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Stephani K. A. Robson
Cornell University, skr4@cornell.edu

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Turning the Tables: The Psychology of Design for High-Volume Restaurants

Abstract

The use of colors, sounds, sights, and smells can be applied to restaurant settings to encourage a high customer volume and fast table turns.

Keywords

facilities planning, interior design, high-volume restaurants, consumer volume, psychology, table turns

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Turning the Tables

The Psychology of Design for High-volume Restaurants

by *Stephani K.A. Robson*

The use of colors, sounds, sights, and smells can be applied to restaurant settings to encourage a high customer volume and fast table turns.

Most observers would say that chain restaurants are in the business of selling food. A strong counterargument is often made that these restaurants sell experiences, that food plays an important but by no means the only part. From the restaurateur's viewpoint, however, a restaurant's true inventory is the availability of a seat for the duration of the meal experience.¹ To be able

¹ Sheryl E. Kimes, Richard B. Chase, Sunmee Choi, Philip Y. Lee, and Elizabeth N. Ngonzi, "Restaurant Revenue Management: Applying Yield Management to the Restaurant," *Cornell Hotel and Restaurant Administration Quarterly*, Vol. 39, No. 3 (June 1998), pp. 32-39.

Stephani K.A. Robson is a lecturer in property-asset management at the Cornell University School of Hotel Administration «skr4@cornell.edu», where she received her undergraduate degree. She recently earned a Master of Science degree in human-environment relations from Cornell.

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to increase the volume of sales, one needs to expand that inventory by increasing the number of available seats. Owing to the physical constraints of most restaurants, adding seats is not feasible. That leaves only one good way to increase inventory: turning tables more rapidly.

Methods of increasing service efficiency and thus increasing seat turnover have been explored in depth.² Improved server training is one popular approach;³ another is using operations engineering techniques to identify and correct service bottlenecks.⁴ But little attention has been paid to the power of the restaurant environment itself to contribute to table turns.

The young field of environmental psychology offers a growing body of research and theory that can be applied to making restaurants more effective and efficient. This paper presents a summary of how consumers manage and apply their perceptions of environments, notes some key environmental-psychology findings, and outlines ways that chain restaurants can apply the findings, citing examples from successful chains.

Perceiving the Environment

Perception is a continual process. Every waking moment we are tak-

ing in information about our environment and using it to make conscious or subconscious judgments about our surroundings. In fact, we've become so good at interpreting environments, we need only a small subset of the cues that most settings give us to understand the world around us. If we were to absorb all the information that each environment presents, we would be barely able to focus on anything else! Therefore, we sift, simplify, and structure the information we receive through our senses to reduce incoming stimuli to a manageable level.

Human beings shift constantly between three modes of perception: the *operational* mode, in which we concentrate on only those elements of the environment that will help us accomplish a task; the *responsive* mode, our everyday noticing of things around us; and the *inferential* mode, in which we focus our attention on those elements that support our image or knowledge of an environment. Each mode directs our attention to different stimuli, and the most successful environments (i.e., those that are effective at supporting and encouraging the desired outcomes) provide us with information on all three levels.

We are most comfortable when that information relates strongly to something familiar or well understood, either an activity (like approaching a hostess stand), a concept ("family restaurant"), or a sensory property (crunchy). We continually scan our environment for elements we can readily understand to help us determine what actions and attitudes are most appropriate. We hold our hand above a sizzling platter to find out if it is safe to touch, and we stop in doorways and at the tops of stairs to get our bearings and evaluate our surroundings before continuing. For most of us, it is disconcerting to take action until we have

taken that perceptual inventory. Environments that we can quickly take in and comprehend are the ones in which we can perform most effectively and efficiently.

While stimuli help us adapt our behavior for an environment, they can also wear out their welcome. As our exposure to a particular stimulus increases, our perception of that stimulus decreases, and we begin to seek new information. An example of that is our inability to hold a static image in our line of sight: we constantly move our eyes around an image to keep providing our brains with new, stimulating information. Too many stimuli competing for notice, on the other hand, can confuse us or send us conflicting messages. The result is sensory overload and the desire to reduce the incoming stimuli by shutting down the senses or by changing or leaving the environment.

The Approach-Avoidance Model

One prominent theory of environmental psychology is that human behavior in a given setting is largely a result of the interplay of three distinct perceptual factors: pleasure, arousal, and dominance.⁵ Various combinations of those perceptions can either attract us to an environment or cause us to avoid it.

Mehrabian and Russell describe *pleasure* as a measure of how much we like an environment and *arousal* as a measure of how an environment stimulates our perceptions or excites us. In general, arousing environments are those that are complex, providing high volumes of information to all the senses at once. Mehrabian and Russell further point out that the relationship between arousal and pleasure is shaped like an inverted U (i.e., \cap): the de-

² See: James A. Fitzsimmons and Gavin B. Maurer, "A Walk-through Audit to Improve Restaurant Performance," *Cornell Hotel and Restaurant Administration Quarterly*, Vol. 31, No. 4 (February 1991), pp. 94-99; Brian T. Sill, "Capacity Management: Making Your Service Delivery More Productive," *Cornell Hotel and Restaurant Administration Quarterly*, Vol. 31, No. 4 (February 1991), pp. 76-87; and Ken Smith, "Blueprinting the Restaurant for Improved Service Quality," *Journal of Hospitality and Leisure Marketing*, Vol. 2, No. 4 (1994), pp. 21-35.

³ For example, see: Peter Jones, "Managing Foodservice Productivity in the Long Term: Strategy, Structure and Performance," *International Journal of Hospitality Management*, Vol. 9, No. 2 (1990), pp. 143-154.

⁴ Brian Sill, "Operations Engineering: Improving Multi-unit Operations," *Cornell Hotel and Restaurant Administration Quarterly*, Vol. 35, No. 3 (June 1994), pp. 64-71.

⁵ Albert Mehrabian and James A. Russell, *An Approach to Environmental Psychology* (Cambridge, MA: MIT Press, 1974).

gree of pleasure increases as arousal increases, up to a point, beyond which pleasure drops as increasing arousal leads to overstimulation.⁶ Because people have different levels of arousal-seeking behaviors, what might be an exciting and attractive environment for one person (e.g., a dance club) may well be overstimulating for another. As we age, our ability to perceive, channel, and sift information decreases, reducing our ability to tolerate settings that are highly arousing.

Freedom is the degree of control and freedom to act that we perceive we have in a setting.⁷ Having personal control in an environment—having the ability to rearrange furniture to suit our needs—helps us control and successfully defend our personal space, an important contributor to our feeling of well-being and comfort.⁸

Mehrabian and Russell developed a three-coordinate system of subjective environmental assessment based on the dimensions of pleasure, arousal, and dominance, which they used to research whether there was a relationship between particular “emotional coordinates” and the tendency to approach or avoid an environment. Their approach-avoidance model involved four measures for a particular environment: the desire to explore, to work, to affiliate with others, and to stay.

The findings show that for most people, environments that are mod-

erately to highly arousing and that allow users to control their own actions are most preferred across all measures. However, if settings are perceived as too highly arousing, the desire to stay is reduced, especially if the dominance dimension is low, as in situations with crowding or long lines. That is particularly true for the women in Mehrabian and Russell’s studies, although it should be noted that the research was undertaken at least 25 years ago and that the cultural effects of the times might have contributed to the difference in response.⁹

The approach-avoidance model has meaning for restaurateurs. To be economically successful, they must be behaviorally successful: they must attract a high volume of guests by providing pleasing environments that offer moderately high arousal and a substantial amount of personal control. The degree of arousal generated by a restaurant environment also may be the key to influencing guests’ length of stay. That is, what may begin as an attractive level of stimulation can over time become excessively arousing, reducing guests’ desire to stay and thereby encouraging tables to turn. The next sections describe some explicit and implicit design tools that can be applied to achieve this effect and provides examples of how some prominent restaurant chains are using environmental factors to support high customer volume.

Ambient Factors

Baker suggests that environments can be evaluated in terms of ambient, social, and design factors.¹⁰ Each of these elements can contribute to

⁶ Mehrabian and Russell, pp. 103–106, 137, and 151.

⁷ Harold M. Proshansky, William H. Ittelson, and Leanne G. Rivlin, “Freedom of Choice and Behavior in a Physical Setting,” number 13 in *Environmental Psychology: Man and His Physical Setting*, Second Edition, ed. Proshansky, Ittelson, and Rivlin (New York: Holt, Rinehart and Winston, Inc., 1970), pp. 170–180.

⁸ See: Edward T. Hall, *The Hidden Dimension* (Garden City, NY: Doubleday, 1966); and Robert Sommer, *Personal Space: The Behavioral Basis of Design* (Englewood Cliffs, NJ: Prentice-Hall, 1969). Those books are considered to be the two seminal works on human territoriality and personal space.

⁹ Mehrabian and Russell, p. 193.

¹⁰ Julie Baker, “The Role of the Environment in Marketing Services: The Consumer Perspective,” in *The Services Challenge: Integrating for Competitive Advantage*, ed. John A. Czepiel, Carole A. Congram, and James Shanahan (Chicago: American Marketing Association, 1987), pp. 79–84.

creating a restaurant environment that offers a positive guest experience while encouraging a quick turnover of seats. Ambient factors are those that affect the atmosphere of the environment, such as color, sound, lighting, and scent.

Color. Research on consumer reactions to particular colors has been going on for decades and has found that color not only can affect people's perceptions and attitudes but can actually elicit a biological response.

Schaie and Heiss note that short-wavelength colors, what we commonly call the warm colors (red, orange, and yellow), are highly arousing (although not necessarily pleasing) even across different age groups and cultures.¹¹ This arousal level can be expressed in behavior: one study found people walked more briskly down a hall painted in a warm, highly saturated brown as opposed to a more muted shade.¹² Longer-wavelength colors (blues and greens) have a calming, relaxing effect. These so-called cool colors have been identified as the most pleasant to the majority of people, whereas yellow, although arousing, is the least favored color, especially when it has a greenish tint.¹³ According to Guilford and Smith, the brighter and more highly saturated the color, the more people tend to find it pleasant.

Another study found that people who were exposed to a red environment perceived their time in that environment to be shorter than that spent in a blue environment, even though the actual time was the same

in both circumstances.¹⁴ There is also evidence that although we are drawn to warmer colors, we experience a high degree of tension in long-wavelength environments and will rate such environments as less pleasant than those settings that are decorated with short-wavelength colors.¹⁵

These findings suggest that a restaurant environment that emphasizes colors in the high end of the spectrum (red, orange, gold) might initially attract patrons and, if these colors are used with sufficient intensity, may contribute to an arousing atmosphere that actually overstimulates patrons and thereby encourages speedy table turns. The bold colors, combined with other stimulations of the dining experience, may lead to sensory overload that can reduce consumers' length of stay. Moreover, as restaurant owners have long known, warm colors make food look better, and make for happier patrons who look the picture of health in warm light.

Restaurant chains that use color successfully include, not surprisingly, Burger King, McDonald's, and Wendy's. They have similar corporate color schemes made up of warm, highly saturated colors that are usually prominent components of each unit's design. Taco Bell's recent change from soft desert colors to vibrant purples and reds likewise attracts attention while reinforcing fast patron turnover.

Sound. One ambient factor that lends itself to manipulation in a restaurant environment is music. Smith and Curnow found that supermarket shoppers spent significantly less time in a store when loud

music was played,¹⁶ and studies by Milliman showed that slow rather than fast-paced music kept patrons in stores longer and increased their purchases.¹⁷ Milliman also examined how restaurant patrons respond to music of varying tempos, and discovered that fast music resulted in both fast service and short stays.¹⁸

Sound volume is more likely than music tempo to be noted by guests as detracting from the enjoyment of their experience (e.g., dining, shopping). Care should be taken, therefore, to ensure that the volume in a restaurant is sufficient to provide a moderately high level of arousal (resulting in fast turnover) but not so much that it prevents comfortable conversation (thereby discouraging repeat patronage and positive word-of-mouth promotion). Continual sound levels of 75 to 79 decibels should be the maximum if the target market is patrons under age 30, while older patrons will be happier when the background music is set at a low volume.¹⁹

Lighting. Mehrabian and Russell note that bright lights contribute to arousal and that people are naturally drawn to light sources.²⁰ This fact can be observed in many settings: in hotel lobbies, for example, guests choose to sit in armchairs next to table lamps; and in corridors, people will walk along the portion of the hallway that is best lit. Creating pools of light to highlight aspects of an environment

¹¹ K.W. Shaie and R. Heiss, *Color and Personality* (Bern: Hans Huber, 1964), p. 75.

¹² *Miscellaneous Undergraduate Research in Spatial Behavior: A Classified and Annotated Listing*, ed. R. Seaton (Berkeley, CA: University of California at Berkeley, 1968), as quoted in Mehrabian and Russell, page 60.

¹³ J. Guilford and P. Smith, "A System of Color-Preferences," *American Journal of Psychology*, Vol. 72 (1959), pp. 487-502.

¹⁴ G. Smets, "Time Expression of Red and Blue," *Perceptual and Motor Skills*, Vol. 29 (August-September 1969), pp. 511-514.

¹⁵ Joseph A. Bellizzi, Ayn E. Crowley, and Ronald W. Hasty, "The Effects of Color on Store Design," *Journal of Retailing*, Vol. 68, No. 4 (Spring 1983), pp. 21-45.

¹⁶ Patricia Cain Smith and Ross Curnow, "Arousal Hypotheses' and the Effects of Music on Purchasing Behavior," *Journal of Applied Psychology*, Vol. 50, No. 3 (June 1966), pp. 255-256.

¹⁷ Ronald E. Milliman, "Using Background Music to Affect the Behavior of Supermarket Shoppers," *Journal of Marketing*, Vol. 46, No. 3 (Summer 1982), pp. 86-91.

¹⁸ *Ibid.*

¹⁹ M. Sanders and E. McCormick, *Human Factors in Engineering and Design* (New York: McGraw-Hill, 1993), p. 604.

²⁰ Mehrabian and Russell, pp. 63-64.

is a favorite technique of restaurant designers. Often tabletops are spotlighted to suggest a defined "territory" at each table—a successful approach if extending patron stays is the desired effect.

To increase arousal levels and promote high turnover, however, lights that move or are highly colored can be used. Dive, the high-concept submarine-sandwich chain developed by Steven Spielberg, uses extreme lighting techniques to create a high level of arousal and to punctuate the dining experience. The restaurant's design mimics the interior of a submarine, complete with a wall of video monitors constantly flickering with actual and feature-movie film footage of submarines. Periodically, all lighting is extinguished except for intense red lights that whirl and flash while a loudspeaker barks "Dive! Dive!" These features no doubt contribute to the chain's remarkable success in turning tables as quickly as twice an hour in its Las Vegas unit.²¹

Scent. Most people are familiar with the bakery trick of venting ovens to front-of-house areas to attract patrons and increase sales. One Canadian cinnamon-bun chain was known to vent its ovens directly to the "O" in its sign, pumping the wonderful smell directly into the path of passersby.

Research supports instinct here: good smell sells. Pleasant smells have been found to enhance mood, to make research subjects more cooperative, and to promote clear thinking.²² One study even discovered that pleasant odors increased the amount gambled at slot machines in a Las Vegas casino.²³ While there

have been no published studies that assert that scent in and of itself increases table turns, it is likely that the additional stimulation that scent provides can add to arousal levels, which in turn can influence the desire to stay. Rainforest Café uses scent to stimulate diners before they are seated by wafting floral fragrance into its retail areas, further supporting the chain's exotic tropical concept. Because Rainforest Café uses its retail area as a holding space for waiting diners, this addition of scent adds to patron arousal levels early in the dining experience, when increased arousal is pleasurable and stimulating. Customers arrive at their tables excited and ready to experience more.

Social Factors

Social factors are those that affect people's activities and demeanor. Humans are social creatures; in most cases, we prefer and actively seek out the company of others. As a result, we are drawn to settings where others congregate and where we will be accepted as part of the dominant group.

Being alone in a public environment makes us feel vulnerable and may cause us to hurry to a new location where we will find the relative safety of others. We have all experienced the discomfort of entering an empty restaurant and may in fact have chosen to move on to a busier place, telling ourselves that an empty restaurant cannot be a good one. In fact, when that occurs we may really be seeking a more social and therefore more comfortable environment.

Overcrowded environments, however, can also make us uncomfortable, as crowding reduces our ability to create and defend a personal territory. We may try to "anchor" ourselves with a physical element of the environment (against a wall or column, in a booth, or even

beside a potted plant), limiting the information and stimulation reaching us and making it easier to defend our space. If we are unable to find an anchor, we may move on to a less crowded setting, even if the crowding is more perceived than actual. A study by students at the University of California, Berkeley, found that cafeteria patrons considered a dining area full if half the seats had been taken and only unanchored seats were available.²⁴

Restaurant chains are designing spaces that play on our need for both social interaction and secure territory. To encourage table turns, Timpano Italian Chophouse, a new T.G.I. Friday's concept, uses a high number of unanchored seats in a large open dining space. Patrons at those tables are likely to feel more exposed and less in control—and therefore would be expected to leave sooner—than those who are anchored.

Restaurants that divide dining areas up into separate spaces can take advantage of the human tendency to seek others. Red Lobster, for example, uses many small dining areas to create settings that look busy even when the restaurant is operating well below capacity. The restaurant can open or close the sections as needed to consolidate diners and use labor more efficiently while providing new arrivals with an active dining space that suggests popularity, a sign that the restaurant is a "safe" place to eat.

Kahunaville uses a similar approach, creating several distinct environments within each restaurant—a starlit grotto, a deck overlooking jungle foliage—that can be filled with diners in careful sequence so that each section appears comfortably busy. Busy environ-

²⁴ *Miscellaneous Undergraduate Research in Spatial Behavior*, *op. cit.*, as quoted in Mehrabian and Russell, p. 131.

²¹ Unpublished observations by the author.
²² Kate Murphy, "A Sales Pitch Right under Your Nose," *New York Times*, September 13, 1998, "Money and Business" section, p. 8.

²³ A. Hirsch, "Effects of Ambient Odors on Slot-machine Usage in a Las Vegas Casino," *Psychology and Marketing*, Vol. 12, No. 7 (October 1995), pp. 585-594.

ments increase arousal levels, while a hectic setting can encourage patrons to complete their meals quickly.

Design Factors

Design factors are the elements that physically make up the environment: walls, floors, furnishings, finishes, and equipment. A restaurant's design, or "trade dress," is often its most distinguishing feature and the one that it is best able to protect from duplication by competitors.²⁵

To be effective, the design of a restaurant must quickly and clearly communicate to a prospective customer what can be expected from the meal experience. Careful attention to features of the exterior, the dining-area layout, the table configuration, and the furnishings and materials can help customers "read" the environment, which can in turn contribute to higher patron volume, as people seek out comfortably familiar settings that are at the same time arousing.

Exterior features. Providing environmental cues on the exterior of a restaurant can help attract guests and provide them with information about the type of experience they are likely to have inside. Many restaurants use architectural styles to communicate the type of cuisine featured. Notable examples are P.F. Chang's, with its striking Chinese sculpture and architectural details, and the lively Mediterranean tile work of Wolfgang Puck's California Café.

There are many techniques that can be used to help prospective patrons read a restaurant and there-

fore possibly support the speedy processing of diners through the restaurant system. The ability to quickly interpret the restaurant environment helps patrons make the commitment to enter the establishment more readily. Well-defined entrances and convenient drop-offs bring customers quickly and easily into the space, and an ample waiting area assists management in containing and smoothly processing customer parties. I have observed how Cracker Barrel restaurants, for example, use a front porch with rustic rockers as a way of quickly communicating to potential customers the theme and level of service that might be expected, as well as providing additional and pleasant waiting space. This approach helps Cracker Barrel process high volumes of diners, particularly on busy weekends when one turn every hour is not uncommon.

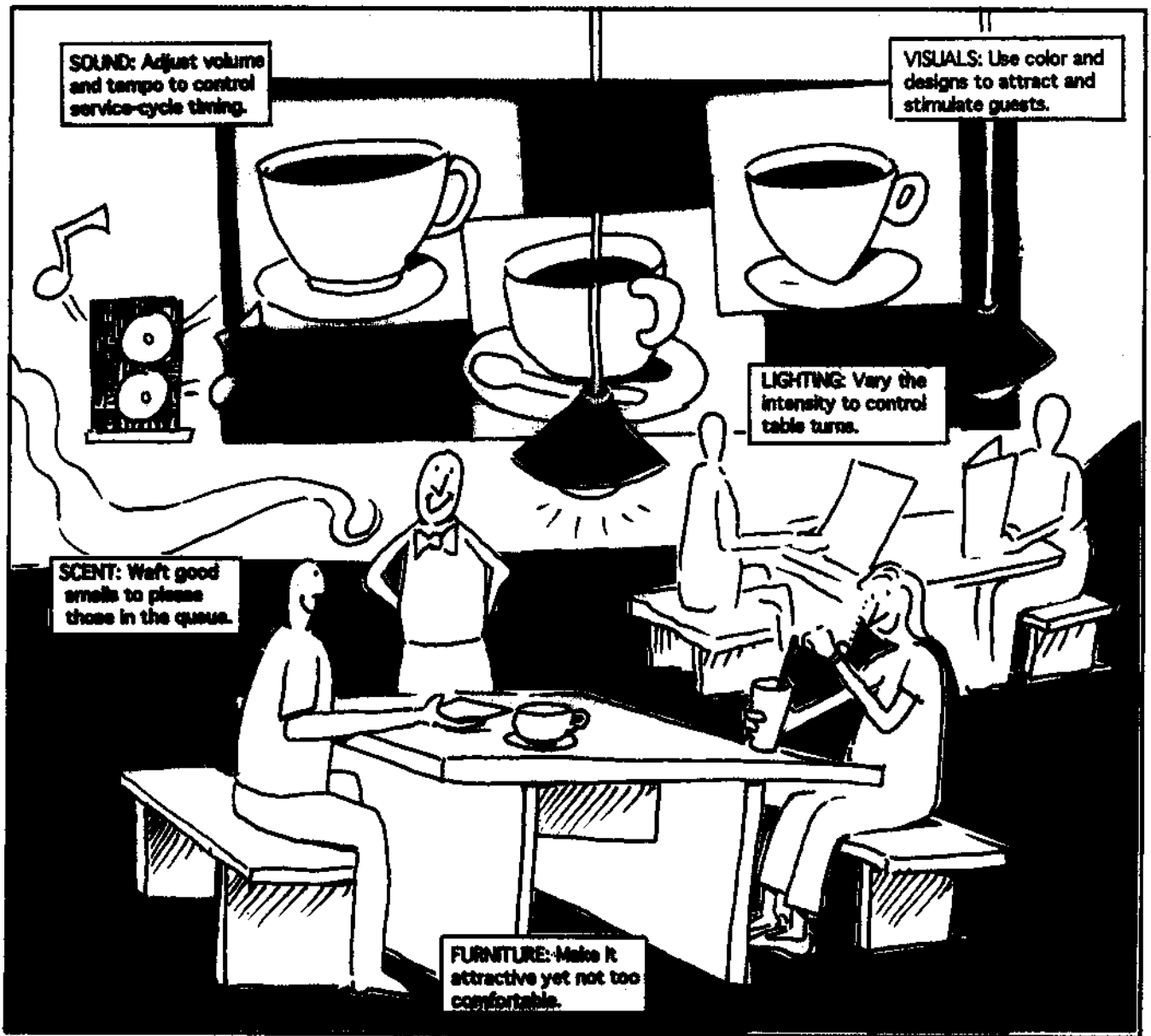
Many high-turnover restaurants, such as Planet Hollywood and Hard Rock Café, do not have windows, preventing guests or passersby from peering inside. That creates a sense of surprise for arriving guests, who, if they want more information, must commit to the restaurant enough to enter. The lack of windows also allows the restaurant to wholly control the environment's light levels, enabling the chain to influence arousal levels more precisely.

Restaurant layout. As previously discussed, an environment that appears busy and bustling can contribute to table turns, and therefore laying out the dining room to make use of small areas or increasing the number of unanchored seats may support high volume.

Another way to make a room appear busy is to allow diners to see the space and activity around them. As many seats as possible should afford a view of other diners. T.G.I. Friday's and Applebee's are well known for using this approach to

Busy environments increase arousal levels, while a hectic setting can encourage patrons to complete their meals quickly.

²⁵ See: Je'Anna Abbott and Joseph Lanza, "Trade Dress: Legal Interpretations of What Constitutes Distinctive Appearance," *Cornell Hotel and Restaurant Administration Quarterly*, Vol. 35, No. 1 (February 1994), pp. 53-58; and Patricia Diaz and Denny Rutherford, "Restaurant Espionage: When Recipes Are Not Trade Secrets," *Cornell Hotel and Restaurant Administration Quarterly*, Vol. 38, No. 1 (February 1997), pp. 43-50.



SOUND: Adjust volume and tempo to control service-cycle timing.

VISUALS: Use color and designs to attract and stimulate guests.

LIGHTING: Vary the intensity to control table turns.

SCENT: Waft good smells to please those in the queue.

FURNITURE: Make it attractive yet not too comfortable.

dining-room layout. Separations between spaces can be achieved with level changes, low barriers, or even floor finishes that merely suggest distinct areas.

Open kitchens, in-room food preparation, and tableside activity can all contribute to the complexity of the environment and to higher levels of arousal. P.F. Chang's, California Pizza Kitchen, and Don Pablo's all make use of the idea of food preparation as theater—and as environmental stimulus.

Giving customers an opportunity to quickly interpret and understand the environment from the point of entry can generate what is called an approach response. Laying out the facility so that the entryway offers a clear view of the main dining areas allows patrons to infer the kind of experience they are likely to have once they are seated and helps them feel comfortable and in control early in their visit. One chain using that technique to great effect is Romano's Macaroni Grill. Guests

entering the restaurant immediately descend a gentle ramp that offers a broad view of pasta making and other preparation as well as of the dining areas.

A waiting area that appears commodious even when busy will encourage prospective guests to stay rather than depart for a less-crowded environment. The Olive Garden chain accomplishes this effect by providing generous seating areas for waiting guests, while Hooters connects the waiting area

to a bar that affords customers a view both of sports events on its many television screens and of the restaurant's other attractions.

Another strategy to help guests feel comfortable and in control of their experience before being seated is to provide them with a diversion while they wait. Major casual-theme chains such as Rainforest Café, Hard Rock Café, and Planet Hollywood make effective use of retail areas, often locating them as "buffers" between the host function and the dining room area while providing a visual connection among all areas.

Although all booth seating is anchored, its use can contribute to faster turnover by minimizing the amount of time needed for table reconfiguration between parties. Booths also help keep the dining area neat and efficient, which assists customers in understanding the space quickly. Outback Steakhouse uses straight-backed booths effectively to support its high rate of table turns while reinforcing its theme of a casual Australian saloon. The booths can be changed over quickly, while their erect seatback and hard finishes discourage lingering. Moreover, the lack of control over seat configuration reduces patrons' desire to stay. These attributes translate into seating that encourages and supports fast table turns.

Fixed seating such as that used by McDonald's and other quick-service concepts serves the same operational purpose as booths (easy maintenance and minimal reconfiguration requirements) but reduces the amount of control a customer has over the environment. Tables and chairs cannot be reconfigured to support varying group sizes, and personal distance is regulated by the positioning of the furniture. The lack of individual control likely contributes to the high number of turns that can be seen at any busy fast-food restaurant.

Furnishings and materials.

Successful high-volume restaurants make use of seats that are comfortable—but not too comfortable. Hard seating materials and seats with upright backs can be designed to be inviting to sit in but discouraging to long stays; an example is the faux-rustic seating in chains like Kahunaville. Rainforest Café takes the concept one step further, using molded-fiberglass "animal" bar stools that do not support lengthy stays by any but the most hardy. Hard finishes on furnishings and floors also contribute to a higher degree of arousal through increased sound, as music and noise bounce off these surfaces and reverberate through the space. Further, hard surfaces are easier and faster to clean, allowing tables to be turned over more quickly between parties.

Using many different materials and textures creates a more complex environment. ESPN Zone uses a combination of metals, plastics, woods, and flooring types to emulate the rapidly changing sets on a televised sports show, and it adds dynamic environmental effects such as video screens, music, voice-overs, and moving spotlights. The result is highly arousing and, not surprisingly, a bigger hit with male patrons than with female patrons because of males' higher tolerance for arousal.²⁶ Regardless of gender, however, the level of stimulation is such that patrons can become over-aroused as exposure increases, with the result being shorter stays.

Using Psychology to Turn Tables

Creating a successful high-volume restaurant is more than just offering quality food with quick and friendly service. The restaurant environment itself can be designed to encourage

fast turns and satisfied customers through the application of some basic psychological principles.

High-traffic restaurants need to be arousing and to allow guests to control at least some aspects of their environment, while striking a balance between over- and under-stimulation. Making the dining area feel busy and active through environmental elements such as music, lighting, table placement, furnishings, and materials selection supports high-volume operations, while other techniques such as the thoughtful use of color and scent can both attract patrons and enhance the dining experience. Many prominent restaurant chains make use of those techniques.

There is a need for focused research on how those and other environmental-psychology principles might best be applied to our industry.²⁷ Much work has been done on the impact of sound, light, color, density, furnishing, and materials in health-care settings, schools, prisons, and retail stores, but little hard data is available for restaurants. The findings presented here suggest some probable outcomes that are supported by actual events in noted restaurant chains. The next step in understanding how restaurant design can affect patron behavior is for those chains and others to work with researchers to collect empirical data that can be tested in various settings.

Design is an exciting and important component of a restaurant chain's success. Building our understanding of effective design can enhance our industry by creating more successful concepts for our guests to enjoy. **CQ**

²⁶ See, for example, Mehrabian and Russell, p. 191.

²⁷ For example, see: Carolyn U. Lambert and Karen Marsh Watson, "Restaurant Design: Researching the Effects on Customers," *Cornell Hotel and Restaurant Administration Quarterly*, Vol. 24, No. 4 (February 1984), pp. 68-76.