

**LIFE/STYLE ONLINE<sup>©</sup>**

**A WEB-BASED METHODOLOGY**

**FOR VISUALLY-ORIENTED**

**CONSUMER RESEARCH<sup>1</sup>**

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#### **ABSTRACT**

This paper describes a web-based data collection technique called *Life/Style OnLine*<sup>©</sup> that is suitable for a broad variety of consumer research applications. Unlike the majority of online research techniques now in use, respondents provide rapid-response feedback to stimuli presented primarily on the visual rather than the verbal channel. Following a brief review of current web-based research methods, we provide some details regarding the *Life/Style OnLine*<sup>©</sup> methodology, describe some alternative applications of its core functionalities, and explore the ramifications of this and similar web-based technologies for consumer research and marketing practice.

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## INTRODUCTION

“...by developing methods for engaging and/or monitoring imagic activity more directly, managers and customers can be moved closer to the way their thought occurs and thereby provide more complete representations of their thoughts and accounts of their behaviors” (Zaltman, 1997; p. 425).

Exciting developments in interactive technologies bring with them fundamental changes in how marketers and consumers speak to one another. Interactive media have the potential to revolutionize consumer research—if we can harness their unique characteristics to full advantage. The purpose of this paper is to describe a web-based data collection technique that is visually driven, where the participant provides rapid-response feedback to stimuli presented primarily on the visual rather than the verbal channel. Following a brief review of current web-based research methods, we will provide some details regarding the web-based research methodology we have developed, describe alternative applications of its core functionalities, and explore the ramifications for consumer research and marketing practice.

## INTERACTIVE VERSUS PASSIVE PRODUCT EVALUATION

Marketers traditionally have relied upon one-way mass communications media to convey product information to consumers. Messages are broadcast from a producer to many consumers at one time—typically via print, television, or radio. A single message, then, is perishable—it is repeated for a fairly short period and then it “vanishes” as a new campaign takes its place. According to this view, the recipient passively absorbs the message and—if it has been effectively crafted—we will observe some attitudinal and/or behavioral response to the stimulus object in the form of increased liking, purchase intent, or even an actual transaction.

This passive perspective has been challenged by proponents of *uses and gratifications theory*, who argue that consumers are in fact an active, goal-directed audience that draws on mass me-

dia as a resource to satisfy needs. Instead of asking what media do for or to people, they ask what people do *with* their media (Katz, 1959; Solomon & Assael, 1987). While this perspective has been applied to traditional mass communications, it is perhaps even more germane to online communications where the user interacts continuously with the message on a voluntary basis.

Just what are people doing with online media? Much of this online activity involves some form of product evaluation, as intrepid web surfers challenge organizations to provide them with compelling reasons to buy into a firm’s vision of “the good life”—and the goods and services needed to attain it. But asynchronous, dynamic methods of delivering information, as exemplified by the World Wide Web, are a two-edged sword for marketers: On the one hand, they grant firms the luxury of presenting vivid illustrations of their products to individuals who have *elected* to process them. On the other hand, consumers now are more accustomed to being entertained by these riveting images and they will be less likely to be receptive to static, dry presentations that do not sufficiently engage them.

Web designers have in a sense poisoned the well by spoiling consumers with electrifying graphics so that web surfers have come to expect a reasonable amount of dynamism when they arrive at a web page, as exemplified by the surge of visitors to the Victoria’s Secret site after the intimate apparel retailer’s titillating online fashion show was promoted during the 1999 Super Bowl. If the site doesn’t live up to expectations, the surfer is but a mouse-click away from moving to a more attractive suitor.

So, how do marketers captivate these media-jaded consumers? This challenge is being met in the domain of e-commerce by pathbreaking firms that are stocking their sites with interactive, highly visual content to entice web surfers. For example, Eddie Bauer Inc. is testing an online service that lets customers mix and match styles, and The Gap already offers such a feature (Weimer, 1998). Lands’ End has gone a step further by adding a feature to its Web site that allows shoppers to see how the clothes

would actually look on their bodies. The user selects hair color, height, shoulder width, waist and hip size, and these features form a three-dimensional virtual body (Wall Street Journal Interactive Edition, 1998). Other firms are introducing ways to build consumer involvement by allowing them to input their own images to the company site. *Cosmopolitan's Virtual Makeover* uses customer-supplied photos to show how the user would look with different cosmetic treatments (<http://www.virtualmakeover.com/cosmo/>), while Mattel allows young Barbie fans to order custom-made dolls made to resemble their own measurements, skin tone, and hair color.

These promotional and merchandising efforts are innovative and exciting. However, it is not clear that similar innovations in web use are being made by marketing scholars and research practitioners. We argue that they are not fully exploiting the capabilities of online media to probe deeply into consumers' motivations and preferences. In particular, we believe that researchers need more vision—literally. Existing methods of data collection, largely focused on the written or spoken word, need to adapt to the enhanced possibilities for visual research offered by the Web.

#### ***Online Data Collection: Problems and Potential***

One ramification of online marketing is that consumers have many more choices available to them and greater control over which messages they choose to process (Vinkatesh, Dholakia, & Dholakia, 1996; Hoffman and Novak, 1996). Another is that organizations now possess the ability to present rich, visual information to consumers and to obtain feedback (in the form of purchases or other responses) very quickly. Unfortunately, this lode has not yet been adequately mined.

Conversion from mail, telephone, or direct interviewing survey techniques to a web-based format has several compelling advantages. Response time can be minimized due to automation of response protocols. It is easier to modify the research instrument or to create multiple experimental versions of it, and the survey or experiment can be conducted around the

clock. The researcher has the capability of reaching a larger and more diverse subject population, and it is possible that responses will be more veridical due to the anonymity afforded by the Web. Since data collection is automated and coding errors all but eliminated, data costs per respondent ought to be considerably lower than with traditional research methods.

On the other hand, widespread adoption of online formats for research purposes has been hampered by some troubling issues. Chief among these is sampling bias, since the universe of Web users is skewed toward upscale, well-educated male technophiles (Stanton, 1998). Another problem is the inherent uncertainty about the real identity of the respondents at the other end of the modem connection (though one could argue that phone and mail surveys pose the same problem). A related issue is the unwillingness of respondents to provide sensitive information over what they perceive to be insecure lines. While targeted e-mails have been used to recruit subjects who can respond anonymously, privacy concerns linger among consumers (Khunert & McCauley, 1996; Reips, 1997).

Despite these concerns, some research firms and academics are surging ahead with online surveys. For example, the Wharton Virtual Test Market ([http://fourps.wharton.upenn.edu/~wvtm/naomi/WWW\\_homepage/start1.htm](http://fourps.wharton.upenn.edu/~wvtm/naomi/WWW_homepage/start1.htm)) and Georgia Tech's Graphics, Visualization, and Usability Center (GVU) periodically conduct surveys regarding attitudes toward web usage (Kehoe & Pitkow, 1996). Major research firms including NPD and Greenfield regularly conduct online panels and surveys.

A typical strategy currently used in online research efforts is to use a list server to reach participants in a special interest discussion group, who then respond to an online questionnaire related to this interest (Greguras & Stanton, 1996). Although empirical validation is in its early stages, few systematic differences in response patterns between such online and *in vivo* sampling and survey methods have been reported. For example, in one study where an identical questionnaire was administered in both paper and web formats, similar covariance

structures were obtained for each version (Stanton, 1998).

Despite the steady advances of online data collection efforts, a frank assessment of these instruments is that most essentially are standard paper-and-pencil measures simply scanned into html file format, with response buttons, pull-down lists, or text input fields substituted for traditional hard copy paper-and-pencil scales. This reproduction of the traditional instrument is adequate for many research applications, but certainly not for all. And, these conventional formats do not take full advantage of the web's capabilities to present dynamic, rich images to large numbers of users simultaneously. A few academic projects are pushing the envelope in this regard, but these are primarily online experiments posted by psychologists (for one notable example visit <http://www.cops.uni-sb.de/ronald/experim/>).

### **(IN RESEARCH), A PICTURE IS WORTH A THOUSAND WORDS**

The use of visual stimuli by consumer researchers has largely been confined to small-sample qualitative studies that typically build upon methodological traditions developed in disciplines such as clinical psychology, visual sociology, aesthetics, and anthropology. In the main, these techniques use visual material as part of a stimulus or response format and require "deep" interpretation as the analysis approach (Heisley & Levy, 1991). For example, projective techniques such as autodriving and the TAT (Thematic Apperception Test) have been adapted to qualitative consumer research contexts (Heisley & Levy, 1991; Levy, 1981; 1985; Rook & Levy, 1983). Photographs and videos are routinely used in consumer ethnographies and naturalistic shopping and marketplace studies to document informants' reactions *in vivo* (Belk, Sherry, & Wallendorf 1988; 1989). A few isolated interpretive studies have employed images as a response format when subjects are asked to create collages expressing some underlying concept, as when respondents are asked to construct vi-

sual representations of the construct of "paradise" (Bamossoy & Costa, 1997).

In recent years, the Zaltman Metaphor Elicitation Technique (ZMET) developed by Zaltman and his colleagues (Zaltman, 1996; 1997; Zaltman & Coulter, 1995) represents a more systematic application of visually grounded research methods. As Zaltman (Zaltman, 1997) notes, thought arises from images, not words, and two-thirds of all stimuli reach the brain through the visual system. The ZMET system makes an important contribution as a corrective for the verbal bias in computer-mediated research. This methodology is superb for researchers wishing to conduct intensive qualitative research with a small sample to better understand how they metaphorically represent a brand personality in memory.

The research tools that we will describe in this paper were designed to accomplish very different objectives and, therefore, differ in structure from ZMET in several important ways: 1) in ZMET the visual images are generated through an intense interactive process between a subject and a digital technician—the goal is to jointly construct a visual metaphor for a brand that is then subjectively interpreted; 2) the methodology is computer-mediated in the sense that the image is created with the use of computer software, but data *per se* are not collected online; 3) responses to visual stimuli are not quantitatively aggregated across respondents.

A similar dearth of work can be found in more traditional consumer research domains; relatively little attention has been paid to the application of visual stimuli in quantitative or information-processing research (Grunert-Beckmann & Askegaard, 1997). Yet, most information-processing research that has employed visual stimuli has given credence to the different hemispheric information-processing styles connected to verbal and visual stimuli. It is thought that the left hemisphere is primarily responsible for cognitive abilities which rely on verbal information and symbolic representation, while right hemisphere functions center around the processing of holistic, nonverbal information (Flemming, 1981). The implica-

tion of hemispheric lateralization differences is that verbal and visual information processing systems are dissimilar—and more work is needed to appreciate how these differences may impact research procedures.

Building on these fundamental lateralization differences, Holbrook and Moore (Holbrook & Moore, 1981) proposed several difficulties that verbal-additive evaluative methods may encounter, and that visual stimuli (pictorial presentations) could possibly overcome. They argued that product evaluations are a *gestalt* phenomenon where design features must interact. Since pictorial information can be processed simultaneously, whereas verbal stimuli tend to be processed sequentially, the latter may hinder cognitive responses to *gestalt*-like phenomena. In addition, they argued that aesthetic, sensory, or symbolic benefits of products must be heard, tasted, or seen to be appreciated. Holbrook and Moore (1981) summarized these arguments by noting that words have few main interaction effects and pictures have many. Coupled with other findings indicating that pictures are more memorable than words and are more impactful stimulants of mental imagery (Allen, 1969; Childers & Houston, 1984), the case for greater attention to visual stimuli by consumer researchers is clear.

Unfortunately, there are several technical impediments to use of the visual channel in online consumer research, including possible variations in image resolution caused by the use of different computers, monitors, and browsers, the need for system architecture to be platform-independent, and the ubiquitous issue of download time due to bandwidth constraints for users accessing the site from a modem rather than a direct network connection.

Despite these obstacles, the verbal bias is a serious drawback for many consumer research applications. For example, any studies involving reactions to brand imagery, advertising executions, packaging alternatives, logos, or more general explorations of the congruence between a product and a consumer's lifestyle are ill-suited to presentation of stimuli on the verbal channel. In addition, demographic differences

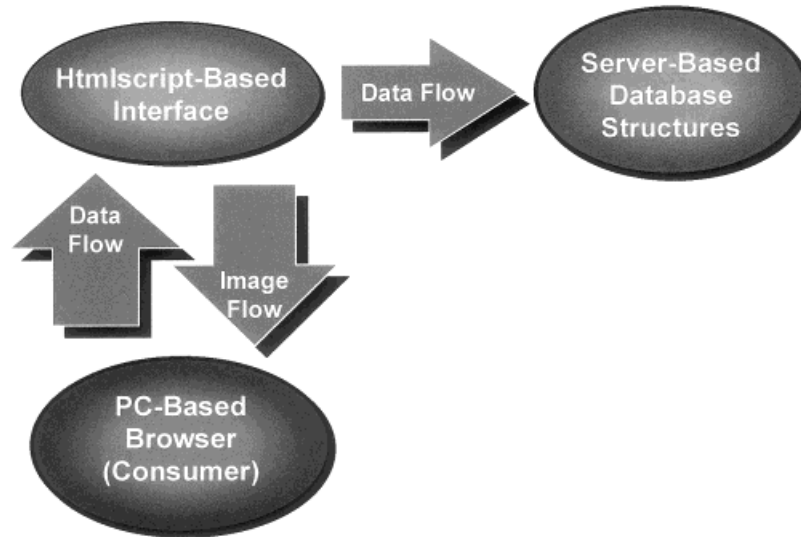
in information-processing tendencies may further accentuate this problem: As any college teacher can attest, younger "Gen Y" consumers are very visually oriented and are accustomed to processing a lot of consumption information from such sources as MTV and photo-laden tabloids. In the next section, we will outline the approach we have taken to incorporate this crucial visual dimension in our online data collection methodology.

### **LIFE/STYLE ONLINE®: CREATING THE VISION**

The current project addresses the need to develop online consumer research methodologies that 1) are visually-based; 2) allow the responses of large numbers of respondents to be aggregated for analysis; and 3) permit a nearly instantaneous and continuous flow of data to researchers. It also tackles the technical impediments to an internet mediated image-based delivery system, such as download time and platform-dependence. Although these web-based tools were developed in the context of a specific substantive application, they have considerable general utility to other applications of interest to marketing researchers.

*Life/Style OnLine®* was initially developed to explore the germination and dissemination of fashion trends among young female consumers and to contextualize their choices in fashion categories to other lifestyle choices. A goal of this project is to enhance the responsiveness of the American apparel and textile industry to these emerging desires. The project is funded by The National Textile Center, U.S. Department of Commerce (Solomon & Englis, 1997a), and (with the cooperation of the Stanford Research Institute) uses the VALS2 consumer typology to identify female fashion opinion leaders who participate in a web-based panel constituted from a national sample of American women corresponding to specific VALS2 types.

At the core of the project is a web-based interactive data collection technique that allows respondents to manipulate visual images of products as a means of expressing their tastes



**FIGURE 1**

Schematic of *Life/Style OnLine*® system architecture. Elements of the html script software and its associated databases may be stored locally or on a remote server

and preferences. This tool is comprised of a browser-based software interface with an extensive database layer, which handles storage and retrieval of visual images. One innovative feature of the software that generates the web pages is that it is a form of dynamic html (html scripting). Therefore, the large number of web pages that might be required by a specific research application are not individually created html files, but are instead interactively created online in response to the behavior of the respondent. The specific pages, then, do not actually “exist” until the time of application when the program creates them “on the fly” on the basis of respondent behavior, research design parameters, and information in the database (visual and verbal).

The research protocol is administered to consumers on a client-server platform as shown in Figure 1. The base system is designed to function on a remote server linked to the user’s machine through an Internet connection. In this configuration, all web-page components reside on the server and are assembled into web pages as needed through the html script interface and data are input to the server databases as a continuous tracking of respondent behav-

ior at the browser. However, the system can be hybridized in several ways to allow it to be used with local storage systems, or for partial offline data collection, or to separate components of the system. This flexibility allows researchers to solve several problems likely to be encountered in specific applications. For example, image loading times can be greatly reduced by storing the image database locally while allowing software and data streams to be controlled from the client server.

Because the software is browser-based, it has the virtue of being platform-independent. The core software tools can be embedded in standard html pages or referred to by other browser-based software. In our present application the research tools are embedded in a password entry application that routes the respondent to the appropriate version of the application. Different “versions” constitute different experimental conditions or variations of a survey protocol. The password entry application also serves to associate the respondent to the appropriate data record in the database, thereby permitting the interleaving of data necessary for repeated measurement protocols.

A major focus of our ongoing research pro-

gram has been to learn how female fashion opinion leaders integrate information from mass-media lifestyle depictions as they form their own consumption preferences and communicate these choices to others (Englis, Solomon, & Olofson, 1993; Solomon & Englis, 1994). The product images presented in *Life/Style OnLine*<sup>®</sup> are chosen from print media of particular relevance to the twentysomething female consumers in the target population, based on readership data obtained from *The Simmons Survey of Media & Markets*. The basic feature of the product selection and assessment portion of the *Life/Style OnLine*<sup>®</sup> protocol is to have respondents assemble—on their computer screens—collages of product images they associate with images of selected people and lifestyle scenarios.

There are three visual layers to the current data collection paradigm: (1) sorting and selection of images of people in their daily lives; (2) establishment of a social context in which product selection will occur; and (3) selection of an “ensemble” of products perceived to be ideally suited to each social context. Descriptive information pertaining to both the social images and the product images are included as the respondent navigates through the task.

The present project extends our previous work (Englis & Solomon, 1995; Solomon & Englis, 1997b) in this area by examining how consumers’ aspirations are expressed visually as they evaluate and select products. While clothing selections are the focus of the current application, these choices are contextualized by asking respondents to evaluate product alternatives in other categories as well. This aspect of the research further develops our prior work in cross-category consumer decision-making (Englis & Solomon, 1996; Solomon & Assael, 1987; Solomon & Englis, 1984). Accordingly, the user interface is designed to be flexible enough to accommodate the input of virtually any kind of visual imagery to allow researchers to elicit respondent feedback regarding a broad range of consumption domains.

Zaltman and his colleagues remind us of the crucial role played by metaphorical thinking as consumers process consumption data. The *Life/Style OnLine*<sup>®</sup> system also is based upon a meta-

phor—that of a virtual house. Our choice of this structure stems from the notion that each room in a house is associated with a set of consumption decisions, ranging from the type of car to keep in one’s garage and the choice of a computer in the study to the vintage of wine to serve in the living room or the appropriate artwork to hang in the bedroom.

The research task requires respondents first to select an “ideal” person image and then to navigate through the “rooms” of that person’s house, stopping along the way to make product selections associated with different social scenarios. For example, the respondent’s task might be to help the person prepare for a dinner party she is giving for a group of business associates. In that case she would go to her “closet” and select an outfit, shoes, and other items. Then, she would proceed to the living room and choose furnishings, music, artwork, and so on. Finally, she would navigate to the dining room where dinner would be served—and choices of table settings, entrees, beverages, etc. would be recorded.

### *The “Life” Layer of Life/Style OnLine*<sup>®</sup>

The task begins with the “Life” layer. A demonstration version of *Life/Style OnLine*<sup>®</sup>, as well as other applications of this software, can be accessed at <http://www.fafnir.berry.edu/ConsumersOnLine>. This section of the task asks respondents to scroll through a set of images of people shown in their daily lives—people engaged in leisure activities, at work, with their families, and so on. In the present application, respondents sort these photos into four categories—aspirational and avoidance categories, a category representing how they currently see themselves, and an irrelevant category. Figure 2 shows two sample full-sized images and their respective category assignments. Smaller, thumbnail-sized images are shown on a summary page that is presented for each category as assignments are being made. The respondent is then asked to confirm her choices and to select the one image most prototypic of each category. This prototype is later used as the stimulus image for a traditional question-



**FIGURE 2**

Screen shot showing two images taken from the “life” layer. Each shows the category into which the image has been placed: category labels are presented on “pull-down” menus placed at the bottom of the images

naire layer that collects data pertinent to the respondent’s perceptions and evaluations of each social category. The prototype image (aspirational, avoidance, or current selves) is also used as a visual prompt (or avatar) for each social category in the “style” layer of the task, which is described in detail below.

#### *Other Applications of the Life Layer*

The “Life” layer of *Life/Style OnLine*® is essentially a sorting task that has been instrumented online. In the current application, the categories have been determined *a priori* to examine self-concept/product-congruence issues within the specific research application. However, the software can easily be modified to incorporate other category labels and to include virtually any number of categories desired. Thus, *any* research project requiring respondents to sort visual images into *a priori* categories can be instrumented using this technology. The labeling of the categories as well as the specific number of categories can both be determined by the researcher, or the system can present a fixed number of categories without labels.

In this latter case, once the sorting task is completed respondents can be asked to provide their own descriptive labels for the categories they have populated with images. Alternatively, the sorting task can be instrumented without *a priori* category information. In this

case, the respondent is initially presented with the full set of images and is asked to create her own categories. Each time the category contents are updated, the respondent is given the option of sorting the next image into the currently existing categories or to create a new category.

Once sorting is complete using any of these task modalities the respondent can be asked to select a prototype image for each category, provide a label for each category, and she can then be sent to a questionnaire layer. The questionnaire layer can be created to contain questions common to all sorting categories or questions that are unique to selected ones. A sample of research questions that could be addressed by these sorting procedures includes:

- Stimulus discriminability (e.g., sorting of logo or packaging options).
- Aesthetics (e.g., sorting different options for product or package designs or matching visuals with products/brands in ad execution research).
- Typologies (e.g., beauty types research, product attribute typologies, Q-sorts).
- Perceptual mapping (e.g., MDS studies to understand dimensions underlying perceptions of product options).

### The “Style” Layer of Life/Style OnLine<sup>®</sup>

The “Style” layer of *Life/Style OnLine*<sup>®</sup> asks the respondent to make product choices corresponding to one or more social scenarios. A demonstration version of this part of the *Life/Style OnLine*<sup>®</sup> application can also be accessed at <http://www.fafnir.berry.edu/ConsumersOnLine>. In this section of the application, the respondent “moves” from room to room in the prototype individual’s home and selects room-specific assortments of products that she believes are appropriate to that social context. Each scenario includes a setting (e.g., a dinner party, backyard barbecue, or dinner at a restaurant), activities (e.g., dinner, a romantic encounter, leisure activities), and people (e.g., friends, family, workmates). Information about each of these scenario features can be varied independently. For example, different groups of respondents may be presented with scenarios that vary in the formality of the setting in which the activity occurs (e.g., dinner at home versus at a restaurant) or the familiarity of the people involved (e.g., friends versus colleagues), and so on.

In the current phase of the project the respondent is asked to make selections from six discrete categories within each room on behalf of a fictional twentysomething woman. For example, when the respondent is sent to the closet, she chooses within the following categories: outfits, shoes, perfumes, watches, hairstyles, and purses. When the respondent clicks on a category heading, she is shown a set of thumbnail images (50 × 50 pixels each), each of which can be enlarged for closer inspection (150 × 150 pixels). She is asked to make a selection by clicking on the product image she desires. This process continues until a final selection is made for each of the six product categories. Figure 3 provides an example of the screen contents for a final product assortment selected from the “closet.”

Each scenario is mapped onto a set of rooms relevant to that scenario. For example, a dinner party scenario might begin with a visit to the bathroom where personal care product categories can be presented. Next, the respondent



**FIGURE 3**

Thumbnail images showing the “collage” of product images selected from the “closet” to go with a dinner party scenario. The thumbnail images are 50 × 50 pixels while full-sized images are 150 × 150 pixels

navigates to the closet, where an outfit for the evening is chosen (e.g., an outfit, shoes, purse, and so on), followed by a visit to the kitchen for the selection of food and beverages. The respondent might then be sent to the living room to choose furnishings (e.g., couches, carpeting, artwork, etc.) or to the dining room to select table-setting elements (flatware patterns, silverware, etc.). Since these physical “spaces” are virtual, respondents can be asked to “redecorate” them for different scenarios. Thus, for example, the stylistic elements deemed ideally appropriate for a living room setting when a dinner party involves workmates might be quite different from that desired when friends are invited.

The product assortments essentially constitute a projective task in which visual (the person image from the life layer) and verbal

(the scenario description) cues can be used as prompts. The collages are built up over time as the respondent iterates through the task. Following each product choice, the respondent is sent back to the product categories associated with the room location in which selections are being made and is shown the current status of the collage. The respondent can return to a product category as often as necessary and thus is free to modify her choices until she is fully satisfied with the resulting product assortment.

Following the creation of an assortment of consumption choices for a given scenario, the respondent is sent to a questionnaire layer where varying question formats are used to examine perceptions of the assortments (collages) as well as their constituent elements. In addition, respondents can be asked to provide input concerning what elements (i.e., products and/or product features) they might have preferred to include in the assortments but which were not included in the set of visual stimuli presented by the researcher.

#### *Other Applications of the Style Layer*

The Style layer of *Life/Style OnLine*<sup>®</sup> is fundamentally a high-tech collage-creating tool, but one that automates the application of collage-creation methods from the qualitative to quantitative domains. The basic structure of the task involves linking a prompt with the choice of objects within categories. For those cases where the respondent might not wish to include the category at all (e.g., alcoholic beverages may not be desired by some consumers) the researcher may include the option to not choose the category. Although in the *Life/Style OnLine*<sup>®</sup> application we have limited respondents to a single within-category choice option, this feature can be modified either by repeating a product category and permitting multiple choices or by modifying the software itself to allow for multiple choices.

The researcher can easily manipulate the specific prompts, categories, and category contents. Thus, the prompt can be visual, verbal, or of a combined form; it can describe a person, place, situation, or an element of a marketing

strategy. For example, a study of the meaning of celebrity might use celebrity images as prompts, followed by category contents that relate these images to behaviors, attitudes, or consumption habits associated with, say, Meg Ryan versus Gwyneth Paltrow. Alternatively, an advertising study might use a product description, or visual image, and target market description as prompts and ask respondents to select visual elements appropriate for the advertising execution (e.g., settings, props, costumes, and so on).

Similarly, the categories and category contents are flexible. In *Life/Style OnLine*<sup>®</sup> the categories and their contents are presented in a visual format, with short descriptive labels for the categories. There are several choice points, however, where the software can provide written cues to augment the visual information presented. For example, a study involving fashion items might emphasize stylistic elements in the visual channel and manipulate the impact of brand cues by systematically varying the brand names associated with those styles.

The flexibility of category structure and content also permits numerous permutations. Thus, a study of interior décor preferences might use rooms of a house as the categories with the contents of each containing stylistic variations of the décor of that room. In contrast, a conjoint analysis of product features and price sensitivity might present the product category as the prompt, product features as the categories, and feature choices as the options within each category. As each feature choice is selected the evolving collage may be presented along with information concerning changes in product pricing. Because of this flexibility, any number of other research issues can be pursued. Other possible applications include:

- Symbolic product associations and brand communities (e.g., mapping cultural settings, sports events, retail atmospherics onto product assortments).
- Consumer socialization/acculturation and rituals (e.g., bridal registry application with respondents picking ideal product assortments).
- Celebrity and endorser selections (e.g.,

perceived lifestyle elements associated with different celebrities with similar Q ratings).

- Product usage studies (e.g., the prompt is the product purchased, categories are steps associated with product usage, and within-category choices are options for product usage at each step).
- Conjoint analyses and other contingency tasks.
- Qualitative studies (e.g., construction of collages, auto-driving studies, visual projects, etc.).
- Cross-cultural studies (e.g., incorporation of visual stimuli to overcome semantic barriers).

### *Managerial Applicability*

The system's open architecture allows *Life/Style OnLine*® to include virtually any set of images and accompanying feedback desired by the user. Adaptation to many research issues is advantageous due to the system's ability to integrate a broad set of stimuli, present these in comfortable and accessible environments in asynchronous time frames, aggregate responses across large numbers of respondents in multiple locations, and provide data to researchers almost instantly. These capabilities render this methodology ideally suited to a variety of research practitioner applications. For example, the system can be instrumented on a virtual network delivered over the Internet but only accessible at a marketing research firm's central testing facilities. Alternatively, a retailer may install the system as part of an information kiosk system where operations are handled locally during hours of operation and where data are aggregated periodically. Coupled with the structural flexibility of the system, this approach has the potential to accommodate the specific research needs of organizations spanning a wide spectrum of product categories ranging from soft goods and home furnishings to services such as tourism and entertainment. Some potential managerial applications include:

- New product development.
- Packaging/logo/product design options.

- Advertising pre- and posttesting using animatics, aided recall, etc.
- Pretesting of celebrity/endorser matchups.
- Online consumer surveys.
- Trend forecasting and diffusion studies.
- Brand equity.
- Simulations of store layout, tourism venues, etc.
- E-commerce/data mining.
- Product bundling options for health care, financial services, etc.
- Cross-category promotion and product placement decisions.

### **EXTENDING THE VISION: ISSUES, PROBLEMS, AND OPPORTUNITIES**

While not a panacea, *Life/Style OnLine*® does hint at the potential for online research to provide much more than a glitzy way to conduct a traditional paper-and-pencil study. The system addresses obstacles that we believe have discouraged others from visually grounded research applications. It is amenable to virtually any form of stimulus input, whether in the form of .jpg files, audio clips, .mov files, etc., it is platform-independent, and download time associated with large graphics files can be minimized. The house metaphor developed in the current project provides a way to present consumers with a variety of research questions in a format they can easily grasp and to which they will enthusiastically respond. Finally, the proactive recruitment of respondents who fit carefully pre-specified criteria (and the password protection of the system) alleviates much of the concern about the representativeness of online respondents.

As we develop the system, we continue to recognize numerous additional research issues that can potentially be addressed. These include the development of intelligent agents that learn respondents' preferences and modify product options offered in subsequent iterations of the instrument, the creation of visual avatars by the respondent to assist in navigation through the site (and how these virtual reflec-

tions of the self can themselves be regarded as projectives), the comparison of designers' and consumers' conceptions of ideal products, the examination of contextual effects on product evaluation, and the study of individual differences in contextual sensitivity and visual versus verbal processing of research stimuli. In particular, a visually based system promises to be particularly useful for research populations that can be better reached on the visual channel, including, teens, foreign consumers, or even illiterate respondents. We are just beginning to explore the promise of this methodology, and we hope our "vision" of the future is shared by many of our colleagues.

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