CONSUMER HORTICULTURE: A PSYCHOLOGICAL PERSPECTIVE

Paula D. Relf1

Virginia Polytechnic Institute and State University, Department of Horticulture, Blacksburg, VA 24061

Popular folk wisdom has long indicated that there are psychological benefits to be derived from interaction with plants. The ancient Chinese are credited with the proverb:

If you would be happy for a day, kill a pig;
If you would be happy for a week, take a wife;
If you would be happy for a lifetime, plant a garden.

Today, the idea of a benefit from a proximity to plants is widely held. This can be seen in the indoor plant movement of the 1970s, the planting of countless backyard gardens, and the increase in the plant displays for the public from shopping malls to office buildings to Disney World. This expanded use of plant materials has been based on intuitive evidence of benefit. In recent years, however, there has been increased interest in understanding the interaction between people and plants and how it alters human behavior and the perception of our environment. Although objective research into this area is sparse, a body of literature is gradually developing that indicates significant positive benefits from human interaction with plants. Professional investigators in this area represent diverse disciplines, including psychology, sociology, geography, urban planning, botany, and urban forestry. Their findings have significance for horticulturists in several areas:

1. Attempts to foster widespread use of plants in cities, whether in parks and other public places or backyard gardens, may be dismissed as expensive, unwarrented luxuries as fiscal policies tighten. As Ulrich (15) pointed out, objective research findings may be more effective than intuition in integrating the need for plants with the action of public decision makers.

2. An understanding of the benefits of proximity to plants would provide incentive and justification for educating those urbanites, who, lacking experience with plants, may be denied enrichments basic to human nature.

3. Research should be expanded not only to include a better understanding of the social and psychological benefits of plant proximities, but also to identify and develop horticultural technologies that enhance these benefits.

4. The student population currently being provided with horticultural knowledge to support their professional goals might be expanded to include urban planners, architects, psychologists, sociologists, as well as professionals in occupational and recreational therapy.

All of these points have direct impact on the traditional areas of horticulture, since the expansion of urban horticulture to satisfy the needs of people for plants in the environment would greatly expand the commercial and educational component of the industry.

Within the limited scope of this discussion, it would be neither possible nor appropriate to attempt to cover all the current theories or research relevant to understanding the interaction between people and plants. Rather, I will discuss those findings that repeat themselves in various studies or that appear to be gaining in acceptance.

Some researchers report benefits of passive experiences with plants while other are primarily concerned with benefits from active horticultural experiences. Passive experiences involve those occasions in which an individual’s or group’s perception of the environment, attitude, or behavior is altered by the presence of plants. Active experiences are those in which the process of caring for the plant is the salient factor in altering perceptions, attitude, or behavior.

Economic values

Ulrich (15) documented both direct and indirect evidence of economic benefits from trees and mixed vegetation. Land values tended to be higher and more stable for property near parks high in vegetation. Assessed values of land with trees was higher than without trees for both developed residential lots and undeveloped land. According to Gold (4), indirect economic benefit occurs when the presence of vegetation encourages new industry to move to a community or provides an opportunity for people to spend their recreational time in the city rather than escaping to regional parks, thus saving much gasoline each year.

Unfortunately, there are no published data on the passive economic benefits of small plants and flowers in public plantings, such as in shopping malls. However, Lewis (10) reported that leaders of the John Deere Corporation have observed enhanced creativity and productivity among the employees in their Administrative Center where plants and structure are so integrated that no employee is more than 45 feet from vegetation.

The Nursery Marketing Council (11) surveyed consumers’ attitudes toward active participation in plant culture. Only 27% listed “adds to property value” as an overall benefit. However, the less apparent, but equally valuable economic benefit of the harvest of vegetables/flowers/fruit was considered important by 47% of the respondents.

The National Association for Gardening (3) reported that in the 1978 Gallup poll of gardeners, the most frequently given reason for new gardeners becoming involved was “economic rewards.” However, their research indicated that people who start gardening for pleasure will stay with it longer than those who start for economic reasons. This is in keeping with the findings of Kaplan in 2 separate studies. The People/Plant Survey (unpublished, 1978) elicited nearly 4,300 responses from members of the American Horticultural Society. These people, who were dedicated gardeners, interestingly attributed considerably less importance to tangible benefits of producing one’s own food than to other benefits, such as personal satisfaction.

In an in-depth study of home, community and plot gardeners, Kaplan (7) found that the longer a person had been gardening, the less important tangible benefits of harvesting fruit, vegetables or flowers seemed to be. Thus, it would appear that while people are willing to pay more to be around plants and work better when they are, there are factors other than economic returns that motivate them to make a long-term commitment of their time and energy to plant culture.

Modifying physical aspects of the environment with plants

Plants may be used effectively to enhance temperature comfort in urban settings by modifying solar and infrared radiation patterns (5). However, social and psychological variables may play as important a role as physical and physiological variables in determining how comfortable a person perceives himself to be (5). For example, a sunbather may expect to be warm as a result of his activities. However, because one expects or wants the warmth integral to the activity, a feeling of perceived comfort inconsistent with the actual temperatures under different circumstances may be reported.

Closely linked to the passive benefits to be derived from the use of plants to change the physical environment are psychological benefits to the individual. According to Steinbrook (13), “Not only do man’s physical surroundings indicate how he feels about those surroundings, but they affect the way he feels about himself... An environment of ugliness, delapidation, dirtiness, overbuilt space and a lack of natural surroundings confirms the negative self-appraisal a person may have developed through other contacts with society.”

1Assistant Professor of Horticulture.
In the act of planting a garden or setting out trees, one discovers that, through one's own efforts, some control over environment can be obtained. This response has been particularly well recorded by inner-city gardening programs that have resulted in neighborhood clean-up projects as individuals discovered that their actions could change their surroundings (10).

Esthetic pleasures

The Nursery Market Council Survey (11) reported that appearance was the most important benefit from plants in the yard as indicated by 91% of the respondents. For this benefit, the consumer was willing to put forth a great deal of time, money, and energy.

Ulrich (14, 15) documented benefits of visual contact with vegetation that may have bearing on esthetic preference. In one study (14), individuals who felt stress were shown either slides dominated by vegetation or those of urban scenes lacking vegetation. Measurements were made of the individuals' emotional states prior to and immediately following the slide presentation. The results suggested that the stressed persons felt better after viewing the scenes containing vegetation. In contrast, the urban views tended to work against feelings of emotional well-being. In a second study (15), Ulrich measured alpha waves as an indicator of the individual's level of brain activity and feeling of wakeful relaxation. Results from viewing color slides that varied in terms of the presence of natural elements, clearly indicated that a positive influence or a feeling of emotional well-being was elicited by views dominated by natural elements. Ulrich suggests that the higher alpha waves under these conditions indicated an enhanced state of wakeful relaxation. An interesting extension of his work is a current study of the response of hospital patients to the view from windows overlooking trees and other vegetation; data are being collected in terms of recovery times and the intake of drugs associated with pain and anxiety (15).

Development of community spirit

According to Steinbrook (13) "An important destructive factor in crowded city residences today is the failure of the social organization of the people who live there." Community participation in urban tree planting is seen by Ames (1) as one mechanism for developing this social organization. Lewis (10) suggested that social interaction is an essential element resulting from the successful urban gardening projects sponsored by the housing authorities and extension service in many inner-city areas.

Working together on these projects, residents become known to each other in a situation that gains public recognition and self-esteem. Thus, they are encouraged to work together to make other contributions to their community. A sense of territoriality has been observed to develop as residents work with tree plantings (1, 10). As they make contributions to the community, it becomes theirs, at least in part, rather than solely the property of absentee landlords. From this, a sense of self-reliance and responsibility develops, encouraging neighborhood clean-up parties and the development of neighborhood protection societies.

Personal satisfaction

Fun and joy are given as the reasons for starting a garden by 26% of those surveyed by the National Association for Gardening (3). In the Nursery Market Council survey (11), 49% listed satisfaction and pride as overall benefits of plants in the yard, while 21% listed watching them grow and bloom.

In the People/Plant Survey noted above, 2 types of satisfaction derived from gardening ranked high among most gardeners: those involving the sensory perceptions and those involving novelty, such as growing new and unusual plants. The ability to keep things neat and tidy was important to some, particularly among the older gardeners.

Recreation

For many, natural settings and gardening provide an important recreational opportunity in the sense of "re-creation" or "renewal". Steinbrook (13) pointed out that the constant, overwhelming stimulation from cities results in people learning not to respond to their environment. Kaplan (8) theorized that the constant bombardment and resultant stresses of modern life can lead to fatigue of the mechanisms which make it possible for a person to suppress distraction. He further suggested that recovery can occur by avoiding circumstances that demand the individual assert voluntary effort to pay attention. Gardening and outdoor experiences have been identified as sources of fascination that provide opportunities for "involuntary attention," thus providing a healing rest from the efforts demanded by most daily activities (7, 8). Also, since this attention by its very nature excludes competing thoughts, it provides a rest from the daily worries so frequently occupying the mind. According to the People/Plant survey noted above, the most important satisfaction that participants reported deriving from gardening, entailed the peacefulness and tranquility that they found in the setting. Thus, both the setting and the active pursuit of plant culture appear to have components that aid in the recovery from daily stress.

Therapy

Horticulture has become widely accepted as a therapeutic modality in recent years. All of the benefits of plant proximity previously discussed provide elements through which horticulture is found to be therapeutic. Perhaps for most consumers, we could be speaking of horticulture as preventative medicine to reduce the stress, pollution, visual blight, alienation, boredom, and many other problems of daily life.

In addition, there are many ways in which horticulture can be used to overcome specific problems and help improve the life quality of an individual with problems. Relf (12) discussed the effectiveness of horticulture in enhancing communication in the treatment setting; its use in rehabilitation through integration of biological and psychological factors, its importance as a work substitute for those excluded from employment and its use in developing responsibility, creativity, and frustration tolerance.

Natural surroundings may have other dimensions as Steinbrook (13) has stated, "Moments of crisis are reduced to manageable dimensions when seen from the perspective of enduring nature."

Summary

The evidence suggests that the proximity of plants is important for maintaining the highest level of function for humans. Just as we evolved with plants in our environment, it may be part of our nature to continue this relationship with plants (2, 6). The evidence also strongly suggests that we, as horticulturists, are faced with exciting challenges and opportunities offered by the growth of this area (9). We can and should make major contributions to the research to better understand people/plant interaction. Sociologists, psychologists, geographers, and others are willing to look at the people component but they need horticulturists to understand the plant aspect and to direct the research toward the enhancement of people through horticulture.

Literature Cited

These statements lead to the same question for all interested rate), and the ways in which members of society adopt an innovation. Let us look at these recent theories and apply of a social system" (3). Cooperative Extension has been involved in spread to members of a social system" and an innovation is " any idea, practice or material object perceived to be new by the members of a social system" (3). Cooperative Extension has been involved in this type of transfer of information, attitudes and behavior for the last 67 years. Extension has examined and continues to examine the same processes as the diffusion of innovations model, for example, how long it takes innovations to spread through a system, (the diffusion rate), and the ways in which members of society adopt an innovation. These statements lead to the same question for all interested educators: How can we persuade the greatest numbers of people in the least amount of time?

In the early 1940s, field analyses of innovation campaigns flooded the literature (4), since various media tried to acquire mass audiences during these years. Also, direct mass media persuasion was viewed as an effective means to influence attitude, value and behavior (3). Concerning the first question, some individuals definitely are early adopters and others are late adopters. Members of society who are persuasive and influential are called social network opinion leaders (3). These individuals have more contacts, are better informed, and participate socially more than many of the individuals with whom they interact. Community leaders, if motivated, can become excellent change agents, especially in small communities. Their influence far outweighs the confines of the informal social group.

Other studies (2, 3) have identified adopter types in the target audience. The immediate adopters of innovations do not seem to influence many other community members. They are labeled nonconformists by the social group and they have diverse contacts rather than being involved in a close social network.

The next, somewhat slower group of adopters (usually about 13.5% of a community) commonly consists of respected, conforming members of social groups. They exert opinion leadership and influence the slower adopters, who constitute more than 75% of the population. Thus, advances in communicating can be made by using other individuals' abilities as internal change agents.

The source or the change agent will be most effective if he or she is perceived as: 1) credible, that is, knowledgeable and trustworthy; 2) attractive, that is, likeable, familiar, similar; and 3) concerned. If there is not trust, then the recipients will respond to the message with counter-arguments that may pertain to the character of the source. Advertising research has been very successful at ascertaining information about the values, desires and gratifications of a population in a market area, and then creating campaigns which zero in on these characteristics. Tailoring a message to an audience presupposes a knowledge of demographic factors, including sex, race, education, occupation, etc. Beyond this, the message must draw the attention of the audience, and it will have substantial impact only if it arouses or is accompanied by a high level of personal involvement (2).

The second and third points of the model — those that deal with communication channels — have been investigated most thoroughly. The mass media are clearly most effective at disseminating information, creating awareness, interest, salience (that is, attaching a level of importance to the innovation), and, under certain conditions, increasing informal interpersonal discussions about the innovations. The mass media have been poor at influencing attitudes, basic values, and behaviors; however, there are a few examples which show that media alone can create an atmosphere of behavior change, i.e., political advertising to change voting behavior. However, it is a well-accepted notion that interpersonal, face-to-face communication, particularly between close-knit members of a social group, is the most effective means to influence attitude, value and behavior (3).

CONSUMER HORTICULTURE: TRENDS IN PROGRAM DELIVERY

Mary Hotze Witt

Extension Specialist in Home Horticulture, University of Kentucky, Lexington, KY 40546

The unofficial beginning of Cooperative Extension is traced to 1903, Kaufman County, Texas when Dr. Seaman A. Knapp initiated demonstrations with Mexican boll weevil in cotton. Knapp once said, "What a man hears, he will not believe, what he says, he may believe, but what he does he must believe."

The basic objectives of all Cooperative Extension programs are the improvement of people’s incomes and their development. These objectives include the goal of encouraging families to best use the resources available to them. What better justification for home horticulture can we ask for? The Smith-Lever Act does not specify that extension work is to be conducted with farm families or even with rural families; however, the work historically has been conducted primarily with rural people. Now there is an increasing amount of urban and suburban participation, and some agents are being highly trained in special fields like home horticulture.

Communication and diffusion of innovations

Rodgers, a sociologist, wrote the classic Communications of Innovations (3), which paved the way for developing the recent theory of diffusion of innovations. Let us look at these recent theories and apply them to home horticulture communicators who work in Extension. Rodgers defined diffusion as "the process by which innovations spread to members of a social system" and an innovation is "any idea, practice or material object perceived to be new by the members of a social system" (3). Cooperative Extension has been involved in this transfer of information, attitudes and behavior for the last 67 years. Extension has examined and continues to examine the same processes as the diffusion of innovations model, for example, how long it takes innovations to spread through a system, (the diffusion rate), and the ways in which members of society adopt an innovation. These statements lead to the same question for all interested educators: How can we persuade the greatest numbers of people in the least amount of time?

In the early 1940s, field analyses of innovation campaigns flooded the literature (4), since various media tried to acquire mass audiences during these years. Also, direct mass media persuasion was viewed as a powerful force. The investigators sought answers to the questions: 1) Are particular individuals characterized more adventurously, that is, earlier adopters, and others characterized later adopters? 2) Which communication channels are most effective under given social and environmental conditions? 3) Which strategies are most effective for information dissemination and which are most effective for changing attitudes and behaviors? Much has been gleaned from the past 40 years of inquiry in this field. If we examine what is known about each element in the model we can get a feel for the state of the art.

Concerning the first question, some individuals definitely are early adopters and others are late adopters. Members of society who are persuasive and influential are called social network opinion leaders (3). These individuals have more contacts, are better informed, and participate socially more than many of the individuals with whom they interact. Community leaders, if motivated, can become excellent change agents, especially in small communities. Their influence far outweighs the confines of the informal social group.

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References