

Observations: SAM: The Self-Assessment Manikin **An Efficient Cross-Cultural Measurement Of Emotional Response¹**

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Although consumer research began focusing on emotional response to advertising during the 1980s (Goodstein, Edell, and Chapman Moore, 1990; Burke and Edell, 1989; Aaker, Stayman, and Vezina, 1988; Holbrook and Batra, 1988), perhaps one of the most practical measures of affective response has only recently emerged. Part of the difficulty in developing measures of emotional response stems from the complexity of emotion itself (Plummer and Leckenby, 1985). Researchers have explored several different measurement formats including: verbal self-reports (adjective checklists), physiological techniques, photodecks, and dial-turning instruments.

While many of these methods have been validated and accepted to some degree, the research field is continually changing, creating the need for an alternative measurement scale. Much of the recent evidence supports a three-dimensional approach for accurately assessing emotional response, as models with less than three dimensions may not accurately represent the complete affective experience (Russell, 1989; Daly, Lancee, and Polivy, 1983; Mehrabian and Russell, 1977; Havlena and Holbrook, 1986). The research of Mehrabian and Russell produce evidence for three such dimensions through a coupling of studies of nonverbal communication, the semantic differential, and those by Bush (1973) with verbal-report indications for a larger number of dimensions (Mehrabian and Russell, 1977). The results demonstrated that all emotions can be accurately described in terms of three independent and bipolar dimensions: pleasure-displeasure, degree of arousal, and dominance-submissiveness. These elements are autonomous, as differing values along any of these three dimensions can occur concurrently without affecting one another (Mehrabian and Russell, 1977). Logically then, emotion is not limited to isolated incidents, rather, it is ever-present. This theory suggests that an individual is in a constant state of emotion, "a state that can be described as a region within a three-dimensional space" (Mehrabian and Russell, 1977). Such a technique could not only provide a certain sense of depth to emotions, but could create a logical point of origin for each descriptor placed on a feeling. In this manner, moods could be plotted along a multidimensional continuum based on the three basic emotions of pleasure, arousal, and dominance.

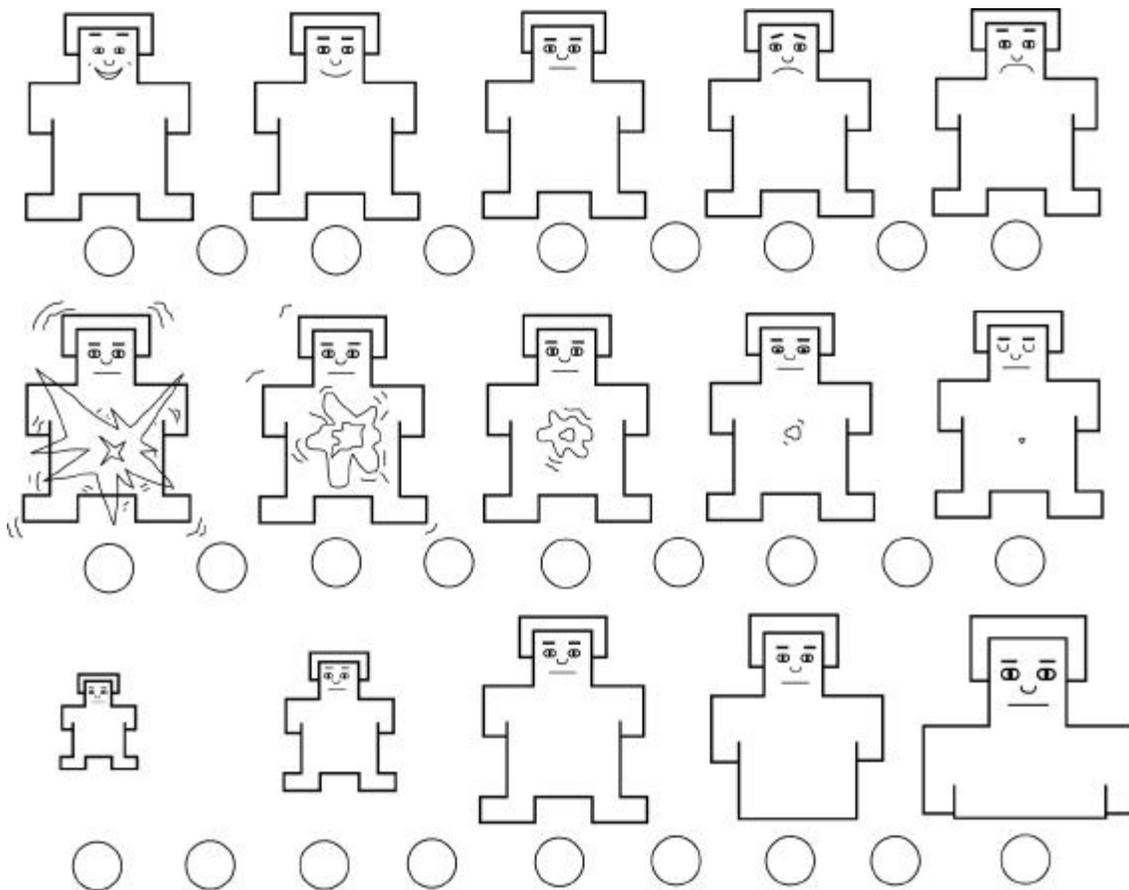
The pleasure, arousal, and dominance (PAD) model has gained widespread attention in advertising research (Havlena and Holbrook, 1986) and has great potential for use in strategy formulation and copy development (Zeitlin and Westwood, 1986). Researchers Havlena and Holbrook found PAD to capture more information and to be "more useful than Plutchik's scheme for positioning consumption experiences in an emotion space and for developing experience-specific emotional profiles." The three-dimensional model was also praised for permitting descriptions of experiences in terms of more "basic, concrete" emotions as well as in the more abstract dimensions (Havlena and Holbrook, 1986). To make the PAD approach functional, by quickly establishing a response to a given stimulus; applicable, by accurately reflecting a subject's full range of feelings; and useful, by measuring affective responses among many diverse audiences without linguistic interference, a visual rather than a verbal response measure is needed.

The Self-Assessment Manikin (SAM)

The Self-Assessment Manikin (SAM) (Lang, 1985) presents a promising solution to the problems that have been associated with measuring emotional response to advertising (Morris et al., 1993; Morris and McMullen, 1993; Morris and Waine, 1993; Morris, Bradley, and Wei, 1994; Morris, Sutherland, Karrh, and Herr, 1994; Morris and Karrh, 1994). SAM visually represents Mehrabian and Russell's three PAD dimensions (see Figure 1) and was designed as an alternative to the sometimes-cumbersome verbal self-report measures (Lang, 1985).

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FIGURE 1
SAM The Self-Assessment Manikin



SAM depicts each PAD dimension with a graphic character arrayed along a continuous nine-point scale. For pleasure, SAM ranges from a smiling, happy figure to a frowning, unhappy figure; for arousal, SAM ranges from sleepy with eyes closed to excited with eyes open. The dominance scale shows SAM ranging from a very small figure representing a feeling of being controlled or submissive to a very large figure representing in-control or a powerful feeling. SAM has been used in numerous psycho-physiological studies since its development. The correlations between scores obtained using SAM and those obtained from Mehrabian and Russell's semantic differential procedure were impressive for both pleasure (.94) and arousal (.94) and smaller but still substantial for dominance (.66) (Lang, 1985). Similar results were found by Morris and Bradley (1994) through a SAM reevaluation of 135 emotion adjectives that were factor analyzed by Mehrabian and Russell.

It is clear that visually oriented scales using a graphic character eliminate the majority of problems associated with verbal measures or nonverbal measures that are based on human photographs. In addition, subjects can complete ratings on the SAM scales in less than 15 seconds, allowing numerous stimuli to be tested in a short amount of time and causing less respondent wear out than the verbal measures. Subjects have expressed greater interest in SAM ratings versus verbal self-reports in a number of studies and have stated that SAM is more likely to hold their attention (Lang, 1985). A third advantage is that both children and adults readily identify with the SAM figure and easily understand the emotional dimensions it represents (Lang, 1985). Because SAM is a culture-free, language-free measurement it is suitable for use in different countries and cultures (Bradley, Greenwald, and Hamm, 1994; Morris, Bradley, and Wei, 1994).

SAM for Advertising Studies

The use of SAM to measure consumers' emotional response to advertising messages has been demonstrated in a number of studies, both in the United States and abroad. These include: responses by Americans and Taiwanese to the same Globally Standardized Television Advertising (Morris, Bradley, and Wei, 1994); a Comparison of responses to storyboards, animatics, and finished commercials (Morris and Waine, 1993); differences in responses by creative strategy topology (Morris, Sutherland, Karrh, and Herr, 1994); identifying multiple emotional responses within a single television commercial (Morris and McMullen, 1993); and identifying gender differences and the relative stability of emotional responses to competitive commercials and public-service announcements across subjects and order of presentation (Morris and Karrh, 1994).

In each study, SAM has provided interesting and consistent results. For example, in the global study, findings indicate that emotional responses to "standardized global advertising" are generally the same in the United States and Taiwan. Cultural differences in emotional responses to standardized global advertising seem to depend heavily on the ad execution. The type of commercial, the spokespersons, and the storyline all appear to affect the standardized spots ability to produce consistent emotional responses across cultures (Morris, Bradley, and Wei, 1994).

In the storyboard-animatic-finished commercial comparison, the results indicate that overall, emotional-response scores for preproduction versions are not significantly different from scores for finished commercials. Significant differences were found for several ads in two distinct groups: commercials, which require enhanced audiovisual production techniques to carry the main message and commercials for food products (Morris and Waine, 1993).

Finally, two studies have found differences between genders and between the sequencing of some advertisements or both. As expected, some commercials produce different responses in males and females. The responses are not necessarily better, just different. A few commercials seem to be affected by the ads that precede them. Again, the findings are not necessarily better or worse, just different. These commercials seem to lack the stability found in the unaffected ads.

Application to Advertising Strategy and Evaluation

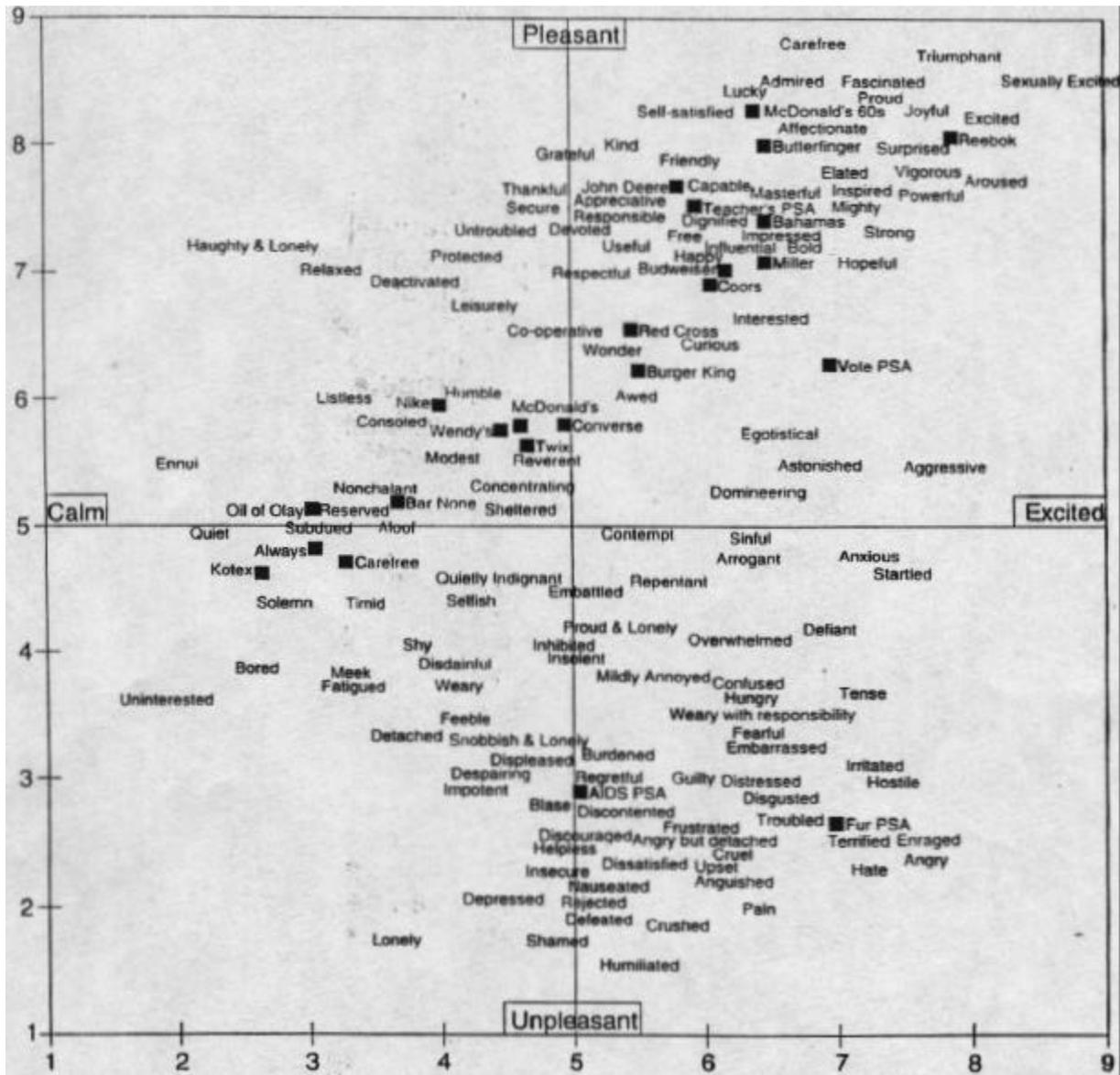
There are three methods for reporting SAM-PAD results for evaluating ads or for providing affective insights for use in creative strategy and product positioning. First, each ad or layout has pleasure-arousal-dominance scores. The PAD ratings may be used to evaluate the advertiser's success in reaching the desired levels of response or goals or may be compared to other ad scores. Scores reported by subjects viewing a commercial from a campaign may be compared to other ads or promotional devices in that campaign or to norms for commercials from previous or competitive campaigns. Second, each ad has a place in a pleasure by arousal space. The space may be divided into four quadrants for further analysis (see Figure 2).

FIGURE 2

Pleasure x Arousal Space

High Pleasure Low Arousal	High Pleasure High Arousal
Low Pleasure Low Arousal	Low Pleasure High Arousal

FIGURE 3
Perceptual Map of Advertisements in Pleasure x Arousal Space



Commercials may be examined for their quadrant position and compared to ads with similar placement. Further examination could contrast and compare ads within the quadrant or in a nearby space for similarities and differences in creative strategy, executional variables, talent, semiotics, and product positioning.

Third, each of the 135 Mehrabian and Russell emotion adjectives have been scored with SAM to obtain pleasure and arousal scores for each word. The scores were compared to verbal analysis of the adjectives by Mehrabian and Russell (1977). The analysis showed correlations of .93 for pleasure, .93 for arousal, and .66 for dominance. The adjectives may be placed in the same space occupied by the advertisements. Then, each advertisement is surrounded by adjectives, which may be used to describe the feelings of the viewers or target audience after seeing that commercial. These adjectives may be useful in refining creative strategy, choosing talent, or in selecting the appropriate executional strategy. The pleasure by arousal space for ads of several recently evaluated competitive products and public service

announcements with the 135 emotion adjectives superimposed is presented in Figure 3.

Finally, the adjectives obtained from the advertisement-adjective space may be used in a qualitative setting. After reporting their feelings, subjects may be probed to determine the motives behind their responses. Furthermore, a focus-group moderator would have insights into the feelings of each participant and may use this information to compare to the verbalized feelings. Often initial verbalized feelings are not the true feelings of the participants and the disparity between their SAM-reported feelings and their verbalized feelings may be explored. Moreover, differences in responses among the participants may also be explored (Morris and Karrh, 1994).

SAM appears to be a very useful, easy to implement tool for measuring affective responses with a wide range of applications in marketing communications. Although all of the marketing communications research applications reported here have been limited to evaluating television commercials, SAM's potential is far greater. SAM may be used to evaluate feelings for other promotional tools or for the brand itself. Some interesting future analyses will include comparing feelings for the brand to feelings obtained after watching the brand's commercial.

Although SAM is ready for immediate application, future studies will continue to examine SAM's role in marketing communications research. SAM and the related tools of analysis AdSAM[®] offer new insights into consumers' feelings about the products they buy and the advertisements they see. These methods appear to be more useful and telling than the previous methods for measuring affective response to marketing communications. The validation research for both SAM and PAD is extensive, with the work of such researchers as Havlena, Holbrook, Mehrabian, and Russell confirming the dimensions of PAD and numerous studies regarding SAM in progress. At present, studies by Lang, Bradley, and Morris confirm the reliability of SAM globally, on both the psychological and communication levels. Research is currently underway to begin assessing SAM's relation to brand awareness, differentiation, importance, satisfaction, preference, intent to purchase, ad interest level, and believability. The function of emotion in creating each of the above is invaluable to practitioners, both in developing and evaluating successful products and campaigns.

References

- Aaker, D. A.; D. M. Stayman, and R. Vezina. "Identifying Feelings Elicited by Advertising." *Psychology & Marketing* 5, 1 (1988): 1—16.
- Bradley, M. M.; M. K. Greenwald; and A. O. Hamm. "Affective Picture Processing." In *The Structure of Emotion: Psycho physiological, Cognitive, and Clinical Aspects*, N. Birbaumer and A. Ohman, eds. Toronto: Hugute-Huber, 1994.
- Burke, Nl. C., and J. A. Edell. "The Impact of Feelings on Ad-Based Affect and Cognition." *Journal of Marketing Research* 26 (1989): 69-83.
- Cacioppo, J. T., and R. F. Petty. "The Elaboration Likelihood Model: The Role of Affect and Affect-Laden Information Processing in Persuasion." In *Cognitive and Affective Responses to Advertising*, P. Cafferata and A. Tybout, eds. Lexington, MA: Lexington Press. 1989.
- Daly, F. M.; W. J. Lawrence; and J. Polivy. "A Conical Model for the Taxonomy of Emotional Experience." *Journal of Personality and Social Psychology* 45, 2 (1983): 443-457.
- Goodstein, R. C.; J. A. Edell; and M. Chapman Moore. "When Are Feelings Generated? Assessing the Presence and Reliability of Feelings Based on Storyboards and Animatics." In *Emotion in Advertising*, S. Agres and T. M. Dubitsky, eds. NY: Quorum. 1990.
- Havlena, W. J. and M. B. Holbrook. "The Varieties of Consumption Experience: Comparing Two Typologies of Emotions in Consumer Behavior." *Journal of Consumer Research* 13 (1986): 394-404.
- Holbrook. M. B., and R. Batra. "Assessing the Role of Emotions as Mediators of Consumer Responses to Advertising." *Journal of Consumer Research* 14 (1988): 404-419.
- _____ and J. O'Shaughnessy. "The Role of Emotion in Advertising." *Psychology & Marketing* 1, 2(1984): 45-64.

Lang, P. J. *The Cognitive Psychophysiology of Emotion: Anxiety and the Anxiety Disorders*. Hillsdale, NJ: Lawrence Erlbaum, 1985.

Mehrabian, A., and J. Russell. "Evidence for a Three-Factor Theory of Emotions." *Journal of Research in Personality* 11 (1977): 273-94.

Morris, Jon D., and Margaret M. Bradley. "Assessing Affective Reactions to Emotion Terms and Television Advertisements with (SAM) the Self-Assessment Manikin." Working paper. University of Florida, College of Journalism and Communications, 1994.

_____; _____ and Lo Ping Wei. "Global Advertising and Affective Response: SAM Ratings in U.S.A. and Taiwan." Working paper, University of Florida, College of Journalism and Communications 1994.

_____; _____ Catherine A. Waine, and Joseph B. Lang. "Assessing Emotional Responses to Advertisements with (SAM) the Self-Assessment Manikin." In the *Proceedings of the Allied Southern Business Association, 1993 Annual Meeting*. Allied Southern Business Association, 1993

_____ and James A. Karrh. "Assessing Affective Response to Television Advertising Using the Self-Assessment Manikin (SAM)." Working paper, University of Florida, College of Journalism and Communications, 1994.

_____ and J. McMullen. "Measuring Multiple Emotional Responses to a Single Television Commercial." In *Advances in Consumer Research Vol. XXI*, Chris Allen and Jim Muncy, eds. Provo, UT: Association for Consumer Research, 1993.

_____; John Sutherland; James A. Karrh and Dana Lee Herr. "Differences in Consumers' Affective Responses to Television Commercials by Creative Strategy Typology." Working paper, University of Florida, College of Journalism and Communications, 1994.

_____ and C. Waine. "Managing the Creative Effort: Pre-Production and Post-Production Measures of Emotional Response." In the *Proceedings of the 1993 Conference of the American Academy of Advertising*. American Academy of Advertising, 1993.

Pham, Michael Tuan; G. David Hughes; and Joel B. Cohen. "Validating a Dial-Turning instrument for Real-Time Measurement of Affective and Evaluative Responses to Advertising." Report number 93-116. Working paper, Marketing Science Institute, 1993.

Plummer, J. T., and J. D. Leckenby. "Copy Research Foundations and Futures." In *Transcript Proceedings of the Second Annual Copy Research Workshop*. NY: Advertising Research Foundation. 1985.

Russell, James A. "Measures of Emotion." In *Emotion: Theory, Research and Experience*, R. Plutchik and H. Kellerman, eds. San Diego: Academic Press, 1989.

Zeitlin, D. M. and R. A. Westwood. "Measuring Emotional Response." *Journal of Advertising Research* 26, 5 (1986): 34-44.