

# Atmospheric Effects on Shopping Behavior: A Review of the Experimental Evidence

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*This review focuses on the research conducted over the years on the effects of facility-based environmental cues, or "atmospherics", on buyer behavior. We review the pertinent literature by constructing a comprehensive table of the empirical studies in this area that focuses on the various findings associated with these investigations. This summary table indicates that atmospheric variables influence a wide variety of consumer evaluations and behaviors. In addition to discussing the findings and contributions of this literature stream, the article concludes by identifying gaps in the literature and suggesting potential future topics for atmospheric related research. J BUSN RES 2000. 49:193–211. © 2000 Elsevier Science Inc. All rights reserved.*

Although many articles that examine atmospheric effects on consumer behavior credit Kotler (1973) for initiating the literature stream, work in this area actually predated his article by almost 10 years. Although Kotler was the first to use and define the term "atmospherics" as the intentional control and structuring of environmental cues, several other researchers had manipulated elements in the environment in studies previous to Kotler's article (Cox, 1964, 1970; Smith and Curnow, 1966; Kotzan and Evanson, 1969; Frank and Massey, 1970; Curhan, 1972).

As this literature stream has evolved from these early articles, marketing researchers have come to the realization that if consumers are influenced by physical stimuli experienced at the point of purchase, then, the practice of creating influential atmospheres should be an important marketing strategy for most exchange environments. As noted in a more recent article written by Bitner (1990), such atmospheric planning can make the difference between a business success or failure.

Work in this area has proceeded using a variety of terms to describe these facility-based effects on consumers. The terms atmospherics, shelf space studies, environmental psychology, and servicescapes all have been used in the literature over the last 30 years of exploration and conceptual development in this literature stream.

## Theoretical Development

Bitner (1992) stated that "... in marketing there is a surprising lack of empirical research or theoretically based frameworks addressing the role of physical surroundings in consumption settings. Managers continually plan, build, and change an organization's physical surroundings in an attempt to control its influence on patrons, without really knowing the impact of a specific design or atmospheric change on its users " (p. 57).

Thus, to consolidate the knowledge gained in this area and to encourage additional research, this article presents a review of the literature stream that attempts to further the theoretical and empirical understanding of atmospheric influences on buyer behavior. Most recently, Spangenberg, Crowley, and Henderson (1996) noted that environmental psychology draws from the stimulus-organism response (S-O-R) paradigm. In this context, the atmosphere is the stimulus (S) that causes a consumer's evaluation (O) and causes some behavioral response (R) (Mehrabian and Russell, 1974; Donovan and Rossiter, 1982). The environmental psychology literature also indicates that shoppers respond to an atmosphere with one of two responses, approach or avoidance (Mehrabian and Russell, 1974). Approach behaviors are seen as positive responses to an environment such as a desire to stay in a particular facility and explore it. Avoidance behaviors include not wanting to stay in a store or to spend time looking or exploring it.

Studies of retail environments have manipulated a large

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number of atmospheric stimuli, such as color, music, and crowding, and noted their influence on evaluations (e.g. satisfaction and store image) and on a wide range of behavioral responses such as time spent in the environment, sales, and impulse buying.

Berman and Evans (1995) divide atmospheric stimuli or elements into four categories: the exterior of the store, the general interior, the layout and design variables, and the point-of-purchase and decoration variables. However, based upon the findings in the literature stream that we discuss in this article, the authors believe that a fifth category, human variables is needed to complete this typology. Table 1 provides a listing of the variables that comprise each of these five categories.

The preceding classification of atmospheric cues presented by Berman and Evans, and as revised by the present authors, represents an attempt to create some organized and logical structure to the study of atmospheric variables thought to influence consumer behavior. It is also an attempt to impose some managerial organization on atmospheric stimuli. This classification allows managers to begin to identify and tailor appropriate atmospheric elements in order to communicate a desired image or environment to a particular shopper segment or target market and induce a desired result from shoppers.

Thus, these atmospheric variables can be conceptualized as stimuli leading to some cognitive affect within the individual which, in turn, leads to some behavioral response. As discussed above, we have placed these stimuli into five basic categories as shown in Figure 1. This depiction is a slightly modified version of the original illustration used by Bitner (1992) and is used here to illustrate the way store atmosphere influences shopper behavior. Several factors in this figure are noteworthy. As can be seen, first, the physical environment interacts with the characteristics of individuals to determine their response. Therefore, an atmosphere that produces a certain response in one individual or group of people at a given point in time may produce an entirely different response in another individual or group. For example, an atmosphere that produces a positive response in teenagers may produce a negative response in older shoppers. Second, the store's atmosphere influences both the customers and the store's employees, who, in turn, through their interactions, influence each other. As can be seen from Figure 1, there are several possible responses exhibited by the customers that can work collectively or severally.

## The Purpose of this Synthesis

This article has a double purpose. First, we briefly review, then compare and contrast the body of knowledge on consumer-related atmospheric effects, which have been published in the extant marketing literature. Second, and of equal importance, we identify common methodologies, major findings, and gaps in the literature, which identify the opportunities for further

**Table 1.** Atmospheric Variables

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- |   |  |
|---|--|
| 1. External variables                         |  |
| a. Exterior signs                             |  |
| b. Entrances                                  |  |
| c. Exterior display windows                   |  |
| d. Height of building                         |  |
| e. Size of building                           |  |
| f. Color of building                          |  |
| g. Surrounding stores                         |  |
| h. Lawns and gardens                          |  |
| i. Address and location                       |  |
| j. Architectural style                        |  |
| k. Surrounding area                           |  |
| l. Parking availability                       |  |
| m. Congestion and traffic                     |  |
| n. Exterior walls                             |  |
| 2. General interior variables                 |  |
| a. Flooring and carpeting                     |  |
| b. Color schemes                              |  |
| c. Lighting                                   |  |
| d. Music                                      |  |
| e. P.A. usage                                 |  |
| f. Scents                                     |  |
| g. Tobacco smoke                              |  |
| h. Width of aisles                            |  |
| i. Wall composition                           |  |
| j. Paint and wall paper                       |  |
| k. Ceiling composition                        |  |
| l. Merchandise                                |  |
| m. Temperature                                |  |
| n. Cleanliness                                |  |
| 3. Layout and design variables                |  |
| a. Space design and allocation                |  |
| b. Placement of merchandise                   |  |
| c. Grouping of merchandise                    |  |
| d. Work station placement                     |  |
| e. Placement of equipment                     |  |
| f. Placement of cash registers                |  |
| g. Waiting areas                              |  |
| h. Waiting rooms                              |  |
| i. Department locations                       |  |
| j. Traffic flow                               |  |
| k. Racks and cases                            |  |
| l. Waiting ques                               |  |
| m. Furniture                                  |  |
| n. Dead areas                                 |  |
| 4. Point-of-purchase and decoration variables |  |
| a. Point-of-purchase displays                 |  |
| b. Signs and cards                            |  |
| c. Wall decorations                           |  |
| d. Degrees and certificates                   |  |
| e. Pictures                                   |  |
| f. Artwork                                    |  |
| g. Product displays                           |  |
| h. Usage instructions                         |  |
| i. Price displays                             |  |
| j. Teletext                                   |  |
| Human variables                               |  |
| a. Employee characteristics                   |  |
| b. Employee uniforms                          |  |
| c. Crowding                                   |  |
| d. Customer characteristics                   |  |
| e. Privacy                                    |  |
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research. Since our specific intent is to examine studies that experimentally manipulated atmospheric variables and gauged their effect of consumer behavior, several interesting and related research areas, such as retail image (c.f., Golden, Albaum, and Zimmer, 1987) and situational variables (c.f., Belk, 1975), were not discussed in this article.

## A Review of the Pertinent Literature

A summary table of the 60 published empirical studies of the influence of marketing atmospheres on consumers is presented in Table 2. Many of these are “shelf space” studies that are not commonly recognized as atmospheric studies in the literature reviews of articles in this literature stream. However, these studies examine variables such as shelf signs and merchandise arrangement, which are considered atmospheric elements in the atmospheric classification presented in Figure 1.

Table 2 indicates that the literature in this area is both very diverse and eclectic. In spite of the diversity in methodologies, it is important to note that each of these studies found some type of statistically significant relationship between the atmosphere and consumer behavior. In this section, we will provide a more in-depth discussion of some critical aspects associated with Table 2. Specifically, we will review the use of research designs, independent variables, and dependent variables that have been used to study the effects of marketing environments.

### *Independent Variables Based upon the Modified Berman and Evans Categories*

As a framework for examining the independent variables used by various authors in their experimental studies, we use the previously discussed modified version of the Berman and Evans (1995) approach to categorizing these atmospheric factors.

**EXTERNAL VARIABLES.** The external variables include the storefront, marquee, entrances, display windows, building architecture, the surrounding area, and parking. The research pertaining to this portion of a store’s atmosphere is extremely limited. There have been only four published articles that have examined the impact of the exterior of the store on buyer behavior. Ward, Bitner, and Barnes (1992) examined the prototypicality of a store design (the degree to which a store has attributes in common with other similar stores), Edwards and Shackley (1992) investigated the effects of exterior window displays, and Pinto and Leonidas (1994) studied the influence of parking and location on perceptions of quality. All three found that external variables have an influence on the behavior of retail consumers.

A different aspect of external variables was studied by Grossbart, Mittelstaedt, Curtis, and Rogers (1975) when they examined the impact of the external attributes of the macro-environment, in this case a shopping district, on shopper behavior. They found that “while customers form definite per-

ceptions of a large complex macroenvironment—these perceptions vary among individuals” (p. 291).

This portion of the environment deserves more attention in that the exterior is the first set of cues normally seen by a consumer. If these variables are not managed well, the rest of the atmosphere may not matter. These elements must be pleasing and induce approach behaviors for a retail store or service to be successful.

**GENERAL INTERIOR VARIABLES.** This category includes such variables as flooring/carpeting, lighting, scents and sounds, temperature, cleanliness, wall textures, and color usage. In contrast to the above discussion on exterior variables where there was very limited research, numerous studies were found that dealt with interior variables and on customer’s perceptions of these variables.

Overall perceptions of the general interior have been studied by Donovan, Rossiter, Marcolyn, and Nesdale (1994), Akhter, Andrews, and Durvasula (1994), Donovan and Rossiter (1982), Ward, Bitner, and Barnes (1992), and Grossbart, Hampton, Rammohan, and Lapidus (1990). All of these studies found that general perceptions of the interior influenced behavior. Taken together, these studies indicate that perceptions of the interior influence approach/avoidance, time spent in the environment, and sales.

A number of studies have examined the effects of different general interior variables. Music is the most commonly studied general interior cue (Smith and Curnow, 1966; Milliman, 1982, 1986; Andrus, 1986; Yalch and Spangenberg, 1988, 1990, 1993; Baker, Levy and Grewal, 1992; Areni and Kim, 1993; Chebat, Gelinas-Chebat and Filiatrault, 1993; Gulas and Schewe, 1994; Dubé, Chebat, and Morin, 1995; Herrington and Capella, 1996; Hui, Dubé, and Chebat, 1997).

Based upon the results of these articles, it appears that the music played in a store can have a significant impact on a variety of behaviors including sales, arousal, perceptions of and actual time spent in the environment, in-store traffic flow, and the perception of visual stimuli in the retail store. However, the impact of music can be mediated by age of the shopper (Yalch and Spangenberg, 1990; Gulas and Schewe, 1994), music tempo (Milliman, 1982, 1986), music volume (Smith and Curnow, 1966), music preference (Herrington and Capella, 1996) and by the use of background or foreground music (Yalch and Spangenberg, 1990, 1993; Areni and Kim, 1993). Another interesting finding of this area of investigation is that music can influence behavior even when consumers are not consciously aware of it (Milliman, 1982; Gulas and Schewe, 1994).

A general interior variable that is currently attracting some research interest is odor or aroma. Three recent studies have examined the effects of odor on shopping (Hirsch, 1995; Mitchell, Kahn, and Knasko, 1995; Spangenberg, Crowley, and Henderson, 1996). Interestingly, Mitchell et al. and Hirsch found that different types of odor significantly influenced behavior, while Spangenberg et al. found that the nature of

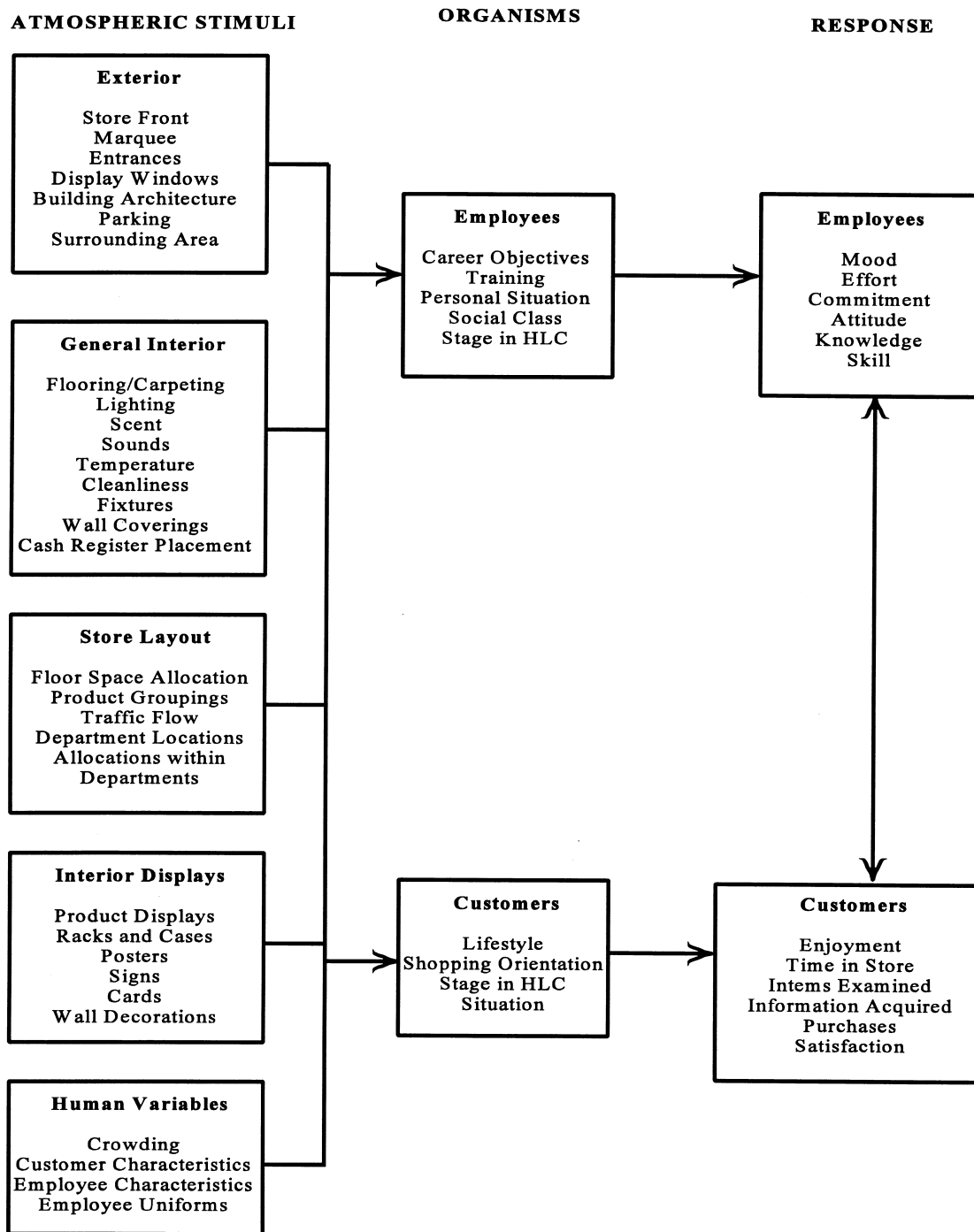


Figure 1. The influence of retail atmospherics.

the odor did not have an impact on consumer behavior but that the presence or absence of an odor did affect behavior. Together these studies also suggest that odor can influence sales, processing time, variety seeking behavior, and perceived time spent in a store.

Three laboratory experiments have examined the influence of color on retail shoppers. Color appears to influence simu-

lated purchases (Bellizzi and Hite, 1992), purchasing rates (Bellizzi and Hite, 1992), time spent in the store (Bellizzi and Hite, 1992), pleasant feelings (Bellizzi and Hite, 1992; Crowley, 1993), arousal (Crowley, 1993), store and merchandise image (Bellizzi, Crowley, and Hasty, 1983; Crowley, 1993), and the ability to attract a consumer toward a retail display (Bellizzi, Crowley, and Hasty, 1983).

The impact of lighting was examined by Areni and Kim (1994), Baker, Grewal, and Parasuraman (1994), and Baker, Levy, and Grewal (1992). These investigations suggest that lighting factors can influence both the store image and the examination and handling of merchandise. However, Areni and Kim (1994) also found that lighting levels did not influence sales.

**LAYOUT AND DESIGN.** Included in this category are variables such as fixtures, allocation of floor space, product groupings, traffic flow, department locations, and allocations within departments. To date, only three articles have studied the effects of these kinds of factors on shopping behavior.

Two of these studies (Iyer, 1989; Park, Iyer, and Smith, 1989) apparently used the same sample and examined the effects of store knowledge and time pressure on unplanned purchasing. These articles reported that unplanned purchases were higher in low knowledge, no time pressure conditions (Iyer, 1989). In addition, the data indicated that brand switching was most prevalent when store knowledge was low and subjects shopped under time pressure (Park, Iyer, and Smith, 1989).

In a different examination of the effects of layout and design, Smith and Burns (1996) studied the optimal use of a power aisle in a warehouse grocery store. A power aisle is used to display large quantities of a small number of products to create the impression that the products are offered at extremely low prices. They found that a configuration of smaller numbers of products at larger quantities conveyed lower prices than did having a greater variety of products with lower quantities.

**POINT-OF-PURCHASE AND DECORATION.** This category includes product displays, point-of-purchase displays, posters, signs, cards, teletext messages, and wall decorations. Table 2 identifies 14 empirical studies related directly to this retail environment classification.

A number of these studies dealt with the effects of shelf space (Cox, 1964; Kotzan and Evanson, 1969; Frank and Massey, 1970; Curhan, 1972, 1974; Chevalier, 1975; Patton, 1981; Wilkinson, Mason and Paksoy, 1982; Gagnon and Osterhaus, 1985; Bawa, Landwehr, and Krishna, 1989). The term “shelf space” is used in this article to describe studies that examine the effects of the amount of space allocated to a product, the effects of shelf location, or the effectiveness of a product display. Reviews of this literature stream have noted that the effects of shelf space and location on sales are “decidedly mixed” (Doyle and Gidengil, 1977) or “that there is a small, positive relationship between shelf space and unit sales. This relationship, however, is neither uniform among products nor across stores or intrastore locations.” (Curhan, 1973, p. 56).

Studies that examined the effects of product displays have generally found that a prominent display can significantly influence sales (Curhan, 1974; Chevalier, 1975; Wilkinson, Mason, and Paksoy, 1982; Gagnon and Osterhaus, 1985). In the most extreme example, Gagnon and Osterhaus (1985)

reported that a point-of-purchase display increased sales of an ointment 388% in supermarkets and 107% in pharmacies. Simonson and Winer (1992) noted that the way a product, in this case yogurt, is displayed (by brand or by flavor) also can have an impact on consumer choices.

The research on the effects of in-store signing tends to indicate that these signs can have an effect on retail shoppers. This is particularly true when signs are combined with sale price information (Chevalier, 1975; Woodside and Waddle, 1975) or a special display (Wilkinson, Mason, and Paksoy, 1982). However, McKinnon, Kelly, and Robison (1981) found that benefit signs are better than price-only signs at both sale and regular price. Patton (1981) reported that the amount of information in the sign can influence sales. He found that when products were of equivalent quality, consumers choose brands that provide the most information. When products are of unequal quality, however, a display containing only a limited amount of pertinent information generates the best decisions in terms of quality by of the chosen product.

**HUMAN VARIABLES.** This category includes customer crowding or density, privacy, customer characteristics, personnel/employee characteristics, and employee uniforms. As mentioned earlier, this is the environmental category that the present authors added to the Berman and Evans (1995) model. Human variables can be subclassified into two areas, the influence of other shoppers and the influence of retail employees on shopping behavior.

Much of the literature that has investigated the influence of other consumers as an environmental variable has centered on the crowding issue. Crowding in a retail store consists of two components, actual shopper density and perceived crowding (Harrell and Hutt, 1976). Bateson and Hui (1987) developed a model of crowding perceptions that suggests that some consumer control over the environment modulates the negative impact associated with crowding. Harrell, Hutt, and Anderson (1980) also found that the adaptation strategies a consumer used in periods of high perceived crowding influenced their shopping satisfaction. Eroglu and Machleit (1990) found that task-oriented shoppers perceived more crowding than nontask-oriented shoppers indicating consumer motives can influence crowding perceptions.

Research has tended to show that perceived crowding has a negative influence on consumer evaluations of the shopping experience. Crowding has a negative impact on satisfaction (Eroglu and Machleit, 1990), browsing and comparison shopping (Grossbart, Hampton, Rammohan, and Lapidus, 1990), number of purchases (Grossbart, Hampton, Rammohan, and Lapidus, 1990), postponed shopping (Grossbart, Hampton, Rammohan, and Lapidus, 1990), going to another store (Grossbart, Hampton, Rammohan, and Lapidus, 1990), shopping excitement (Wakefield and Blodgett, 1994), and quality perceptions (Wakefield and Blodgett, 1994).

The other category of human variables relates to the appearance of retail personnel. The appearance of retail employees



**Table 2.** Summary Table of Key Atmospheric Studies

Citation	Sample	Design	Independent Variables	Dependent Variables	Purpose/Findings
Cox (1964)	Actual supermarket shoppers	Latin squares	Shelf space Product categories	Sales	Explained the relationship between shelf space and product sales for four products (hominy, baking soda, Tang, and powdered coffee cream). Hominy was the only product that yielded significant increases in sales due to shelf space. The author concluded that shelf space influences sales of staple items but not impulse goods.
Smith and Curnow (1966)	1,100 Actual supermarket shoppers	Field experiment	Music	Sales Time Rating of loudness	Believed that time in store and sales would be adversely related to "loud" music. Time in store was significantly shorter in the "loud" condition, but total sales were not influenced by music loudness. However, sales per minute increased since customers spent less time in the store.
Kotzan and Evanson (1969)	Actual shoppers	Latin squares	Shelf facing Product type	Sales	Identified the optimal number of shelf facings for four drugstore products. A significant relationship between the number of shelf facings and sales.
Cox (1970)	Actual shoppers	Randomized block design	Shelf space Brand level	Unit sales	There is a significant relationship between shelf space and impulse products. Increasing shelf space for staple brands in not as effective.
Frank and Massey (1970)	Actual shoppers	Field experiment	Shelf rows Shelf level Store volume	Sales	Adding additional shelf rows in high volume stores is generally more effective than changing shelf level.
Curhan (1972)	Actual shoppers	Field experiment	Shelf space	Unit sales	Tested a model that hypothesized that several variables mediated the shelf space-unit sales relationship. Although shelf facing changes only explained 1% of variance, it does have significantly more impact on private brands than it does on national brands.
Curhan (1974)	Actual shoppers	Fractional factorial design	Display space Price advertising Display location	Sales	Tested the effects of the independent variables on four different product categories. Display space was the only variable significant for all four products.
Chevalier (1975)	Actual shoppers	Factorial design	Display price Competitive structure	Unit sales	Display is most effective for mature products, and product differentiation is low. No significant differences between sales increases for deep (12%) and threshold (6%) price cuts. Displays with price cuts are particularly effective.
Woodside and Waddle (1975)	Actual shoppers	Latin square design	Sign price	Units sold	Consumers responded to a point-of-sale advertisement by purchasing more units than they did when a price reduction was utilized. They also found a significant price and advertising interaction.

(continued)

Table 2. continued

Citation	Sample	Design	Independent Variables	Dependent Variables	Purpose/Findings
Grossbart, Mittelstaedt, Curtis, and Rogers (1975)	243 adults	Causal design	Pastoralism Urbanism Environmental adaption Stimulus seeking Environmental trust Antiquarianism Need privacy	Physical design Crowding	Tests the relationship between environmental predispositions and atmospherics. The results indicate that pastoralism and need for privacy are positively related to responsiveness to store atmospherics while urbanism, environmental adaption, stimulus seeking, environmental trust, and age are negatively related.
McKinnon, Kelly, and Robison (1981)	Actual shoppers	Randomized block design	Product type Price level Sign type	Sales	Significant interaction between price and sign type. At a regular price, a benefit sign works best. When on sale, either a price-only sign or a benefit sign are both effective; however, a benefit sign is more effective.
Patton (1981)	175 female homemakers	2 × 3 factorial design Lab experiment	Product quality Display type	Brand choice	When faced with equal quality, the majority chose brands with the most available information. When quality is unequal, the effects of information decrease. However, "market share" was higher for all products that had more extensive information.
Donovan and Rossiter (1982)	30 graduate business students	Descriptive	Pleasure Arousal Dominance Information rate	Approach-avoidance behavior intentions	Purpose was to test whether approach-avoidance behavior can be predicted from reported PAD emotional states inside a store and information rate. In pleasant environments, enjoyment, shopping time, and spending increases as arousal increases. Dominance does not appear to strongly influence in-store behavior.
Milliman (1982)	Actual supermarket shoppers	Field experiment	Music tempo	Traffic pace Sales volume Music awareness	Purpose was to test the effect of music and music tempo on traffic pace, volume, and music awareness in a supermarket. Music tempo is related to both traffic pace and sales volume but is not related to awareness.
Wilkinson, Mason, and Paksoy (1982)	Actual supermarket shoppers	Field experiment Factorial design	Price display advertising	Unit sales	Display and price changes had more effect on sales for the four products studied than advertising. A price X display interaction was also significant for two of the four products.
Bellizzi, Crowley, and Hasty (1983)	125 females	Laboratory experiment	Colors	Approach behavior Physical attraction Environment and merchandise perceptions	Colors do not influence approach behavior but are associated with physical attraction. The effect of color on perceptions of the environment and merchandise was mixed. People are drawn to warm colors, but they find them to be unpleasant.
Gagnon and Osterhaus (1985)	Actual shoppers	Field experiment	Floor display Type of store-within-store location	Sales	Collected sales data from 24 pharmacies and 24 grocery stores on the effects of pop displays. Pop displays increased sales of ointment by 388% in grocery stores and 107% in pharmacies.

(continued)

**Table 2.** continued

Citation	Sample	Design	Independent Variables	Dependent Variables	Purpose/Findings
Andrus (1986)	190 patients	Post-test only design	Waiting room Furniture Exam room equipment Office organization Temperature Music	Satisfaction	The purpose was to see whether dental patient satisfaction is influenced by the independent variables. They were not manipulated to test effects on satisfaction. Patients reported that organization, exam room equipment, and comfort of waiting room furniture influenced satisfaction. Patients may not have been aware of music and temperature.
Gardner and Siomkos (1986)	80 employees of a major corporation	2 × 2 factorial design	Verbal descriptions Method type (role play and third person)	Ratings Evaluations	Explored the use of an alternative methodology for atmospheric research by using verbal descriptions rather than performing field or laboratory experiments. Findings suggest that verbal descriptions can systematically influence perceptions.
Milliman (1986)	Actual restaurant patrons	Field experiment	Music tempo	Service time Customer time at table Customer groups leaving before seating Amount of food purchased Amount of bar purchases Gross margin Approach avoidance	Music tempo influences customer time at table, bar purchases, and gross margin. Music did not influence service time, leaving before being seated, or food purchases.
Bateson and Hui (1987)	30 British MBA students	Descriptive design	Dominance Arousal Pleasure Personal control Crowding Retail store		Crowding is perceived as an unpleasant experience in shopping and bank exchanges. Dominance is positively correlated with pleasure and personal control and is negatively correlated with crowding. Arousal was uncorrelated with any other variable.
Yalch and Spangenberg (1988)	86 shoppers	Field experiment	Department shopped Music variation Time shopped Shopper characteristics	Pleasure Arousal Dominance Money spent Music liking	Younger shoppers reported spending more time shopping when background music was played, while older shoppers perceived they spent more time in the store when foreground music was played. Musical conditions had significant effects on arousal but not on pleasure or dominance.
Bawa, Landwehr, and Krishna (1989)	597 coffee buyers	Descriptive design	Brand loyalty Promotion sensitivity Price importance New product trial Store type	Sales UPC scanner information	Consumers shopping in stores with larger assortments tend to be more sensitive to in-store promotions. Special displays work best in stores with larger product assortments and who use in-store promotions most frequently. Brand loyalty is lowest in stores with large assortments and high display activity.
Iyer (1989)	68 panel members	2 × 2 factorial design	Store layout Knowledge Time pressure	Unplanned purchases	Unplanned purchasing behavior is related to knowledge of the store environment and time pressure. Lower knowledge of the store environment influences higher unplanned purchases.

(continued)



Table 2. continued

Citation	Sample	Design	Independent Variables	Dependent Variables	Purpose/Findings
Obermiller and Bitner (1989)	39 undergraduate students	2 × 2 × 4 factorial design in a lab	Atmosphere favorability Involvement Product	Product evaluation	For involved shoppers a favorable atmosphere resulted in lowered evaluations relative to an unfavorable atmosphere. The retail atmosphere should be pleasant, but it should not detract from the merchandise.
Park, Iyer, and Smith (1989)	68 panel members	2 × 2 factorial design	Store layout knowledge Time pressure	Unplanned purchases Brand switching Purchase volume	Both store knowledge and time available for shopping influenced unplanned brand switching and purchase volume. Consumers who shop in the condition of low store knowledge and the pressure switch brands due to inability to find their preferred brand.
Ward, Bitner, and Gossett (1989)	15 marketing students	Word associations	Organizations Attitude toward students Work habits Ability/knowledge Personal traits Appearance of office	Specific associations	Examined aspects of professional service environments that communicate information on service delivery. The authors used marketing professors as a service and developed a methodology (SEEM) for attaching meaning to aspects of a service environment.
Bitner (1990)	145 travelers	Factorial design	Organization Explanation Offer to compensate	Disconfirmation Attribution Satisfaction Intended behaviors	Environment influences attributions when service failure occurs. Subjects in the organized travel agency condition were less likely to expect the failure to occur again.
Eroglu and Machleit (1990)	112 adults	Lab experiments	Retail density Shopping motives Perceived risk Time pressure	Crowding preceptions Satisfaction	Density does increase perceptions of creating and task-oriented shopping and greater perceptions of crowding than nontask-oriented shoppers perceived risk and the pressure intensify perceptions of mental crowding only in high-density conditions. High mental density and lower pressures lead to reduce satisfaction.
Yalch and Spangenberg (1990)	Actual department store shoppers	Field experiments	Music Age	Mood Impulse behavior Time perceptions Music liking	Customers preferred foreground to background music across age groups. Younger shoppers reported increased time in the store with background music, while older shoppers reacted this way to foreground music. When purposefully shopping, shoppers made fewer impulse purchases with foreground music. Shopping behavior and music have a complex interaction.
Hui and Bateson (1991)	115 British adults	Factorial design	Consumer density Choice Service setting	Perceived choice Perceived control Perceived crowding Pleasure Approach-avoidance	Perceived control can be used to explain the effects of consumer choice and consumer density on the emotional and behavioral outcomes of the service encounter. Choice mediates the influence of density on perceived crowding. This study used slides to represent the environment of a bank and a bar.

(continued)

Table 2. continued

Citation	Sample	Design	Independent Variables	Dependent Variables	Purpose/Findings
Baker, Levy, and Grewal (1992)	147 undergraduate students	Factorial design	Ambient levels Social levels	Willingness to buy Arousal Pleasure	Used videotapes to measure ambient variables (music and lighting) and social levels (retail salespeople) on consumers. Found that social factors influenced arousal and that social-ambiance interaction occurred for pleasure and willingness to buy.
Bateson and Hui (1992)	123 British residents and 92 British railway passengers	Laboratory experiment and a field quasi-experiment	Density Choice scenario Camera type Actual setting	Perceived control Perceived crowding	The purpose was to test the use of two environmental simulations (photographic slides and videotapes) with actual field perceptions. The authors found that video representations can be used for valuables that lend themselves to visual representation.
Bellizzi and Hite (1992)	70 adult women 107 undergraduate students	2 × 2 factorial design	Color	Purchase rates Shopping time Purchase intentions Approach-avoidance intentions	Conducted two simulation experiments to test the effects of the store color (blue versus red) to induce feelings or moods and purchase intentions. Consumers react more favorably to a blue environment. Also, the blue store resulted in higher simulated purchase rates. Color effects were more strongly linked to pleasure than they are arousal and dominance.
Edwards and Shackley (1992)	250 city shoppers	Descriptive	Window display	Sales Recall	Sales increase when window displays are used, particularly for new products. Well-known brand needs are also effective elements of a display window. Recall of window information varies by design and colors used in the display.
Ward, Bitner, and Barnes (1992)	86 undergraduate students	Descriptive correlations	Family resemblance Exterior family resemblance Interior family resemblance Typicality Attitude Frequency of instantiation Market share	Attribute resemblance	Applies family resemblance approach to studying how retail environments are perceived and the relation of these perceptions to typicality. Environmental features are very important in the categorization of retail store. They found that the extensive strongly influences perceptions of the store.
Areni and Kim (1993)	Actual shoppers	Field experiment	Music Gender Customer type Age	Info search Purchase behavior Consumption behavior Time spent shopping	Studied the differing effects of classical and top 40 music on wine shoppers. Classical music resulted in significantly higher sales because "classical music led them to buy more expensive items."
Crowley (1993)	100 females	Laboratory experiment	Four colors (red, yellow, green, and blue)	Environmental quality scale	Factor analysis of the environmental quality scale produced two color-related factors, an activation dimension and an evaluation dimension. The activation component within subjects response to color exhibits a U-shaped pattern across wavelengths. Also, the evaluation dimension exhibits an increasingly linear trend as evaluations move from longer to shorter wavelengths.

(continued)

Table 2. continued

Citation	Sample	Design	Independent Variables	Dependent Variables	Purpose/Findings
Chebat, Gelinat-Chebat, and Filiatrault (1993)	427 undergraduate students	2 × 3 factorial design	Visual stimulation Music tempo	Attention level Mood Time estimation	The authors hypothesized that mood and attention mediated the relationship between musical and visual cues and time perceptions. They found that music affects the dependent variables; however, it mainly affected them as moderator. Music detracts from the effects of visual stimuli in a retail atmosphere.
Yalch and Spangenberg (1993)	Actual shoppers	Field experiments	Music Department Time of week Age Gender Musical preference Group size	Music perceptions Mood Shopping behavior Merchandise perceptions Store perception	Overall, the effects of the type of music played were negligible. However, music effects tend to vary by the type of shopper and by department. Younger males liked foreground music; older females liked background music.
Akhter, Andrews, and Durvasula (1994)	209 students 160 students	Factorial design	Store favorability Product type	Brand beliefs Brand attitude Brand evaluation Purchase intention	Reports results of two related experiments. Brand-related judgements are more positive when evaluated in a favorable store compared with an unfavorable store. This relationship held across all three products (beer, watches, and TVs), except for purchase intentions of beer, which were not influenced by store favorability.
Areni and Kim (1994)	171 actual shoppers	Field experiment	Customer type Lighting	Number of items examined Number of items handled Shelf level Sampling behavior Amount of time spent Total sales	Lighting influenced number of items examined and handled. A lighting shelf level interaction was significant, but lighting by customer type was not. A main effect for customer type was, however, significant. Brighter stores cause more handling and examination but do not influence sales or time spent in the store.
Baker, Grewal, and Parasuraman (1994)	297 undergraduate students	2 × 2 × 2 factorial design	Ambient factors Design factors Social factors	Merchandise quality Service quality Store image	This study combined several related atmospheric variables together to note the effect of these categories of variables on merchandise quality, service quality, and store image. Ambient and social factors have greater influence than design factors on service and merchandise quality perceptions and on store image.
Donovan, Rossiter, Marcoolyn, and Nesdale (1994)	60 18–35-year-old females	Field study	Pleasure Arousal	Unplanned time Unplanned purchases	Pleasure is significantly associated with extra time and unplanned spending in pleasant atmospheres but not when the atmosphere is unpleasant. Higher arousal reduces unplanned spending in unpleasant atmospheres, but arousal is not significant in pleasant atmospheres.
Gulas and Schewe (1994)	76 supermarket shoppers	Field study	Music style	Time spent shopping Store attributes Emotions Items purchased Amount spent	This study explained age-linked music effects on shopping behavior. Baby boomers reacted stronger by purchasing more in classic rock conditions than older consumers did to big band music. However, 66% of the sample could not recall the music that played when they shopped.

(continued)

Table 2. continued

Citation	Sample	Design	Independent Variables	Dependent Variables	Purpose/Findings
Machleit, Kellaris, and Eroglu (1994)	76 undergraduate students 140 bookstore shoppers 232 discount store shoppers	Lab experiment Field experiment Field experiment	Crowding	Perceived crowding Satisfaction Crowding expectations	Tested alternative perceived crowding scales in laboratory and field studies. In a lab situation, the authors found crowding to be negatively related to shopping satisfaction. In the field studies, there was no significant correlation between crowding and satisfaction. The authors concluded that consumers have expectations about the conditions they will face when they go shopping. These expectations may be missing in laboratory experiments.
Pinto and Leonidas (1994)	120 parents of child patients	Descriptive	Cleanliness Parking Convenience Privacy Office condition Size of waiting room Temperature Decorations Stadium videotapes	Facility satisfaction Overall satisfaction with care provided	This study compares patient attitudes associated with an "old office" and a "new office." Satisfaction with the facility increased, but overall satisfaction with the service did not. However, the subjects were very satisfied with service in the old office, which left little room for improvement.
Wakefield and Blodgett (1994)	Junior and senior students	Lab experiment	Quality Decorative style	Perceived quality Perceived satisfaction Repatronage	The authors examined the servicescape quality-satisfaction-repatronage relationship by using videotapes of two major league baseball stadiums. They found that different atmospheres do tend to affect perceptions of quality and satisfaction and future purchase intentions.
Ward and Eaton (1994)	Information not available	2 × 2 factorial design	Quality Decorative style	Emotions Competence Expectations	Decorative style and quality function as a cue to competence in service providers and also to evoke strong emotions in subjects. Different styles of environments, even when both are organized and of high quality, influence attribution of blame for service failure.
Chebat, Gelinias-Chebat, Vaninsky, and Filiatrault (1995)	155 Canadian undergraduate students	Laboratory experiment	Mood Manipulation Pleasure Arousal Dominance	Time estimate Waiting time acceptable Memorization	Mood had no effect on perceptions of waiting time. Pleasure is the component of the mood scale that had the most direct effects on approach-avoidance.
Chebat, Filiatrault, Gelinias-Chebat, and Vaninsky (1995)	162 undergraduate students	Laboratory experiment	Mood Manipulation Videos	Pleasure-arousal-dominance Perceived quality Attribution	Respondents were exposed to a waiting video and one of two mock manipulation videos gauge the effect of waiting attribution on mood and service quality. Mood does not influence the attribution process, but mood and attribution affect perceived quality.
Dubé, Chebat, and Morin (1995)	270 undergraduate French-Canadian students	Laboratory experiment	Pleasure Arousal	Desire to affiliate Retrospective thought Listing	Found main effect and interactive effects of music-induced pleasure and arousal on consumer's desire to affiliate with bank personnel. Music does appear to influence buyer-seller interactions.

(continued)

Table 2. continued

Citation	Sample	Design	Independent Variables	Dependent Variables	Purpose/Findings
Hirsch (1995)	Actual gamblers	Field experiment	Ambient odors	Amount gambled	Tested the effects of two ambient odors on the amount taken in by slot machines in a Las Vegas casino. One odorant significantly increased the amount gambled while the other did not. The effective odorant apparently enhanced the gambling mood of casino patrons.
Mitchell, Kahn, and Knasko (1995)	155 university students	Laboratory experiment	Ambient odor Product type	Memory Information search Choice Variety seeking Price perceptions	Explored the effects of congruent and incongruent odors on purchase behavior. The results indicate that congruent odors increase processing time, holistic processing, self references, and variety-seeking behavior.
Smith and Burns (1996)	380 grocery store shoppers	Field experiment	Power aisle composition		Increasing the number of SKUs in a power aisle and decreasing the quantity of each item led to the perception of higher prices in that power aisle.
Spangenberg, Crowley, and Henderson (1996)	308 undergraduate students	2 × 3 laboratory experiment	Scent affect Scent intensity	Evaluations of the store Evaluations of the store environment Evaluations of the merchandise Evaluations of specific products Intentions to visit the store Purchase intentions for specific products Actual versus perceived time spent Number of products examined	The presence or absence of a scent affects both evaluations and in-store behaviors. However, particular accents or scent intensity did not dramatically affect the results. Subjects in scented conditions perceived that they spent less time in the store than they actually did, while those in an unscented conditions perceived they spent more time in the store than they actually did.
Hui, Dubé, and Chebat (1997)	116 Canadian undergraduate students	Laboratory experiment	Pleasurable music	Time estimation Emotional evaluation of the environment Emotional response to waiting Recommendation of the service	Tested the effects of pleasurable and now pleasurable music on the four dependent variables. Their results indicated that music produces significant effects on all four dependent variables and that those effects are moderated by whether consumers like to dislike the music. Pleasurable music produced longer perceived wait duration.

is critical since it can be used to communicate a firm's ideals and attributes to consumers (Solomon, 1985). In a quantitative study, Bitner (1990) found that a disorganized environment, which featured an employee in less than professional attire, can influence a customer's attribution and satisfaction when a service failure occurs. The effects of social cues (number/friendliness of employees) was investigated as a part of a study conducted by Baker, Levy, and Grewal (1992) in which they found that the more social cues present in the store environment, the higher subjects' arousal. A subsequent study conducted by Baker, Grewal, and Parasuraman (1994) examined the effects of sales personnel wearing aprons and greeting customers on the perceptions of service quality in a retail setting. It was found that the store with the prestige-image social factors (more sales personnel on the floor, wearing aprons, and greeting customers) were perceived as providing of higher service quality than did the store with the discount-image social factors (one salesperson on the floor, wearing no apron, and not offering a greeting).

### **Dependent Variables**

Atmospheric effects also have been measured on a wide variety of different dependent variables over the last 30 years of research, including some studies that used multiple dependent variables. However, sales, time in the environment, and approach-avoidance behavior have been the most widely examined dependent variables in experimental studies of the retail atmosphere.

Of these three, sales and/or purchase behavior has been the single most widely studied dependent variable in this research stream. Table 2 includes 28 studies that have investigated atmospheric effects on sales, purchase behavior, or impulse buying. Many of these studies occurred relatively early in the investigation of atmospheric effects, including the first 10 studies described in Table 2. Of these 28 studies, 25 found that atmospheric variables had some significant influence on consumer sales. The only exceptions were two shelf space studies, Smith and Curnow (1966) and Curhan (1972), and Areni and Kim's (Areni and Kim, 1994) lighting experiment. Based upon the accumulated evidence it appears that the retail environment can exert a strong influence on sales and consumer purchasing behavior.

The second dependent variable that has received enough attention from researchers to merit discussion is the atmosphere's influence on time spent in the store. Sixteen studies have manipulated environmental variables and explicitly measured either the time consumers spent or their perceptions of the time they spent in retail environments.

Nine of the sixteen studies investigated music's effect on actual rather than perceived time spent in the environment. When viewed as a group, these nine studies yield conflicting results. Smith and Curnow (1966) found music volume influenced time spent in the store, Milliman (1982, 1986) reported that music tempo had an effect on time spent, and Yalch and

Spangenberg (1988, 1990, 1993) found that age mediated the effect of music style on time spent in an environment. Gulas and Schewe (1994) and Areni and Kim (1993) found that music style did not influence time, while Herrington and Capella (1996) found no relationship between time and music tempo.

However, variables were operationalized differently in the above studies that reported different findings. It appears that some differentiations in music styles produce differences in time spent in the store while others do not. Yalch and Spangenberg (1988, 1990) operationalized music style as either foreground (music with vocals) or background (instrumental music) and Yalch and Spangenberg (1993) used foreground, background, and new age Music as different music styles. Gulas and Schewe (1994) manipulated music style by using big band and classic rock, while Areni and Kim (1994) used classical music and top 40.

Differences in levels of a particular parameter also occurred in these studies. For instance, Milliman (1982, 1986) used different numbers of beats per minute for the low and high conditions, 73 and 94, than Herrington and Capella (1996), 60 and 104. Additionally, Milliman's second study was performed in a restaurant setting. In the two supermarket studies, time spent in the environment was also operationalized differently. Milliman (1982) noted the time it took customers to pass between two designated points in the supermarket, while Herrington and Capella noted the time between when a shopper entered the selling area and when he/she arrived at a checkout line.

In addition to music, other variables associated with time spent in a store are color (Bellizzi and Hite, 1992) and pleasure (Donovan, Rossiter, Marcolyn, and Nesdale, 1994). However, Areni and Kim (1994) found that lighting did not influence time spent in the store.

Based upon these differing findings and variable operationalizations, it appears that the relationship between time spent in the retail environment and atmospheric variables is both complex and not universal. It appears that some environmental stimuli affect time perceptions while others do not. Also, researchers are cautioned to be careful when choosing treatment levels since different operational definitions have produced inconsistent findings.

The third dependent variable that has been used in sufficient studies to merit discussion is approach-avoidance behavior. Table 2 indicates that eight studies have used approach-avoidance as a dependent variable. Mehrabian and Russell (1974) posited that three emotional states mediated approach-avoidance responses to an environment. These were pleasure (the degree to which a person felt happy or satisfied in a place), arousal (the degree of stimulation caused by an atmosphere), and dominance (the degree to which a person feels in control in a situation). Donovan and Rossiter (1982) found that dominance does not strongly affect in-store behavior. However, these findings may be context and independent



variable specific. Bateson and Hui's (Bateson and Hui, 1987) findings suggest that dominance is correlated with pleasure and personal control and is negatively correlated with crowding. Similar results were found in a subsequent crowding study (Hui and Bateson, 1991). However, in a music study Yalch and Spangenberg (1988) found that arousal was significantly affected by environmental music conditions but that pleasure and dominance were not, and Chebat, Gelinas-Chebat, Vaninski, and Filiatrault (1995) found that pleasure had the strongest influence on approach-avoidance behaviors.

Other approach-avoidance studies have examined responses to color (Bellizzi, Crowley, and Hasty, 1983; Bellizzi and Hite, 1992), music, lighting, and retail salespeople (Baker, Levy, and Grewal, 1992), and waiting attribution and mood (Chebat, Filiatrault, Gelinas-Chebat, and Vaninsky, 1995). Although the findings in this area appear to be context specific, it clearly appears that retail environments exhibit a strong influence on consumers' approach-avoidance behavior.

## Suggestions for Future Research

Based upon this review of the literature, we have a number of suggestions for future research. First, we will discuss atmospheric variables that deserve further examination and then follow this with a discussion of methodological issues associated with researching atmospheric effects.

### *Atmospheric Variables*

When the preceding review of the literature is examined relative to the modified Berman and Evans (1995) classification presented in Table 1, a number of suggestions for future research become apparent. The following sections describe work in each of these five areas that marketing researchers could target for further expansion of atmospheric knowledge and concludes with a discussion of some additional research questions that could be addressed.

**EXTERIOR VARIABLES.** Since Table 2 describes only four empirical studies that have explicitly examined exterior influences, this category of variables is ripe for further investigation. These variables are particularly important since the exterior of a marketing facility (e.g. retail store, restaurant, etc.) must be considered acceptable before the interior of the building is ever experienced. Research on exterior building shape and characteristics, such as colors and architectural style, and the effects of exterior landscaping and signage are particularly called for since so little is known about these variables at present.

An interesting study of the exterior influences of a store would be to gather data on consumer perceptions of two outlets from the same chain in the same city where each is placed in different types of retail locations (i.e., downtown versus strip center). Approach-avoidance variables in this

study might yield interesting insights on the effect of exterior variables on shopping behavior.

**GENERAL INTERIOR.** Although music has been widely studied, many of the other variables in this category have not received the attention they probably deserve. For an example, scents or ambient odors have been the focus of three recent studies but deserve more attention. Since two of these studies took place in an artificial laboratory situation (Mitchell, Kahn, and Knasko, 1995; Spangenberg, Crowley, and Henderson, 1996) and the other in a gambling casino (Hirsch, 1995), little is known about the generalizability of effects associated with this variable into traditional retail contexts.

However, the study of olfactory-related behaviors in a retail context could yield interesting findings and insights. The effects of the smell associated with bread baking in supermarkets on sales and/or pleasure and arousal is an example of the kind of research that could be conducted in this area. Other studies might address whether different segments of consumers exhibit different behavior when exposed to particular ambient odors. Finally, studies may address different kinds of odors those that have been previously studied.

Tobacco smoke is a general interior variable that is both currently relevant and deserving of future atmospheric research attention. Although a number of recent studies have explored the link between tobacco and marketing, tobacco smoke as an atmospheric variable has not been examined yet. The effects of tobacco smoke on approach-avoidance behavior are a particularly relevant topic for researchers to address.

Although Bellizzi, Crowley, and Hasty (1983), Bellizzi and Hite (1992), and Crowley (1993) found that color influenced the behavior of retail shoppers, all three of these investigations took place in a simulated environment by using laboratory designs. This means that the opportunity for a field study that yields information about actual consumer perceptions of retail color remains as an attractive research opportunity. Furthermore, while there are some industry proprietary studies that investigated the effects of floor coverings on perceptions, there is no published empirical work using various floor coverings (e.g. carpet thickness, carpet versus tiled, versus vinyl, etc.) as the independent variable.

**LAYOUT AND DESIGN VARIABLES.** Although a number of the studies described in Table 2 examine shelf space decisions, this category of variables also has a number of research gaps that offer many interesting research opportunities. In particular, store layout options should be examined to study their effects on time spent in the environment, crowding perceptions, and sales.

Fast food restaurants, for example, have several different layout options. Some use queues where consumers funnel down into service personnel from a single line (i.e., Wendy's) while others have multiple waiting lines that form in front of whichever cash registers are in use at that time (i.e., McDonald's). The same number of consumers waiting to be served

will result in a longer line in the first situation than in the second. A research question that could be addressed is, do these alternative waiting strategies influence perceptions of crowding and/or approach-avoidance behavior?

This is also an area that service researchers could investigate since the layout designs used by services are often vastly different from those used by merchandise oriented retailers. Andrus (1986) did not manipulate waiting room furniture but reported that respondents indicated that it did influence their satisfaction with dental services. Gathering data both before and after the redecoration of a waiting room for a professional service might yield some interesting insights on the effect of a facility on service encounters.

**POINT-OF-PURCHASE AND DECORATION VARIABLES.** Some of the "shelf space" studies described in Table 2 have incorporated variables such as point-of-purchase displays and interior signs in supermarkets and pharmacies. Future studies of the atmospheric influences in services might consider the effects of artwork, degrees, and certificates on consumer's perceptions of the service environment.

Other work in this area might consider the effects of more recent technological innovations, such as teletext and interactive displays, on sales and time spent in the establishment. Some supermarkets have installed TV sets in the checkout areas for consumers to watch as they wait in line. A future study might explore the effects this has on perceptions of time spent in the store and satisfaction with the retail environment.

**HUMAN VARIABLES.** As Figure 1 indicates, the human variables category in the modified Berman and Evans classification is comprised of consumer, employee, and privacy influences on atmospheric perceptions. In the only study that explicitly addresses privacy issues, Grossbart, Hampton, Rammohan, and Lapidus (1990) concluded that privacy is significantly related to atmospheric responsiveness. However, this study asked consumers about retail stores in general rather than about a specific type of store. Future research might focus on identifying types of shopping activities where privacy is more or less important to consumers.

The preponderance of work in this area has explored consumer perceptions of crowding. Most studies in this area have found that consumer crowding has a negative influence on atmospheric perceptions (e.g., Hui and Bateson, 1991). However, are there situations where high levels of crowding is perceived as positive influence on perceptions of the atmosphere? In some situations (i.e., bars and dance clubs) consumer crowding may be part of the attraction for entering the establishment. Also, are there latitudes for acceptance associated with retail crowding? Are there situations in retail stores when consumers perceive that there are not enough people in the store, and other situations when they feel too many are there? Are these latitudes of acceptance influenced by retail store type and/or social/cultural norms?

Less attention has been given to the role employees play in influencing atmospheric perceptions. Although Bitner's

(Bitner, 1990) study did not explicitly address employee characteristics, the photograph of employees used in the organized and disorganized office conditions varied somewhat in clothing as well. Solomon (1985) hypothesized that employee apparel and uniforms have symbolic meaning to consumers and may have both credibility and aesthetically oriented dimensions. However, this dimension of the retail environment to date has not been quantitatively explored by consumer researchers.

**OTHER RESEARCH ISSUES.** In addition to the gaps in the research of environmental stimuli that are described above, there are a number of other issues that research could address. This section describes some of these gaps in the literature.

There is a strong need for additional theory development in this area. This review of the literature indicates that atmospheric effects exist, but there has not been enough effort devoted to explaining, predicting, and controlling the behavior of consumers. Much of the research that has been performed in this area has been atheoretical descriptions of effects. Are there theories beyond the S-O-R paradigm and approach-avoidance that can be used to explain and predict the behavior of consumers to environmental conditions? For example, the present state of theory development does not help in predicting whether the same color used on the exterior and in the interior of a store should have the same effect on consumers. There is also a need for a more "macro" level theory that would explain how consumers process the entire atmosphere, which can often send competing or deviant signals, and form some evaluation of it. Although the research to date has isolated the effects of particular environmental stimuli, there is not much understanding of which elements in the retail atmosphere are most salient to consumers when forming an approach-avoidance evaluation.

Another unanswered question is how can the retail environment be used as a segmentation tool? Research in this area has shown that consumers of different ages react differently to music in retail environments (Yalch and Spangenberg, 1988, 1990), but other segmentation variables also need to be studied to see if other segmentation variables mediate the effect of the retail environment. For example, is there a difference in the way Caucasians, Hispanics, and African-Americans perceive a retail or service environment? Is there a gender difference in the perception of, and response to, certain atmospheric cues, such as colors or music? Are there different geographic-based atmospheric orientations that might cause a consumer in New England to perceive the same store differently from a shopper in the Southwestern region of the United States?

Although we know from strolling through almost any mall that retailers design different retail environments for different types of consumers, the published work in this area has not explored how the atmosphere should be manipulated or developed for different market segments. Our understanding of the effects of a consumer's subcultural or cultural influences on the perception of, and expectations for, a marketing environment is relatively undeveloped at this time.

## Managerial Implications

In their landmark article, Smith and Curnow (1966) wondered if their research had any implications for retail managers. After 30 years of research, the answer is now an obvious yes. The accumulated evidence as reviewed in this article clearly shows that retail consumers can be induced to behave in certain manners based upon the atmosphere created by retail management. Although the days have long passed since major retailers made casual decisions about store layout and design issues, many medium and smaller retailers still make arbitrary decisions about the environments they create. Those retailers making arbitrary choices about store environments need to become more formalized in their decision making.

Reactions to retail environments, however, are not universal. Different categories of consumers appear to behave differently when presented with the same atmospheric stimulus. Research shows that reactions to environmental music apparently varies by age (Yalch and Spangenberg, 1988, 1990; Gulas and Schewe, 1994) and by gender (Yalch and Spangenberg, 1993). Although other variables have not been tested across shopper categories other differences are likely to be found. Therefore, retail environments should be crafted with a particular consumer in mind. This probably means that smaller specialty stores, usually aimed at narrower target markets are more likely to be able to induce more consistent behavior from consumers.

Another interesting managerial implication to this stream of research is the finding that consumers may not always be aware of particular facets of the retail atmosphere, even when it is influencing their behavior (Milliman, 1982; Gulas and Schewe, 1994). These findings suggest that particular elements of the atmosphere do not always have to be blatant to have an effect on consumers. Sometimes, understated and subtle changes to the retail environment are all that is required to change how shoppers behave inside a store.

Finally, retail managers learn very early in their management training programs that the bottom line for most decisions in retailing is sales. Earlier, we noted that 28 articles cited in this review examined the effect of the atmosphere on sales, and that 25 of them found some significant relationship between the environment and customer purchasing behavior. These studies also show that this relationship occurs across a number of different types of retail stores and situations. Although there may be some debate about whether the atmosphere can influence time spent in an environment, there is enough evidence to be able to clearly state that the atmosphere has an effect on consumer spending and that variations of atmospheric variables affect the amount of money people spend and the number of items they purchase.

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