in which the more essential questions were embedded.

Questions about needs were divided into importance and satisfaction questions. This was based on the theory that if a "need" is not important to an individual, then his or her satisfaction with it is irrelevant (32, 33). Importance questions were used to identify individual differences in need level. Satisfaction questions, in combination with the importance questions, were used to measure any changes in satisfaction of the needs which were

measured. On the basis of the assumption that the flowers would have the most direct impact on the physical environment, questions were included concerning the importance and satisfaction with the appearance of the physical setting and the amount of change and variety. And, on the basis of the idea that the flowers would be perceived as coming from the supervisor, management, or organization, it was postulated that the flowers might affect employees' satisfaction with being treated as an individual. A survey published in the Washington Post found that employees rated "recognition as an individual" of primary importance in being satisfied with a job (2).

Since no previous research was found to indicate which employee attitudes might be affected by the presence of flowers in the office, a number of different attitudes were measured. It seemed reasonable to assume that the flowers might cause an overall increase in positive affect which, depending on individuals' perceptions, might be evidenced in a number of different attitude changes; this resulted in the inclusion of attitude questions concerning the supervisor, coworkers, and the organization as a whole. It was also postulated that the flowers might meet different individual needs: thus, the effects would be measured in increased satisfaction.



On the basis of the observation that people tend to view flowers as a luxury item, it was postulated that employees might conclude that their organization was financially secure, if it was spending money on flowers. Although this seemed like a remote possibility, questions on job security were included, nonetheless, primarily to help give the questionnaire a more typical "job attitude" appearance.

Since flowers were to be given to all employees in the office, questions were included to measure changes in perceived equitable treatment.

### 3.3.2 Selection of Specific Questions

Once the categories for the questionnaire were defined, the next step was to find 3-5 questions per category which would actually measure the dimension. Previous questionnaires were examined to discover possible questions or units of questions which may have already been used to measure these dimensions and had established reliability and validity data. Unfortunately, no full units of questions with good reliability and validity data established were found that measured these dimensions. Thus, nine questionnaire sources (8, 11, 12, 21, 26, 38 39, 44, 55) were used for the idea and basis of single questions and additional questions were generated so that there was a pool of 6-15 questions (2-3 times the number needed) per dimension.

All questions were reworded and revised so that they were all statements rather than questions and so that, when applicable, all were in the first person and present tense. Generated questions were also in this format.

A three-stage Q-sort process, which is also known as a conceptual factor analysis, was conducted on these questions. The Q-sort process, although not statistical, is a means of separating questions into those which group together as a unit and those which may be interpreted differently than expected. Each of the 140 total questions was typed on five individual white 3 X 5 in. index cards so that five complete sets of 140 cards containing 1 question per card were compiled. Each set of cards was thoroughly shuffled so that the questions were in random order. Fifteen different individuals (secretaries, graduate students, technicians, professors, and other professionals) from the Horticulture Department were utilized as sorters for the process. None of the sorters had previous experience in this task. For each stage of the Q-sort process an instruction sheet, pencil, and set of 140 cards were placed in a manilla envelope and distributed to five sorters. A total of 15 individuals acted as sorters for either the stage I, II, or III Q-sort process. Sorters were asked to return the completed package to the researcher after 2-3 days. Instructions were modified at each stage of the process (see Appendix D, E, and F).

Stage I: Sorters were asked to sort the cards by topic, grouping similar statements together and then labeling each group of cards with a topic name they felt was appropriate for that set of statements. All 140 questions were written by category along the vertical axis of a long sheet of paper. After the stage I Q-sort process was completed, the five sorters' category names were placed along the horizontal axis at the top of the sheet of paper. The results were then plotted by question and by sorters' categories. It was thus easy to pick out questions that were not being sorted into the expected categories. Questions which were not sorted closely three out of five times were discarded before the stage II process. (Sorters created 10, 9, 7, 16, and 10 categories, respectively.)

Stage II: Sorters were given the same instructions as the stage I sorters except they were asked to use no more than 11 categories. Results were again plotted by sorters' categories and questions that did not group closely four out of five times were discarded. (Sorters created 8, 9, 9, 9, and 3 categories, respectively.) One sorter separated all the questions into three categories on the basis of whether they were worded positively, negatively, or neutrally despite the warning against doing this in the instructions.

Stage III: Sorters were given 132 statements and 11 topic categories on index cards. The same instructions were given except that they were given the topic headings and asked to sort the cards into those categories. The note about categories containing negative and positive statements was made more specific. The results were plotted with the given topic heading on the horizontal line and the results for sorters one through five for that topic grouped together. This gave a very clear picture of which questions were not being grouped in the expected categories. Questions that were not grouped four out of five times in the expected categories were discarded. Most of the questions grouped five out of five times in the expected categories. Only 7 of the 59 questions used for the final questionnaire were rated less than unanimously (four out of five times). Since there were more good questions than were needed for the questionnaire, questions were chosen on the basis of how good they sorted during stage I and stage II of the Q-sort process, so that there were an approximately even number of positively and negatively worded questions within each category and so the questions within the category did not sound too repetitious. The eight demographic questions that were revised from the Michigan Organizational Assessment Questionnaire (MOAQ) were not included in the Q-sort process.

### 3.3.3 Construction of the Questionnaire

The overall instructions and page instructions were taken or modeled from the MOAQ. On the basis of previous research and recommendations, a five-point scale was considered sufficient for this questionnaire. Although the scale descriptions appear on each page there is no place marked for an answer because the questionnaire was designed to be used with a separate five-choice marked-sense answer sheet. From the Q-sort process it was discovered that the subcategories in the category concerning satisfaction with being treated as an individual were being grouped under the general attitude to the supervisor, coworkers, and organization categories, so they were categorized that way in the final questionnaire. Likewise, the category labeled "equity" was sorted between the general attitude about the supervisor and attitude about the organization categories on the basis of the wording of the questions. So questions about equity were treated as subcategories of the two relevant general attitude categories on the final questionnaire.

Because the importance of variety, change, and physical surroundings categories used the same scale descriptions, these were mixed together on the same page. The same procedure was done for the satisfaction questions in these categories. Since the importance and satisfaction

questions were essentially the identical questions with different scale descriptions, they were maximally separated within the questionnaire; the importance questions were asked first after the demographics, and the satisfaction questions were asked at the end of the questionnaire. Following the first page of importance questions, statements on the importance of being treated as an individual (on an agree/disagree scale) and then questions about the importance of work in total life and job security were placed. These were followed by attitude questions about the supervisor, coworkers, and the organization (including general statements about being treated as an individual). The last page contained the satisfaction questions listed identically to the importance questions at the beginning. The questionnaire was 10 pages long and contained 67 questions (see Appendix I).

#### 3.3.4 Distribution and Coding

A list of subjects to be involved in the study was obtained from the department directors who had previously agreed to participate. A removable label was typed with each individual's name. These were then placed on 9 X 12 in. manilla envelopes. The list of subjects was coded with date codes, one code per individual. These codes were then stamped on the top left corner of two sets of marked sense

answer sheets with invisible ink and checked under an ultraviolet lamp for clarity. One set of coded answer sheets was matched with the labeled envelopes. The matched answer sheet, a questionnaire, a number two "Ohio State" pencil, and a cover letter were placed in each envelope. The cover letter requested the individual to answer all the questions frankly and honestly, informed the subjects that all information would be confidential, encouraged their cooperation, and stated the nature of the study as an attitude study being conducted by the Department of Business Administration of O. S. U. (see Appendix G and H).

The questionnaire packages were delivered in bulk to the offices by a technician. They were distributed to individuals by their office personnel. Subjects were told in the cover letter to remove their name label and return the completed questionnaire to a central drop box located with the department secretary. The technician went the following day to pick up the drop box.

Completed questionnaires were removed from the envelopes, codes were read under the ultraviolet lamp and marked with visible pencil as a code on the answer sheet, and then a blank answer sheet with the same invisible code was replaced in the envelope. The individual's name label

was replaced on the envelope containing the answer sheet with their code number and a slightly different cover letter was placed in the envelope (see Appendix G and H for the first and second cover letters). This process went quickly and saved envelopes and questionnaires. However, this meant that the identical questionnaire went back to each subject. As a result, some subjects recognized marks they had made and became suspicious of whether their responses were anonymous. This contributed to a lowered response rate for the posttest.

Completed posttest questionnaires were coded in the same manner as the pretest. A code was added to each answer sheet to identify it as a pretest or posttest, and another code was added to identify it as being from the experimental group, Department 1 control group, or Department 2 control group. All marked sense answer sheets were then scanned and recorded on a tape. This tape was then copied onto a computer disk so that missing data could be handled by the statistical package (SAS and SPSS).



### 3.4 DESIGN OF THE FLOWER MANIPULATION

#### 3.4.1 Selection of Form

The type of flower arrangement chosen as the manipulation had to meet these basic criteria: large enough to be perceived, small enough to be nonintrusive, easily removed from the container, attractive but not exotic, and easily duplicated en masse.

A simple round-shaped centerpiece arrangement was chosen because of its wide acceptance by consumers and ease of duplication. A widely available 5.5 in. tall, round glass container with a snap-on designing cage lid was used. The cage lid allowed designs to be made without the use of floral foam, thus making it easier for subjects to remove the flowers from the design. Subjects were encouraged to remove and take the flowers home on Fridays while leaving the container in the office so it could be picked up and refilled for Monday.

The size of the arrangements were about 12 in. tall and 8-10 in. wide, which was considered a medium-sized arrangement. The decision to use the medium-sized arrangement was made on the basis of the assumption that a smaller arrangement may not be perceived as readily or as often. The medium-sized arrangement was such that it did not demand an excess of room on the desk but was too large to be overlooked.

Rules of perception indicate that "any characteristics which make the object or event stand out from others enhance the probability that it will be perceived" (45). This includes intensity, frequency, number, movement, change, contrast, or unusualness. Thus the size, unusualness of fresh flowers in an office, and the change each week added to the probability of the flowers being perceived.

#### 3.4.2 Selection of Content

The flowers used in the arrangement were basically the standard flowers used in most commercial floral arrangements, with the addition of one more unusual flowers being used during each of the 3 weeks. The basic arrangement consisted of miniature carnations, pompon chrysanthemums, baby's breath, tree fern, and statice. Iris, alstromeria, and roses were the unusual flowers used, respectively, during the first, second, and third week.

In recognition of the importance of color one basic color scheme was adhered to each week so that the arrangements within a week were very similar but differed from week to week. Table 3 contains the list of types and colors of flowers used each week.

Table 3. List of Types and Colors of Flowers Used.

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WEEK 1

1. Iris: Purple
2. Baby's Breath: White
3. Daisy pompons: White, yellow, pink
4. Statice: Purple
5. Miniature Carnations: Red, dark pink, pink
6. Tree Fern: Green

WEEK 2

1. Alstromeria: Yellow, orange
2. Baby's Breath: White
3. Cushion pompons: Yellow, rust, orange
4. Statice: White, yellow, peach
5. Miniature Carnations: Peach, yellow, tangelo
6. Tree Fern: Green

WEEK 3

1. Sweetheart Roses: Yellow, pink, lavender
  2. Spider pompons: Yellow, white, lavender
  3. Statice: Yellow, lavender, pink
  4. Miniature Carnations: Corona (yellow with pink tips)
  5. Tree Fern: Green
-

Flowers were also selected on the basis of keeping quality. The standards of the industry, pompons, carnations, and statice, have become so widely used because of their availability, versatility, and value on the basis of keeping quality. Irises were bought very tight and allowed to open in the arrangements, thus prolonging their display life. Alstromeria were bought fresh from Holland and had a display life of approximately two weeks. Roses were bought from a local grower and placed in the arrangements after they were completed, but they still did not last the entire week. Tree fern provided an airy effect without the leaflet drop problem experienced with the more commonly used asparagus plumosa fern.

To allow for adequate designing time and optimal display life, the fresh materials were carefully handled by using Chain-of-Life criteria. In preparation for the experiment the floral refrigerator was completely emptied and the walls and floors were washed with a bleach disinfectant solution. All plastic containers to be used were also scrubbed with a bleach solution before and two weeks after the experiment began. A new ethylene filter was placed in the refrigerator, and no other materials were stored in the refrigerator during the experiment so that ethylene levels could be kept as low as possible.

Flowers were received on the Thursday before the week they were to be delivered (flowers were delivered on Monday mornings). Upon delivery to the O. S. U. greenhouses, the flowers were unpacked and then recut with an underwater flower cutter, using distilled water. Flowers were placed in plastic buckets containing a solution of preservative dissolved in distilled water. They were stored in a floral refrigerator that was kept between 32-38°F. Flowers were allowed to harden for at least 6 hours before being used.

#### 3.4.3 Construction of the Arrangements

A production line process was used in the construction of the arrangements to allow for the most uniformity of design and efficiency of labor. The 46 arrangements were constructed in two groups of 23. Vases were completely filled with a solution of distilled water and preservative and then capped with their cage type lids. One material at a time was removed from the cooler and arranged in all 23 vases. Miniature carnations or pompons were usually placed first to establish the basic shape of the arrangements, then the statice, greens, baby's breath, and finally the more expensive unusual flowers for the week. The completed arrangements were then placed in the floral refrigerator. The process was then repeated with the second set of 23 vases. The arrangements were usually completed Saturday

evening and remained in the cooler until Monday morning when they were delivered between 6 and 7:00 a.m.

#### 3.4.4 Distribution

Partitioned boxes were used to keep the arrangements stable during delivery. These were constructed by using the partitions from the cases that the vases arrived in. Since the cases contained two rows of partitions, one row was removed and then the sides of the case were cut down to the height of the first row to render them useful as carrying cases. The extra partitions were then placed in a shallow flower shipping box which was reinforced with extra cardboard.

Arrangements were delivered to the offices on Monday mornings by students. The employees were allowed to select their own arrangements when they arrived for the day, except during the second week when the students placed the arrangements on each individual's desk. The empty vases were collected on Friday afternoon around 5:00 p.m. These were then returned to the greenhouse and washed with a bleach solution before being reused.

### 3.5 DEBRIEFING OF SUBJECTS

During the week following the experiment's completion, all subjects were debriefed as to the actual purpose of and their participation in the study. Debriefing techniques used in the two departments differed due to situational constraints.

Department 1, the control group, was under severe time constraints at the time of debriefing, so a letter was constructed that explained the study and thanked the subjects for their participation (see Appendix J). Subjects were asked to send their name if they wished to receive a copy of the results. A single long-stem rose was prepared with greens and baby's breath for each subject and was distributed, as a sign of appreciation, along with the letter through the department secretary.

In Department 2, an informal meeting of all employees was arranged at 8:30 a.m. in which the researcher briefly explained the purpose of the study and the role of the employees involved in it. Following this group meeting, subjects were then interviewed in small groups (of 10-30 people) in a separate conference room. Five groups of subjects were interviewed every 30 min between 9:00 and 11:30. Groups of subjects were divided on the basis of floors so that most interview groups were comprised of all

experimental subjects or all Department 2 control group subjects. Subjects were informed of their assigned interview time by the management. Interviews were conducted in an informal question and discussion format and recorded on a cassette tape if there were no objections. A sheet of paper was passed around during the session and subjects were asked to sign it if they wished to receive a copy of the results of the study.

### 3.6 ANALYSIS OF DATA

#### 3.6.1 Reliability of Scales

To determine the reliability of the scales used, a Cronbach's alpha reliability test was conducted by using the pretest questionnaires. Posttest questionnaires were eliminated due to the confounding effects that the manipulation may have caused. Interitem correlations were utilized to determine the alpha level if an item were deleted from the dimension. If the alpha level would be raised without an item, that item was deleted. These revised dimensions were used in further analyses.

To confirm the existence of the dimensions that were created through the Q-sort process, a factor analysis was conducted on the pretest questionnaires. A principle components varimax rotated factor analysis with nine factors was performed. A conservative cutoff point of a



|0.55| factor loading was used in identifying items to be included in the factor. This conservative cutoff was used to help control for spurious results which can occur especially with a small sample size as in this study.

### 3.6.2 Preparation of Data for Analysis

A very negative response to a negatively worded question expresses the same sentiment as a very positive response to a parallel question that is worded positively. With this assumption, responses to negatively worded questions were recoded to reflect the response if the question had been worded positively. This eased the calculation and interpretation of dimension scores.

A total score for each revised dimension was derived for each individual for both the pretest and posttest. The average dimension score was derived by adding the scores of all the responses to the questions comprising the dimension and then dividing by the number of questions to which a response was made.

Since a nonequivalent control group was used in this study the analyses were performed on mean gain scores. This is the recommended procedure (18) for accounting for initial variability between the experimental and control groups. Mean gain scores for individuals were derived by

subtracting their average dimension score for the pretest from their average dimension score for the posttest for each dimension. An average mean gain score for each dimension was then derived for the experimental and two control groups. This was obtained by averaging the mean gain scores of individuals within the group on each dimension.

Missing data can create problems in many different ways. In cases where scattered bits of information were missing for a subject, the procedure for deriving a dimension score accounted for this by taking an average of only the responses which were present. Subjects who had missing data for an entire dimension were eliminated because the SAS program would not accept cases with missing values. When an entire pretest or posttest was missing for a subject, that subject was eliminated from the analyses, because the derivation of mean gain scores requires both a pretest and posttest.

### 3.6.3 Analysis of Effects

A multivariate analysis of variance (MANOVA) was the primary statistical test used. This procedure was used to test the hypotheses of no significant difference between groups on average mean gain scores over all the dimensions. Duncan's multiple range test and separate ANOVA's were used

to test the hypothesis of no significant difference between groups on average mean gain scores for one dimension at a time. These tests were also used to analyze possible moderating effects due to individual differences.

Chapter IV  
RESULTS AND DISCUSSION

4.1 RESPONSE RATES TO THE QUESTIONNAIRE

A total of 123 subjects were sent questionnaires. Of these, 39 subjects were eliminated before the analyses were conducted. Some subjects were eliminated because of nonresponse to the pretest or posttest. Response rates for the pretest differed between departments (see Table 4). The higher pretest response rate in Department 2 was a consequence of the department director sending a memo the week before the questionnaire was distributed informing and encouraging participation in the study.

A difference in response rates for the posttest was also encountered. A total of 13 subjects were eliminated because they responded to the pretest but not the posttest; the majority of subjects eliminated for this reason were in the experimental group. Some of the drop in response rate at the posttest (from 88% to 77%) was probably due to reluctance to fill out the same questionnaire a second time. But the greater drop in response rate for the experimental group was probably a result of distrust.

Table 4. Response Rates of Subjects to the Questionnaire.

	DEPT. 2 EXPERIMENTAL GROUP	DEPT. 2 CONTROL GROUP	DEPT. 1 CONTROL GROUP	TOTAL
Number asked to participate	46	39	38	123
Number of pretest responses	41	38	29	108
Percent of pretest responses	89	97	76	88
Number of posttest responses	33	35	27	95
Percent of posttest responses	73	90	71	77
Number deleted due to missing data	0	1	1	2
Number deleted due to nonCivil Service classification	4	5	0	9
Final number used in analyses	29	29	26	84
Final percent used in analyses	63	74	68	68

During the interviews a subject from the experimental group mentioned that suspicions has arisen about the anonymity of the questionnaire because some subjects had recognized marks they had made on the pretest questionnaire when it was returned as the posttest questionnaire.

In Department 2 all employees were asked to participate, but as previously noted only Civil Service workers were included in the analyses, so four respondents in the experimental group and five in the Department 2 control group were eliminated for this reason. Two subjects were eliminated because their answer sheets contained missing data that could not be estimated for statistical purposes.

The final analyses were conducted on a total of 84 subjects; 68% of the number which were actually asked to participate, and 74% of those which were originally intended for inclusion.

#### 4.2 IDENTIFICATION OF SAMPLE

Of the eight demographic questions, certain characteristics were found more frequently than others. The sample consisted primarily of single (60%), white (77%) females (82%), who had been employed at their present job for two or more years (60%). Of these, 48% had been at their job for four or more years. The second major group had been on the job less than one year (27%).

The majority of individuals responded that they had had between 1 to 3 years of college or technical school (46%), with 27% responding that they had a high school degree or less and 27% responding that they had a college degree or more. The majority of subjects were less than 30 years old (48%), 27% were between 31-40 and 25% were 41 or older. Most of the subjects were raised in a large (47%) or small (21%) city, with only 32% having been raised in rural or suburban locales. When asked what percentage of their income contributed to the total family income, 47% responded that it was the only source for themselves or their family, 46% indicated that it was not the only source.

Thus, the major demographic characteristics of the sample could be described as single, white females, employed at their job for more than two years, with 1-3 years of post high school education, younger than 30 years old, raised in a city, and dependent on their salary as the sole or major source of income.

#### 4.3 RELIABILITY OF SCALES

Results of Cronbach's alpha reliability test yielded alpha levels from 0.50 to 0.94 for the original 11 dimensions (see Table 5). These reliabilities were of an acceptable level of magnitude but were still raised, when possible, by deleting "poor" items that were identified by the interitem correlations. Five dimensions were revised by eliminating one "poor" question per dimension. By using the revised dimensions, the alpha levels of dimensions used for the analyses ranged from 0.60 to 0.94. Table 5 shows the number of questions comprising each dimension, the alpha levels for the original and revised dimensions, and the number of the questions that were eliminated.

When the eliminated questions are read, they seem to be asking the same thing as the other questions in the dimension, but they tend to be ambiguous when one tries to answer the question. For example, question 10 asks "How important is the routineness at work?" This seems to be asking about the importance of change and variety. But when it was answered, routineness could have been interpreted as something good or bad. On the basis of the difference in alpha levels when this question was eliminated, it certainly can be defined as a "poor" question. Notice, however, that the question "How satisfied are you with the routineness at work?" was retained in the satisfaction with



change and variety dimension that had an alpha of 0.94. Obviously, subjects found it easier to consistently express the degree of satisfaction than the degree of importance that something held for them.

The strong evidence that was found supporting the existence of the dimensions was an expected result of the rigorous procedures employed in the creation of the dimensions. Since reliabilities of the dimensions were of an acceptable level of magnitude, further analyses of results based on these dimensions can be accepted with a good deal of confidence.

Results of the principle components factor analysis, using a conservative |0.55| cutoff point, confirmed the independent existence of 9 of the 11 a priori dimensions. The factor analysis was conducted on the pretest questionnaires of the 84 subjects used in the other analyses.

Factor loadings ranged from |0.56| to |0.86| (see Table 6). The dimension of satisfaction with being treated as an individual loaded on the same factor (factor 1) as the dimension of attitude about the organization. These two dimensions were presented as a single unit as part VII of the questionnaire. The other dimension that was not supported as an independent factor was the dimension of the

Table 5. Reliability of Questionnaire Dimensions based on Cronbach's alpha.

DIMENSION LABELS	ALPHA FOR ORIGINAL DIMENSIONS	# OF QUESTIONS IN THE DIMENSION	ALPHA FOR REVISED DIMENSIONS	# OF QUESTIONS IN THE DIMENSION
IMPORTANCE OF THE PHYSICAL SETTING	0.92	5	0.92	5
IMPORTANCE OF CHANGE AND VARIETY	0.57	4	0.72	3
IMPORTANCE OF BEING TREATED AS AN INDIVIDUAL	0.50	5	0.60	4
IMPORTANCE OF WORK TO LIFE	0.67	5	0.73	4
SATISFACTION WITH THE PHYSICAL SETTING	0.94	5	0.94	5
SATISFACTION WITH CHANGE AND VARIETY	0.94	4	0.94	4
SATISFACTION WITH BEING TREATED AS AN INDIVIDUAL	0.84	4	0.89	3

Table 5 (continued).

DIMENSION LABELS	ALPHA FOR ORIGINAL DIMENSIONS	# OF QUESTIONS IN THE DIMENSION	ALPHA FOR REVISED DIMENSION	# OF QUESTIONS IN THE DIMENSION
ATTITUDE ABOUT THE ORGANIZATION	0.90	8	0.90	8
ATTITUDE ABOUT COWORKERS	0.80	8	0.83	7
ATTITUDE ABOUT THE SUPERVISOR	0.91	8	0.91	8
JOB SECURITY	0.79	3	0.79	3

importance of change and variety. The questions in this dimension did not load on any of the 9 factors, but if the cutoff point had been lower ( $|0.33|$ ), all of these questions would have loaded on the same factor as the dimension of the importance of the physical setting. These two dimensions were presented on one page as part II of the questionnaire.

Only those questions that were considered a priori for inclusion in a dimension loaded on the factor defined as that dimension. There were no unexpected question loadings. All but three questions that were included in the revised dimensions (see Table 5) loaded on their respective factors for those dimensions. The factor analysis confirmed the revision, which was done on the basis of Cronbach's alpha reliability test. However, on the basis of the factor loadings, the factor analysis would support the additional revision of the following three dimensions by the removal of one additional question per dimension: attitude about the organization (q47), attitude about coworkers (q33), and the importance of being treated as an individual (q22). However, removal of these questions from their dimensions would have raised the reliability of the dimension by a maximum alpha level of only 0.01. Therefore, no further revisions were made.

Table 6. Factor Loadings of Questions and Dimension Labels Identifying the 9 Factors.

Attitude about Org./ Sat. being treated as an Indiv.	FACTOR																	
	1		2		3		4		5		6		7		8		9	
	Q.	L.	Q.	L.	Q.	L.	Q.	L.	Q.	L.	Q.	L.	Q.	L.	Q.	L.	Q.	L.
48	0.67	39	0.70	9	0.84	59	0.80	31	0.74	60	0.72	23	0.73	26	0.57	18	0.68	
49	0.72	40	0.56	11	0.79	61	0.86	32	0.70	62	0.83	25	0.85	27	0.68	19	0.70	
50	0.79	41	0.80	13	0.74	63	0.82	34	0.72	64	0.80	30	0.72	28	0.74	21	0.71	
51	0.76	42	0.77	15	0.83	65	0.85	36	0.58	66	0.74	29	0.81	29	0.81			
52	0.64	43	0.76	17	0.83	67	0.76	37	0.70									
53	0.80	44	0.69					38	0.64									
54	0.70	45	0.84															
55	0.81	46	0.60															
57	0.69																	
58	0.70																	

Q. is the number identifying the question in the questionnaire.

L. is the factor loading for the question derived from a Principle Components Varimax Rotated Factor Analysis.

Although the factor analysis did support the existence of the a priori dimensions, it must be considered weak support due to the small question number to subject number ratio (59/84).

#### 4.4 ANALYSIS OF OVERALL EFFECTS

On the basis of Wilk's criterion, the MANOVA test for the hypothesis of no overall group effect on all 11 dimensions resulted in no significant difference ( $F=0.80$ ,  $df=2/81$ ,  $p < 0.72$ ). This clearly indicates that no significant difference between groups was measured for the 11 dimensions. Further analyses, separate ANOVA's (see Table 7) and Duncan's Multiple Range Tests for each dimension (at an alpha of 0.10), emphasized the result that no significant differences between groups were measured on any of the 11 dimensions.

Table 7. Analysis of Variance between groups for the mean gain scores on 11 dimensions.

Dimension Label	DF <sup>z</sup>	F value	Prob > F
Importance of the Physical Setting		0.17	0.84
Importance of Change and Variety		0.39	0.68
Importance of Being Treated as an Individual		0.10	0.90
Job Security		1.76	0.18
Importance of Work in Total Life		0.68	0.51
Attitude about Coworkers		0.66	0.52
Attitude about the Supervisor		0.42	0.66
Attitude about the Organization		0.32	0.73
Satisfaction with Being Treated as an Individual		0.18	0.83
Satisfaction with the Physical Setting		0.02	0.98
Satisfaction with Change and Variety		1.40	0.25

<sup>z</sup>Degrees of freedom for all the dimensions were 2, 81. Comparisons were done on 84 subjects in 3 treatment groups.

#### 4.5 ANALYSIS OF MODERATING EFFECTS

Subgroups within the three treatment groups were made by dividing the individuals within a group on the basis of their pretest responses to the demographic questions and importance dimensions. Twelve subgroupings were derived independently; one subdivision for each of the demographic questions and importance dimensions. Means on all 11 dimensions at the pretest and posttest were obtained for each subgrouping. Means within the subgroupings were compared only for those dimensions that seemed relevant. For example, the groups were subdivided on the dimension of the importance of the physical setting, and then the means for satisfaction with the physical setting were compared on the basis of how the individual responded to the questions concerning importance of the physical setting (see Table 8).

It is interesting to note that the mean satisfaction score for those individuals who rated the physical setting as unimportant was higher within each group than that for those individuals who rated the physical setting as important. This trend was also seen in the change and variety dimension, but to a lesser degree since fewer individuals rated change and variety as unimportant. This



Table 8. Comparison of Pretest and Posttest Means for the Physical Setting Dimensions Subdivided Based on Rated Importance of the Physical Setting.

IMPORTANCE RATING	DEPT. 2 EXPERIMENTAL GROUP		DEPT. 2 CONTROL GROUP		DEPT. 1 CONTROL GROUP	
	Pre	Post	Pre	Post	Pre	Post
IMPORTANCE OF THE PHYSICAL SETTING						
Important	N*=19		N=25		N=18	
	3.9	4.1	4.0	4.1	3.9	4.1
Unimportant	N=10		N=4		N=8	
	2.2	2.4	1.9	2.4	1.8	2.2
SATISFACTION WITH THE PHYSICAL SETTING						
Important	2.4	2.6	3.4	3.5	2.1	2.3
Unimportant	3.2	3.1	3.6	3.9	3.6	3.4

\*N is the number of subjects within each group who rated the importance of the physical setting as either important or unimportant.

would seem to suggest that if something is unimportant to an individual, he/she will tend to express satisfaction with it.

Various other trends in mean differences were noted for the subgroupings, but the number of individuals in each subgroup was often quite small. These minor trends will not be reported, not only because of the lack of statistical significance, but also because they merely describe differences between all subgroups within all the groups. The purpose of these subgroupings was to determine if any individual difference characteristic acted as a moderator of the difference. No individual difference was found to act as a moderator of the effects of the flowers.

#### 4.6 INVESTIGATION OF RESPONSE STRENGTHS

Although subjects were not specifically asked to order their satisfaction with, attitude toward, or perceived importance for various dimensions, an estimate can be made of their rank orderings on the basis of the response means or medians for each dimension.

It is interesting to examine the median scores for dimensions, since the median reflects the middle score in a series of scores where there is an equal number of scores above and below it. Very few questions resulted in

negative median responses, but the dimensions with the lowest median scores represent those that contain the questions that most frequently received a negative response. The two dimensions with the lowest median scores were attitude about the organization and satisfaction with the physical setting. Conversely, the most positive median scores were found for the dimensions of the importance of being treated as an individual and attitude about coworkers (see Appendix K).

By examination of the means for dimensions, the relative rankings, as well as the extremes, could be estimated. These rankings were found to agree with the median extremes.

Of the importance dimensions measured, the highest means were obtained for the dimension of the importance of being treated as an individual. There were very few responses of three (neutral) or below for questions in this dimension (the lowest was 2.75). This indicated that people in general felt that being treated as an individual was important, more important than many other things at work. This reaffirmed the results of a survey published in the Washington Post. The results of surveying 100,000 people in a wide range of jobs indicated that people overwhelmingly agreed that respect as a person was

essential to job satisfaction (2). Compared to the importance of being treated as an individual (mean=4.7), the dimension of change and variety (mean=4.4) was considered second most important, and the physical setting was considered the least important (mean=3.4).

Response means for the satisfaction dimensions indicated that subjects were most satisfied with being treated as an individual (mean=3.6), least satisfied with the physical setting (mean=2.9), and slightly satisfied with change and variety (mean=3.1). Comments during the interviews indicated a general dissatisfaction with the appearance of the office. Many comments like the following indicated the dire need for redecorating: "Well, them walls are pretty straggly and dirty now, and that carpet is looking pretty ragged and beat, and it smells in the hallways." Subjects also mentioned that the wallpaper, carpet, and paint on the walls had not been replaced in the 20 years since the building had been built.

Various subjects also indicated that the flowers were viewed as being nice but only temporary, not the more permanent changes that they deemed more necessary. One subject even said she felt the flowers were being used as an appeasement, since they were available free, and the organization could not afford to make the more permanent

changes. These perceptions could be an explanation for why the flowers did not affect employees' satisfaction with the physical setting or their attitudes about the organization.

The mean, as well as the median score for attitude was lowest for the organization (mean=3.1). Attitude toward the supervisor was in the middle (mean= 3.4), and attitude about coworkers was the most positive (mean=4.0). This could possibly be related to the relative distance from the individual. Coworkers are more closely associated with, supervisors are to a lesser degree, and the organization is the farthest removed. This would indicate, as one subject said, that flowers given by a coworker would cause the most positive response, because of an emotional attachment to the giver.

#### 4.7 RESULTS OF INTERVIEWS

The results of the five informal interviews showed some interesting insights into understanding the subjects responses. Five general topics of responses will be discussed in further detail: subjects' view of the appropriate place of flowers, subjects' preferences, support for an overkill effect, attitude effects, and subjects' perceptions of the source of the flowers.

#### 4.7.1 Appropriateness of Flowers

Individuals' perceptions of the flowers were represented in their expressions about the most appropriate places for flowers. These perceptions should indicate to florists what marketing strategies have been influential on consumers and what marketing strategies need to be further developed. Although some of the subjects said they liked having the flowers at work or often brought flowers into the office, many said: "The flowers were pleasant but seemed odd in the office"; "I can see plants in the office, but not flowers though, because flowers die, plants live"; and "Plants seem more appropriate in offices." When asked whether they preferred having flowers in the office or at home, some people said at home, some said in the office, and some said both. This could be indicative of varying marketing effects or personality differences in preferences. One woman expressed a particularly strong preference for having the flowers at home: "I couldn't wait 'til it was Friday so we could take the flowers home. I just prayed those things would last. I didn't want them at work. I just wanted to have those flowers home. All week I wanted them at home, even though I'm here 90% of the time. Isn't that terrible?" For a positive effect on people like this, it seems essential that they be allowed to make the decision of whether or not they want to leave

the flowers in the office. They should not feel guilty because their preference differs from the intent of the organization.

A clearer view of the subjects' perceptions of the appropriate place of flowers was given when they responded to the question "What would you buy flowers for?" Concerning an office context, people responded: "We might buy them for the front desks; they'd be nice for the public," and "I wouldn't buy them for myself, for my desk; I would for someone in the hospital." Speaking of past purchases for coworkers, one young employee said, "We bring in flowers all the time. I'd spend a couple dollars for flowers; it's nice to cheer somebody up." The general view of flowers as appropriate as gifts and for special occasions was upheld. "I'd buy more for giving." "I'd buy for others, order for birthdays at the office." "I'd buy only for special occasions." "I can't afford to buy flowers very much, it has to be a pretty special occasion before I'd even think about buying flowers."

#### 4.7.2 Preferences of Subjects

Besides the expressed preference for green or flowering plants over fresh flowers, there were also some specific preferences about fresh flowers. Some preference for roses, carnations, and football (standard) mums was

expressed by different individuals. Roses provoked a mixture of responses: "I like roses."; "I took the roses out because I couldn't appreciate them in the arrangement."; and "The roses didn't look as nice as long as the other flowers."

The following responses answered the question "Is color or the variety of flowers in an arrangement more important?": "Color seems more important than the type of flowers, the overall effect"; "It's nice to see variety"; and "Color, the overall effect, seems most important; lasting quality's important. I prefer a variety of colors and flowers." And, although it might have been due to the initial novelty, there was a definite consensus among the subjects that the arrangements the first week were the nicest. "The first week was the prettiest, more colorful, brighter colors. They got kinda dull after that. They were more colorful.... The others were...I don't know, more muted colors or something." "The first week was the prettiest; as time went by, they weren't as pretty." "The first week was the prettiest with them little irises." This preference could be due to the actual colors, which were mostly the bright primary colors, the content, although the only difference was the irises, or most likely, the novelty of the flowers the first week. Some subjects indicated that they became pickier the second and



third weeks and also that the initial thrill of having flowers began to wear off. The flowers were more muted colors the second week, and somewhat more pastel the third week, yet it seems clear that the expressed preference for the flowers the first week was a combination of not only preference for the brighter colors but more importantly the initial appreciation. Since the flowers were more appreciated the first week, subjects remembered those flowers more favorably than the other weeks. This would seem to indicate that people would appreciate flowers that are sent at an unexpected time, when flowers have not been in the environment recently. For example, an unexpected bouquet of flowers sent on an ordinary day would be appreciated more than the same bouquet sent during an illness, when it would be added to the collection of flowers already in the room. The latter may be less appreciated not only because it is one of many, but because of the negative connotations often ascribed to flowers when associated with funerals and the thought of not getting well.

#### 4.7.3 Overkill Effects

Both the size and number of the arrangements, as well as the frequency, seemed to have had an overkill effect. A few subjects expressed an insatiable desire for flowers:

"I like to have them around all the time, even wildflowers"; "I appreciate them just as much each time I get them"; and "There's never too many." But most expressed a definite concensus that less flowers in the office would be better. "I personally thought we had too many and we could've probably given some to the others. We didn't need one for everybody's desk. A bud vase would've been sufficient." "They could make them a little smaller and not quite as many and they'd be a lot more enjoyable." "I liked having them around but there were too many of them, they overdid it." "I think a few convey emotion just as well as many." "I remember a single flower sent to my father's funeral rather than the \$50 masses." Most subjects agreed that a bud vase type arrangement would be better. "There were too many, some bud vases or scattered around would be better."

There were also some subjects that expressed the attitude that receiving flowers for three consecutive weeks was too frequent. "It'd be nice to do it on an occasional rather than a regular basis." "I think the first time around it was a big thrill, then after that it was old hat almost." "People got pickier during the second and third weeks." "We kept the flowers around from the first week; we had flowers all over the place."

#### 4.7.4 Attitude Effects

Although some people expressed the idea that flowers "made their day," "cheered them up," or "cheered up the cranky people," they also said they "didn't notice any difference in coworkers' attitudes" and "as far as work relations with the people, I don't think it changed things in the office." The questionnaire results support these comments that the flowers made no difference in attitude about coworkers. However, attitudes about coworkers were quite positive initially (mean=4.0). Any positive effect the flowers could have had would have been incremental if anything. A very sensitive instrument would be needed to measure such an incremental change, and its value in the real world would be questionable. As one subject aptly summarized, "It'd take a heck of a lot more than that [flowers] to make a difference on those questions."

People mentioned how beautiful, appreciated, and enjoyable the flowers were, but the only effect mentioned was that on the clients. They said, "the flowers put them in a better mood; they were less hostile," and "I work out front and I have a lot of clients come up to my desk. I always got a lot of comments about how pretty they looked on the desks and how nice they were. They were nicer about their business. It brought a smile to their faces where half the time they just say 'here' and leave!"

One thing to consider is that the flowers had an effect that was not measured, on attitudes and dealings of people who came in contact with the office. The focus for benefits of using flowers in the business environment may potentially be in the worker/client interaction. The effect may be on actual positive client reactions, positive responses by workers to the clients, or more of a contagious mutual response to one another's attitudes. Flowers may effect clients' perceptions of the business. This may be useful to firms who are trying to portray a certain image. Recent research has shown that small environmental clues can influence an individual's perception of the occupant (9, 35, 37, 56) or the administration responsible for an environment (7). Organizations use interior plants often to enhance their image (18, 31). To this purpose, flowers may prove appropriate and effective.

#### 4.7.5 Perception of the Source of Flowers

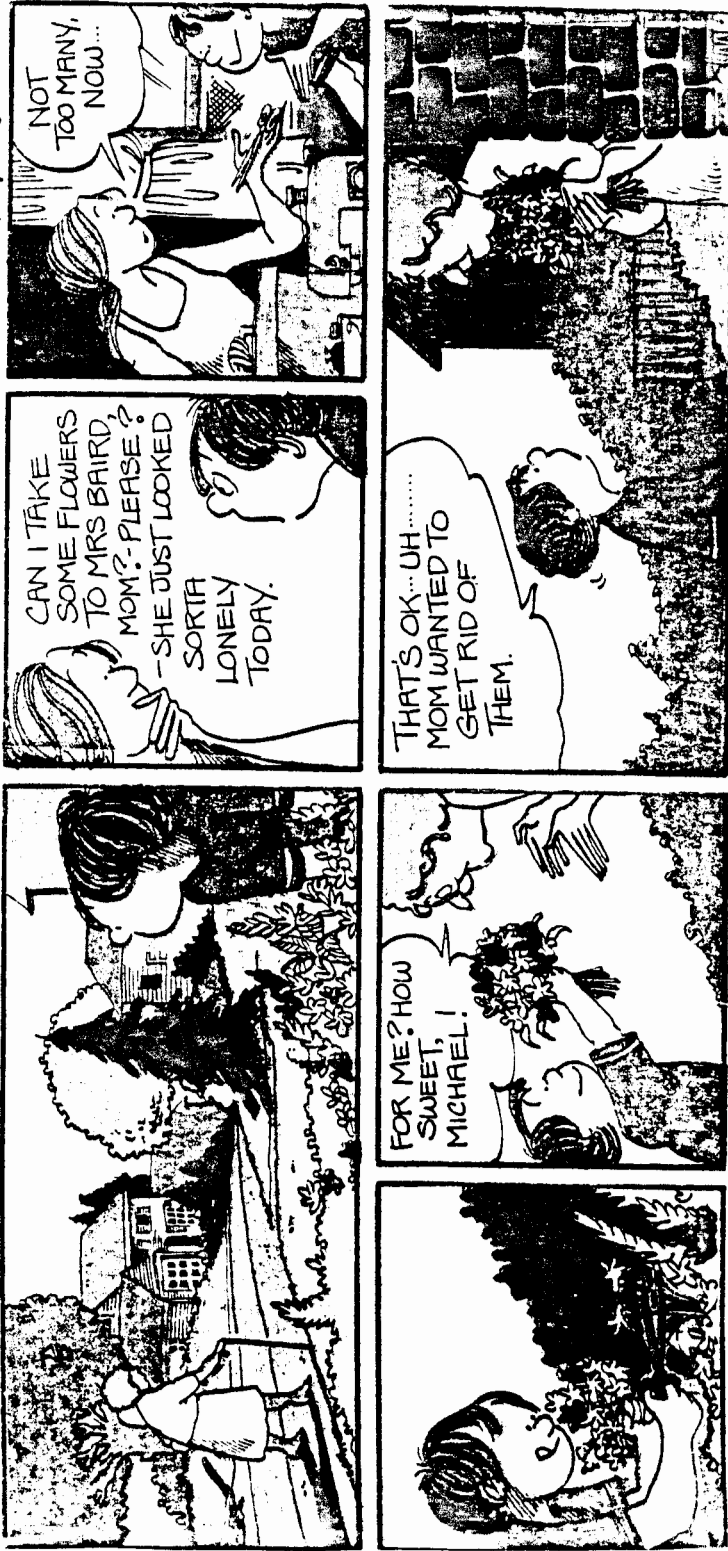
Some individuals said "It doesn't matter who the flowers are from; they are just nice to have." But most of the subjects expressed some perceived attribution to the source of the flowers. Flowers are generally given for a reason and many of the subjects derived their own reasons or were very curious about the real reason. Some of the subjects

thought that "they were being given on some reward basis." Others viewed them as a giveaway and mentioned that it "creates problems when someone doesn't get a giveaway." Others wondered "Why didn't the students want to take their own arrangements home? Why wouldn't they take them home? Why are they giving them to us?"

The way the subjects perceived the answer to the last question seemed to be crucial in understanding any effects caused by the flowers. The effect of flowers on people will be directly influenced by what the flowers represent to the individual, whether they are throwaways or gifts, and the perceived motivation for the "gift." The cartoon very aptly illustrates this idea (Fig. 3). As a couple of subjects said, flowers would be "more important as a gift; there's an emotional attachment to the giver," and the effect "depends on the person giving them to you, how special the person is to you." They agreed that emotions do play a big role in the effects of the flowers. Despite the widely held opinion among florists that flowers have a wonderful, mystically positive effect, this is not always true in reality. Depending on the receiver's perceptions, the flowers may even have a neutral or even negative effect. For example, the guy who waits until his girlfriend has dumped him to send flowers will probably be disappointed that the flowers don't have that mystical

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by Lynn Johnston



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Fig. 3. Cartoon Depicting the Importance of Perceived Source, Reasons, and Emotions Associated with Flowers.

positive healing effect he'd been led to believe. Likewise, if the reason for giving flowers is perceived as an appeasement, a bribe, a means of manipulation, an obligation, a means of impressing, or as otherwise insincere or unwanted expressions of emotions, the response to the flowers will be less than "wonderful." People in general do like flowers, and flowers can have a positive effect, especially if perceived as a sincere expression of an emotion that the receiver will appreciate. After the first week, the experimental group wrote a thank you note to the department director. This gesture indicated that the people viewed the department director, if anyone, as responsible for getting the flowers for them. It seemed that if any attitude change would have occurred, it would have been toward the department director. However, since the department director was not the immediate supervisor for the groups, the questionnaire did not measure this attitude. Some subjects said that any recognition from their supervisor would be appreciated. Others said they thought flowers, or, as one man said, especially roses, would be a nice gesture of recognition. Thus, if the flowers had been perceived as coming from the immediate supervisor, as a sincere expression of appreciation for the worker, the effect of the flowers might have been a more positive attitude toward the supervisor. However, as the

responses to the questionnaire indicated, the attitude about the supervisor was already rather positive (mean=3.4). Therefore, even if the flowers had been given by the supervisor as an expression of appreciation, the positive effect may not have been great enough to be measured.



## Chapter V

### CONCLUSIONS AND IMPLICATIONS

Although no statistically significant effect was measured, one cannot draw the valid conclusion that flowers cause no effect on attitudes. As mentioned earlier, attitudes have emotional components and flowers often represent the emotions of a giver. There are a number of possible reasons for the absence of a measured effect of the flowers in this study.

It is possible that because the offices studied were so sterile, with very few plants or pleasant interior decorating, the flowers were too extreme a change for the environment. As some of the subjects said: "Plants seem more appropriate for the office"; "I can see plants in the office, but not flowers"; "Flowering plants would be a good compromise"; and "Flowers were somewhat odd, but pleasant." Since there were very few plants in the environment, subjects would have preferred to receive plants than what they defined as beautiful, yet short-lived, fresh flowers. Although this preference was expressed widely, it seems unlikely that the results would be any different if the only change in the experiment was the substitution of flowering plants for the fresh flowers.

Subjects often expressed the attitude that they felt there were too many flowers around all at once and that it became almost "old hat" after the first "big thrill." This might indicate that flowers, like other new changes, are appreciated most when they are first introduced, before the novelty wears off. However, this would merely show that flowers have no long-term effect on attitudes; i.e., any effect would have to be measured soon after the flowers were introduced, not after three consecutive weeks. And although periodic change is desirable, a short-term effect on attitudes might not be a sufficiently desirable outcome for most organizations to justify the expenditure on flowers.

There also might have been an overkill effect of having so many flowers around at one time. Some subjects suggested that the office looked and smelled like a funeral parlor. It is unfortunate that flowers have developed such negative associations to people, but nonetheless, they have, and florists need to overcome this association. Perhaps requests to make charitable donations in lieu of buying flowers for funerals are not as bad an omen for florists as they superficially seem. The only place some people have seen large floral displays is at funerals. This has not been good exposure for flowers as some florists may believe. The exposure would most aptly be

described as "bad press" because of the negative mental associations people have developed as a result. Perhaps the best way to counter the negative associations people have connected with flowers is to promote the use of flowers in everyday contexts so that people will begin to see flowers more often in places other than funeral homes. In this way, florists can help people develop more positive associations with fresh flowers.

It is also possible that the attitudes that were affected were not those that were measured. One subject suggested that it would take more than flowers to affect the attitudes the questionnaire measured. Other subjects indicated that the flowers cheered people up and made clients conduct their business more pleasantly. Again, however, the question arises whether these "effects" would be considered sufficiently valuable outcomes for an organizations' expenditure on flowers. If it were a customer complaint department, this effect might be truly a valued outcome. The attitudes chosen to be measured were some of the employee attitudes that have been shown to be important to organizations. However, some organizations may be more concerned about customer/client satisfaction than with employee satisfaction. Many organizations today are not concerned about the quality of life issues except to the extent that humanistic changes help the overall

profit picture. Their main interest is profit, and related to that, customer satisfaction, repeat business, and customer perceptions of the organizations. Interiorscapers have reported that businesses use plants often to enhance their image, attract employees, and impress clients (18, 31).

The most feasible explanation of the results lies in how the flowers were perceived. Even though the most relevant attitudes were measured in the questionnaire, the flowers were not perceived as coming from either the supervisor, coworkers, or the organization. The flowers were perceived as coming from outside the organization. Individuals expressed their appreciation to the department director for arranging for their department to act as a "short-term depository" for the flowers, but attitudes toward him were not measured on the questionnaire. Nor were questions about the subjects' attitudes toward the O. S. U. Horticulture Department included in the questionnaire! The point of who was perceived as giving the flowers is crucial, since attitude changes would most likely occur toward the giver. Closely tied to this is the concern that flowers were perceived as a giveaway, a "freebie." This not only devalued the flowers, since they did not cost anything and somebody wanted to get rid of them, but it also removed any emotional attachment to the giver. A

single flower given by the immediate supervisor as a direct expression of appreciation on a nonoccasion would most likely have a greater effect than a large bouquet given on Secretary's Day by the owner of the company to all the secretaries. The latter is given as an obligation by someone emotionally removed and someone who could easily afford it. Combining this idea with the relative importance of subjects being treated as individuals and their expressed need for any recognition from the supervisor would lead one to believe that an effect may have been measured if the flowers had been perceived as a token of appreciation from the immediate supervisor.

To be effective in changing employee attitudes, the flowers must be perceived as a sincerely given, appropriate, and welcomed expression of some emotion (appreciation, recognition, care, etc.). Individuals differ in their expectations, preferences, past experiences, and cynicism; these differences will affect the way individuals perceive things.

Psychologists have developed what is known as attribution theory to explain this phenomena; "people do seek the causes of others' behavior, tend to attribute behavior to the individual rather than the environment, and evaluate or react to behavior based on their perceptions of

its causes" (43). Three things have been identified by which individuals judge another person's behavior as truly reflective of their motives or feelings. First, if the behavior is viewed as due to external causes (money, obligation) rather than sincere internal motives, people tend to judge the behavior as uncharacteristic of the individual and also question the motives of the actor (what is the true reason for the behavior?). For example, if the giving of flowers is perceived as due to peer pressure or obligation, positive impressions of the actor will not be attributed, but rather, the motives will be questioned and the purpose of the gift devalued. Second, if the behavior has no direct consequence for an individual, he/she is less likely to attribute or judge the actor. Third, unless the individual perceives the act as intentionally directed to him/her personally, the behavior and intentions will most likely be ignored. For example, if the giving of flowers is not viewed as being intended for a particular individual, he/she may view it as "nice" but will not make judgements about the giver. No positive motives, feelings, or characteristics will be attributed to the giver (22). Thus, unless the giving of flowers is viewed as for internal (free choice) reasons, with pure motives, and as intentionally personal, no measured changes in employee attitudes should be expected.

Further rigorous research needs to be conducted in this area of the psychological effects of flowers/plants. If the emphasis is on using flowers as an interior or exterior environmental change, the effects measured should be the reactions, attributions, perceptions, impressions, and interactions of the clients or visitor rather than the effect on the employees. If the concern is for changing employee attitudes, flowers/plants should be presented as a sincere, personal expression of emotion if any change in attitude/behavior is expected to be measured. If the concern is for motivation of employees, flowers/plants should be presented on a contingent reward basis.

Flowers are unique, natural, beautiful products. However, the assumptions that they meet some psychological need of humans, and should therefore be more effective in changing psychological reactions, has not been substantiated by research. To measure any psychological effects of flowers, the researcher must rely on psychological theories that explain human phenomena rather than on the assumed positive effects flowers are expected to cause. The inherent qualities of flowers/plants do not seem to be as important to understanding the effect of flowers/plants on people as the psychological circumstances surrounding the presentation of the flowers/plants. The effect of flowers/plants will be dependent on the

circumstances, perceived value, meaning, and emotions that the flowers represent.



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Subject: Special Research Study

Date: April 15, 1983

From: (department directors' name)

To: Assistant Directors/Managers

An opportunity has arisen to participate in an employee attitude survey administered by the College of Administrative Science at The Ohio State University. I would like to request your assistance in informing your staff and enlisting their cooperation.

Within the next several months, your employees will be asked to complete two questionnaires. We will be distributing the questionnaire to you for them to complete and request that they be deposited in a box or some other collection device by the end of the day. Employees are to be asked to cooperate by answering the questions honestly and completely. All the responses are anonymous. This will be assured by use of a separate answer sheet and a central drop location. I hope to utilize the results of this questionnaire to develop employee training programs in the future.

SUBJECT: Special Opportunities

DATE: April 29, 1983

FROM: (department directors' name)

TO: (Name of organization) Employees

I happened to be speaking with someone from the College of Agriculture at Ohio State University the other day who indicated that it was sometimes possible to receive fresh flower arrangements. These have been created through the instructional process and can be displayed during the week following the arranging class. I understand that a limited number of them may be available, so I have indicated that we would be willing to be a short term depository for them. Due to the limited number of flowers available, probably only a few areas in our entire office may have flowers.

These flowers will probably be delivered some time during the day on Mondays. I would encourage each of you who may happen to receive them to feel free to take them home on Fridays. There was one catch in that the containers must be returned to the college and, therefore, I must ask that they be left wherever they were originally placed. In order to have the benefit of having the flowers, we must return every container on time. So anyone who might choose to take the flowers home should plan to bring your own container to the office or utilize a plastic bag or newspaper. Also, in order to keep the flowers as nice as long as possible, the agriculture folks urge that we watch the water level in the containers; avoid drafts or rapid temperature changes; if the water needs to be changed, utilize non-diet 7-Up, Sprite, Teem or floral preservative in the water; and pull out the flowers that don't make it all during the week.

As I mentioned before, the program is limited and only certain portions of the office will probably receive the flowers. I hope you will understand if your area does not receive them immediately.

If anyone has any questions or comments, you may feel free to see me anytime.

MEMO TO ALL EMPLOYEES

The company has made available an opportunity to provide flowers for the office at a very nominal cost. Your supervisor has taken advantage of this opportunity. Flowers will be on each of your desks every Monday morning. The flowers are yours to take home on Friday if you so desire but the container is the property of the supplier and must be left in the office. The charge for lost containers is too high for the company to bear, so we will discontinue the program if they start to disappear. We suggest you bring in a container, bag, or newspaper if you wish to take the flowers home. Below are a few tips from the supplier to help you keep the flowers beautiful longer.

1. Keep container full of water.
2. Keep flowers out of drafts and extreme temperatures.
3. Use a preservative in the water or 1/2 regular 7-Up, Sprite, or Teem in the water.
4. Remove and dispose of "fading" flowers.



THE Q-SORT PROCESS (Stage I)

Thank you so much for carefully reading and following all the following instructions.

There are 138 statements on 138 cards. These statements are about various topics. You are to try to group the statements according to topics. This will be done by forming piles of similar statements. Each separate topic should have a separate pile. The piles should then be each given a topic label. You will formulate this label by what you think the topic of the statements you grouped together is. In other words, what did you think was the central idea (topic) that made you group all those statements together.

1. Shuffle the cards.
2. Take one card at a time, read the statement.
3. If the statement concerns the same topic as a previously formulated pile, place it there. If the statement concerns a new topic, form a new pile.
4. Sort the cards into as many piles as you think necessary.
5. There is no set number of cards per pile. You may have different numbers of cards in different piles.
6. Sort all 138 cards into piles in this manner.
7. Write a label for each of your piles. (you may then want to check the statements in the piles to see if they conform to your label)
8. Place a rubber band around each labeled pile, return to the envelope, and return to the researcher.

Example:

First card- My neighbours are very friendly people.  
 Second card- My minister does his job well.  
 Third card- My neighbours will lend me any tools I want to borrow.  
 Fourth card- My neighbours never acknowledge me even when I say a friendly hello.  
 Fifth card- I like my minister.  
 Sixth card- My minister is corrupt.  
 Seventh card- My postman is unfriendly.

I would sort these;

Pile 1	Pile 2	Pile 3
Card 1,3,4	Card 2,5,6	Card 7

Then I would label them;

Pile 1-Attitude or friendliness of neighbours

Pile 2-Attitude about minister

Pile 3-Attitude about postman, or friendliness of postman

Notice that statements about friendliness of neighbours may say how friendly or how unfriendly they are.

THE Q-SORT PROCESS (Stage II)

Thank you so much for carefully reading and following all the following instructions.

There are 138 statements on 138 cards. These statements are about various topics. You are to try to group the statements according to topics. This will be done by forming piles of similar statements. Each separate topic should have a separate pile. The piles should then be each given a topic label. You will formulate this label by what you think the topic of the statements you grouped together is. In other words, what did you think was the central idea (topic) that made you group all those statements together.

1. Shuffle the cards.
2. Take one card at a time, read the statement.
3. If the statement concerns the same topic as a previously formulated pile, place it there. If the statement concerns a new topic, form a new pile.
4. Sort the cards into as many piles as you think necessary. (no more than 11)
5. There is no set number of cards per pile. You may have different numbers of cards in different piles.
6. Sort all 138 cards into piles in this manner.
7. Write a label for each of your piles. (you may then want to check the statements in the piles to see if they conform to your label)
8. Place a rubber band around each labeled pile, return to the envelope, and return to the researcher.

## Example:

First card- My neighbours are very friendly people.  
 Second card- My minister does his job well.  
 Third card- My neighbours will lend me any tools I want to borrow.  
 Fourth card- My neighbours never acknowledge me even when I say a friendly hello.  
 Fifth card- I like my minister.  
 Sixth card- My minister is corrupt.  
 Seventh card- My postman is unfriendly.

I would sort these;

Pile 1	Pile 2	Pile 3
Card 1,3,4	Card 2,5,6	Card 7

Then I would label them;

Pile 1-Attitude or friendliness of neighbours

Pile 2-Attitude about minister

Pile 3-Attitude about postman, or friendliness of postman

- \* Notice that statements about friendliness of neighbours may say how friendly or how unfriendly they are.
- \* Note also that the cards with lines do not belong together in one group.

The Q-Sort Process (Stage III)

Thank you so much for carefully reading and following all the following instructions.

There are 132 statements on 132 cards. These statements are about various topics. You are to try to group the statements according to topics. There are 11 topic headings on 11 handwritten cards. Each of the 11 topics should have a separate pile. You are to decide which topic category each statement belongs in.

1. Shuffle the cards. Take one card at a time, read the statement.
2. Read the topic categories and place the statement in the category it best fits.
3. There is no set number of cards per pile.  
You may have different numbers of cards in different piles.
4. Sort all 132 cards into piles in this manner.
5. Check the statements in the piles to see if they conform to the label.
6. Place a rubber band around each labeled pile, return to the envelope, and return to the researcher.

Example:

First card-My neighbours are very friendly people.

Second card-My minister does his job well.

Third card-My neighbours will lend me any tools I want to borrow.

Fourth card-My neighbours never acknowledge me even when I say a friendly hello.

Fifth card-I like my minister.

Sixth card-My minister is corrupt.

Seventh card-My postman is unfriendly.

Categories

Attitude or friendliness of neighbours	Cards 1,3,4
Attitude about minister	Cards 2,5,6
Attitude or friendliness of postman	Card 7

Notice that positive and negative statements about friendliness are included in the first category.

Note also that the cards with lines do not necessarily belong together in one group.

O.S.U. STUDY 70932

Dear           employee,

This questionnaire is designed to find out how you feel about your job and the people you work with.

If this questionnaire is to be useful, it is important that you answer each question frankly and honestly. There are no right or wrong answers to these questions, since we are interested in how you feel about your position

Your answers to these questions are completely confidential. We ask that you remove your name from the envelope before you turn it in. We can assure you that no one in your department will see your questionnaire. All questionnaires are the property of the Business Dept of O.S.U. and will be used solely for research purposes.

The research method we are using may require you to fill the questionnaire out again within the next two months. Please assist us again by filling it out frankly and completely.

Please read the instructions on the answer sheet then turn to side one and use answer spaces 1 thru 67 in answering the survey questionnaire. You do not need to fill out any other areas of the answer sheet.

After you complete the questionnaire, please place it back in the envelope along with the answer sheet and pencil, remove your name and return it to the designated place.

Thank you in advance for your cooperation and assistance. We hope you find the questionnaire interesting and thought provoking.

The Ohio State University  
Department of Business Administration

O.S.U. STUDY 70932

Dear Employee,

This questionnaire is designed to find out how you feel about your job and the people you work with.

If this questionnaire is to be useful, it is important that you answer each question frankly and honestly. There are no right or wrong answers to these questions, since we are interested in how you feel about your position at

Your answers to these questions are completely confidential. We ask that you remove your name from the envelope before you turn it in. We can assure you that no one in your department will see your questionnaire. All questionnaires are the property of the business department of O.S.U. and will be used solely for research purposes.

Although you may have filled out this questionnaire before because of the research method we're using we must ask that you assist us by filling it out again, frankly and completely, in order for the information to be useful for research purposes.

Please read the instructions on the answer sheet then turn to side one and use answer spaces 1 thru 67 in answering the survey questionnaire. You do not need to fill out any other areas of the answer sheet.

After you complete the questionnaire, please place it back in the envelope along with the answer sheet and pencil, remove your name and return it to the designated place.

Thank you in advance for your cooperation and assistance. We hope you find the questionnaire interesting and thought provoking.

The Ohio State University  
Department of Business Administration

GENERAL INSTRUCTIONS

Most of the questions ask that you check one of several numbers that appear on a scale at the top of the page. You are to choose the number that best matches the description of how you feel about the item. For example, if you were asked how much you agree with the statement "I enjoy the weather in this area" and you feel that you do agree, you would mark the number (4) on the answer sheet since (4) is the number of the answer "Agree". Completely fill in the answer circle with a black lead pencil as in the example below.

		<i>Strongly disagree</i>			
		<i>Disagree</i>			
		<i>Undecided</i>			
		<i>Agree</i>			
		<i>Strongly agree</i>			
I enjoy the weather in this area. ....	(1)	(2)	(3)	(4)	(5)
	①	②	③	●	⑤

Note that the scale descriptions may be different in different parts of the questionnaire. For example, they may ask not whether you agree or disagree but perhaps whether you are satisfied or dissatisfied, or how important something is to you.

So, be sure to read the special instructions that appear at the top of each page. Be sure to read the scale descriptions before choosing your answers.

When you have finished, please place the questionnaire and answer sheet in the envelope, remove your name from the outside, and return the envelope to the designated place or person.

\*\*\*\*\*

## O.S.U. EMPLOYEE SURVEY

## PART I

The following information is needed to help us with the statistical analyses of the data. This information will allow comparisons among different groups of employees and comparisons with similar employees in other organizations.

All of your responses are strictly confidential; individual responses will not be seen by anyone within this organization. We appreciate your help in providing this important information.

---

PLEASE ANSWER EACH OF THE QUESTIONS BELOW BY MARKING THE NUMBER ON THE ANSWER SHEET OF THE DESCRIPTION WHICH BEST FITS YOU.

---

- |   |   |
|---|---|
| <p>1. Are you - (check one)</p> <p>[1] Female<br/>[2] Male</p>  | <p>3. What is your marital status?</p> <p>[1] Married<br/>[2] Widowed<br/>[3] Separated<br/>[4] Divorced<br/>[5] Never married</p>  |
| <p>2. What is your education level<br/>(indicate highest completed)?</p> <p>[1] Some elementary and/or<br/>high school</p> <p>[2] Graduated from high school<br/>or G.E.D.</p> <p>[3] Some college or technical<br/>training beyond high<br/>school (1-3 years)</p> <p>[4] Graduated from college<br/>(4 or more years)</p> <p>[5] Some graduate school<br/>(5 or more years)</p> | <p>4. Are you - (check one)</p> <p>[1] Black<br/>[2] Oriental<br/>[3] Hispanic or American<br/>Indian<br/>[4] White<br/>[5] None of the above</p> <p>5. How old were you on your last<br/>birthday?</p> <p>[1] Less than 20 years old<br/>[2] 21 to 30 years old<br/>[3] 31 to 40 years old<br/>[4] 41 to 50 years old<br/>[5] 51 or more years old</p> |

6. What was the size of the community in which you spent the largest portion of your life up to the time you finished high school?
- [1] On a farm or ranch
  - [2] In a rural area, not on a farm or ranch
  - [3] A suburban town near a city
  - [4] A small city (less than 100,000)
  - [5] A large city ( more than 100,000)
7. Is your income - (check one)
- [1] The major source of financial support for your immediate family
  - [2] One half or less the total financial support for your immediate family
  - [3] The only source of financial support for your immediate family
  - [4] The only source of financial support for you alone (you have no dependents)
  - [5] None of the above
8. How long have you been employed at your present job?
- [1] Less than 1 year
  - [2] 1 year to 2 years
  - [3] 2 years to 3 years
  - [4] 3 years to 4 years
  - [5] 4 years or more



## PART II

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DIFFERENT PEOPLE WANT DIFFERENT THINGS FROM THEIR WORK. HERE ARE SOME STATEMENTS DESCRIBING ASPECTS OF WORK WHICH MAY BE IMPORTANT TO YOU. USING THE FOLLOWING SCALE, PLEASE MARK THE NUMBER OF THE ANSWER WHICH BEST DESCRIBES HOW IMPORTANT EACH OF THE FOLLOWING ASPECTS IS TO YOU.

---

(1) *Not important  
at all*      (2) *Not very important*      (3) *Undecided*      (4) *Important*      (5) *Very important*

How important is.....

9. ... the appearance of your office compared to other offices?
10. ... the routineness at work?
11. ... the attractiveness of your work surroundings?
12. ... the amount of variety in your day at work?
13. ... the colorfulness of your work surroundings?
14. ... the amount of change during your day at work?
15. ... the way your office is decorated?
16. ... the chance to do things differently from time to time?
17. ... the physical appearance of your work surroundings?

## PART III

---

HERE ARE SOME STATEMENTS ABOUT HOW IMPORTANT THE WAY YOU ARE TREATED AT WORK IS TO YOU. USING THE FOLLOWING SCALE, PLEASE MARK THE NUMBER OF THE ANSWER WHICH BEST DESCRIBES HOW MUCH YOU AGREE OR DISAGREE WITH EACH OF THE FOLLOWING STATEMENTS.

---

Strongly disagree  
(1) Disagree (2) Undecided (3) Agree (4) Strongly agree (5)

18. It's important to me to be treated at work as a person, not just a number.
19. It's important to me to be treated at work as an individual.
20. It's important to me to be known personally by the people I work with.
21. It makes no difference to me whether I'm treated as an individual or just a number.
22. It isn't important whether I am treated as a person as well as a worker.

## PART IV

---

HERE ARE SOME STATEMENTS ABOUT YOU AND YOUR JOB. USING THE FOLLOWING SCALE, PLEASE MARK THE NUMBER OF THE ANSWER WHICH BEST DESCRIBES HOW MUCH YOU AGREE OR DISAGREE WITH EACH OF THE FOLLOWING STATEMENTS.

---

Strongly disagree  
(1)      Disagree      (2)      Undecided      (3)      Agree      (4)      Strongly agree      (5)

23. I'm afraid of losing my job at any time.
24. Work is a major part of my life.
25. My job is secure here.
26. Once I leave work, I don't think about things which happen here.
27. When things go well at work I come home more cheerful than when things go poorly.
28. Things which happen at work are important to my overall happiness.
29. Things that happen at work don't affect my life away from work.
30. I am satisfied with the amount of job security I have.

## PART V

---

HERE ARE SOME STATEMENTS WHICH INDICATE FEELINGS YOU MAY OR MAY NOT HAVE TOWARD YOUR COWORKERS. USING THE FOLLOWING SCALE, PLEASE MARK THE NUMBER OF THE ANSWER WHICH BEST DESCRIBES HOW MUCH YOU AGREE OR DISAGREE WITH EACH OF THE FOLLOWING STATEMENTS.

---

*Strongly disagree*  
(1)

*Disagree*  
(2)

*Undecided*  
(3)

*Agree*  
(4)

*Strongly agree*  
(5)

31. I get along well with my coworkers.
32. My coworkers are considerate and friendly.
33. I am confident my coworkers do their jobs well.
34. My coworkers treat me as an individual.
35. My coworkers don't know me by name.
36. I don't respect my coworkers.
37. The people at work are not very friendly.
38. I feel my coworkers regard me as an individual.

## PART VI

---

HERE ARE SOME STATEMENTS WHICH INDICATE FEELINGS YOU MAY OR MAY NOT HAVE TOWARD YOUR SUPERVISOR. USING THE FOLLOWING SCALE, PLEASE MARK THE NUMBER OF THE ANSWER WHICH BEST DESCRIBES HOW MUCH YOU AGREE OR DISAGREE WITH EACH OF THE FOLLOWING STATEMENTS.

---

Strongly disagree  
(1)      Disagree      (2)  
Undecided      (3)  
Agree      (4)  
Strongly agree      (5)

39. My supervisor gives everyone equal opportunity without favoritism.
40. My supervisor doesn't care that I'm a person as well as a worker.
41. My supervisor is courteous and friendly.
42. My supervisor treats me as a worker, not as an individual.
43. My supervisor is always fair with those he/she supervises.
44. My supervisor does not do his/her job well.
45. My supervisor takes an interest in me as a person as well as in how well I do my job.
46. I do not respect my supervisor.

## PART VII

---

HERE ARE SOME STATEMENTS WHICH INDICATE FEELINGS YOU MAY OR MAY NOT HAVE TOWARD THE ORGANIZATION YOU WORK FOR. USING THE FOLLOWING SCALE, PLEASE MARK THE NUMBER OF THE ANSWER WHICH BEST DESCRIBES HOW MUCH YOU AGREE OR DISAGREE WITH EACH OF THE FOLLOWING STATEMENTS.

---

*Strongly disagree*  
 (1)

*Disagree*  
 (2)

*Undecided*  
 (3)

*Agree*  
 (4)

*Strongly agree*  
 (5)

47. The benefits here are not always given fairly.
48. Personnel policies and practices in this organization are good ones.
49. This organization treats me as an individual.
50. I think this organization is really trying to improve relations with its employees.
51. I feel this organization treats me as a number rather than an individual.
52. I don't have confidence in the business judgement of this organization.
53. This organization treats its employees fairly.
54. This organization shows concern for me as an individual.
55. I am treated at work as just a number, not as an individual.
56. I am not called by my name at work.
57. I am treated at work as an individual.
58. I am treated at work as a person, not just a worker.

PART VIII

---

IN THE BEGINNING OF THIS QUESTIONNAIRE YOU ANSWERED SOME QUESTIONS ABOUT HOW IMPORTANT DIFFERENT ASPECTS OF WORK WERE TO YOU.

HERE YOU ARE BEING ASKED SOMETHING DIFFERENT!  
USING THE FOLLOWING SCALE, PLEASE MARK THE NUMBER OF THE ANSWER WHICH BEST DESCRIBES HOW SATISFIED YOU ARE WITH EACH OF THE FOLLOWING ASPECTS.

---

- Very dissatisfied*  
(1)      *Dissatisfied*      (2)      *Undecided*      (3)      *Satisfied*      (4)      *Very satisfied*      (5)

How satisfied are you with.....

- 59. ...the appearance of your office compared to other offices?
- 60. ...the routineness at work?
- 61. ...the attractiveness of your work surroundings?
- 62. ...the amount of variety in your day at work?
- 63. ...the colorfulness of your work surroundings?
- 64. ...the amount of change during your day at work?
- 65. ...the way your office is decorated?
- 66. ...the chance to do things differently from time to time?
- 67. ...the physical appearance of your work surroundings?

\*\*\*\*\*

Thank you for your co-operation!



The Ohio State University

Department of Horticulture

2001 Fyffe Court  
Columbus, Ohio 43210

Dear

As you know, you were selected by your Dept. Director to be invited to participate in a study being conducted by the University. I would like to personally thank you for your cooperation in completing the two questionnaires.

Now that the study is completed, I would like to let you know that the study is part of a thesis research project for a M.S. degree in Horticulture. Horticulture? Yes, I'm working with the Business Administration and Horticulture departments on a project to determine what effects cut flowers may have on the attitudes of office employees. You may have noticed other offices in \_\_\_\_\_ which have been receiving cut flowers; they also participated in this study as a test group. For the validity of research results, it is necessary to have not only a test group (which receives a change) but also a 'control' group (which does not receive the change). This is to be sure that attitude changes which are measured are really from the flowers and not some other reason (like Spring weather)! Both groups are equally essential for research. Thank you again for your important contribution as a member of the 'control' group. Please consider this rose as a token of our appreciation.

We will be more than happy to answer any questions or listen to any comments you may have concerning this study. Please leave your name with \_\_\_\_\_ or drop us a note if you wish to receive a handout summarizing the results of the study when they are available.

Sincerely,

Janet L. Thompson  
Dept. of Horticulture  
422-5030

Dr. Jerry L. Robertson  
Dept. of Horticulture  
422-8200

Dr. Jim McFillen  
Dept. of Business Administration  
422-0476

Dr. Arnon Reichers  
Dept. of Business Administration  
422-0737



The following table contains the means, standard deviations, and medians for the 58 nondemographic questions which were asked in the questionnaire. These statistics were derived from the pretest and posttest responses of the 84 subjects used in the analyses.

Table A1. Means, Standard Deviations, and Medians for the Nondemographic Questions in the Questionnaire.

QUESTION	MEAN	STD DEV	MEDIAN
How important is.....			
9. ... the appearance of your office compared to other offices?	3.4	1.2	3.7
10. ... the routineness at work?	3.4	1.2	3.7
11. ... the attractiveness of your work surroundings?	3.7	1.0	4.0
12. ... the amount of variety in your day at work?	4.2	0.8	4.3
13. ... the colorfulness of your work surroundings?	3.4	1.1	3.7
14. ... the amount of change during your day at work?	4.0	0.8	4.1
15. ... the way your office is decorated?	3.4	1.2	3.7
16. ... the chance to do things differently from time to time?	4.2	0.9	4.3
17. ... the physical appearance of your work surroundings?	3.7	1.1	3.9

Table A1. (continued).

QUESTION	MEAN	STD DEV	MEDIAN
18. It's important to me to be treated at work as a person, not just a number.	4.7	0.6	4.9
19. It's important to me to be treated at work as an individual.	4.7	0.6	4.8
20. It's important to me to be known personally by the people I work with.	3.8	1.2	4.0
21. It makes no difference to me whether I'm treated as an individual or just a number.	1.5	0.8	1.3
22. It isn't important whether I am treated as a person as well as a worker.	1.8	1.1	1.5
23. I'm afraid of losing my job at any time.	2.1	1.1	1.9
24. Work is a major part of my life.	3.5	1.1	3.8
25. My job is secure here.	3.7	0.9	3.8
26. Once I leave work, I <u>don't</u> think about things which happen here.	2.8	1.2	2.5
27. When things go well at work I come home more cheerful than when things go poorly.	4.0	0.9	4.1
28. Things which happen at work are important to my overall happiness.	3.5	1.1	3.8
29. Things that happen at work <u>don't</u> affect my life away from work.	2.5	1.1	2.3
30. I am satisfied with the amount of job security I have.	3.6	1.0	3.8

Table A1. (continued).

QUESTION	MEAN	STD DEV	MEDIAN
31. I get along well with my coworkers.	4.1	0.6	4.1
32. My coworkers are considerate and friendly.	3.9	0.8	4.0
33. I am confident my coworkers do their jobs well.	3.5	1.0	3.8
34. My coworkers treat me as an individual.	3.9	0.8	4.0
35. My coworkers <u>don't</u> know me by name.	1.5	0.6	1.3
36. I <u>don't</u> respect my coworkers.	1.7	0.9	1.6
37. The people at work are <u>not</u> very friendly.	1.9	0.8	1.8
38. I feel my coworkers regard me as an individual.	4.0	0.8	4.0
39. My supervisor gives everyone equal opportunity without favoritism.	3.1	1.3	3.5
40. My supervisor <u>doesn't</u> care that I'm a person as well as a worker.	2.4	1.3	2.1
41. My supervisor is courteous and friendly.	3.7	1.1	3.9
42. My supervisor treats me as a worker, <u>not</u> as an individual.	2.6	1.1	2.3

Table A1. (continued).

QUESTION	MEAN	STD DEV	MEDIAN
43. My supervisor is always fair with those he/she supervises.	3.1	1.3	3.3
44. My supervisor does <u>not</u> do his/her job well.	2.5	1.2	2.3
45. My supervisor takes an interest in me as a person as well as in how well I do my job.	3.4	1.2	3.7
46. I do <u>not</u> respect my supervisor.	2.1	1.1	1.9
47. The benefits here are <u>not</u> always given fairly.	2.8	1.3	2.6
48. Personnel policies and practices in this organization are good ones.	3.1	1.2	3.2
49. This organization treats me as an individual.	2.9	1.1	3.0
50. I think this organization is really trying to improve relations with its employees.	2.9	1.1	3.0
51. I feel this organization treats me as a number rather than an individual.	2.9	1.1	2.8
52. I <u>don't</u> have confidence in the business judgement of this organization.	2.8	1.0	2.7
53. This organization treats its employees fairly.	3.1	1.0	3.3
54. This organization shows concern for me as an individual.	2.8	1.0	2.9

Table A1. (continued).

QUESTION	MEAN	STD DEV	MEDIAN
55. I am treated at work as just a number, <u>not</u> as an individual.	2.6	1.1	2.3
56. I am <u>not</u> called by my name at work.	1.7	0.8	1.7
57. I am treated at work as an individual.	3.4	1.0	3.7
58. I am treated at work as a person, not just a worker.	3.4	1.0	3.7
How satisfied are you with.....			
59. ...the appearance of your office compared to other offices?	3.0	1.2	3.3
60. ...the routineness at work?	3.1	1.1	3.5
61. ...the attractiveness of your work surroundings?	2.9	1.2	3.0
62. ...the amount of variety in your day at work?	3.1	1.2	3.6
63. ...the colorfulness of your work surroundings?	3.0	1.1	3.1
64. ...the amount of change during your day at work?	3.1	1.2	3.5
65. ...the way your office is decorated?	2.9	1.2	2.9
66. ...the chance to do things differently from time to time?	3.1	1.2	3.6
67. ...the physical appearance of your work surroundings?	2.9	1.2	3.0