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INCORPORATING ADVERTISING STRATEGY INTO COMPUTER-BASED BUSINESS SIMULATIONS: A VALIDATION STUDY

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ABSTRACT

A paper presented at the 1993 ABSEL national conference suggested a method for incorporating advertising creative strategy into a computer-based business simulation game. The paper presented an extensive literature review and developed considerable theoretical support for the proposed methodology. However, it provided no empirical evidence in support of the method's validity. This paper reports a pilot study aimed at testing the method's validity. The results fail to support the method, suggesting a number of problems that need to be addressed prior to implementing the method in an actual game environment.

INTRODUCTION

In a 1993 ABSEL paper, Cannon (1993) suggested that business simulation games might include a module for addressing advertising creative strategy decisions. He noted that business simulation games have traditionally paid relatively little attention to advertising variables. Keys (1987) found that only five out of ten total enterprise games included advertising variables, and these were limited to budget decisions. Marketing games do not fare much better (Biggs 1987; Burns and Gentry 1992). They typically include a more detailed set of allocations, including such promotional elements as advertising allowances for retailers. Point-of-purchase displays, sales promotion, broadcast versus print media. But these do not begin to tap the broad range of advertising and promotional principles covered in even the most general of marketing classes.

Some games, such as Compete (Faria, Nulsen and Roussos 1 984), The Market Place (Cadotte 1990) and Markstrat 2 (Larreche and Gatignon 1990) do include product attribute variables, drawing on the attitudinally based advertising strategy framework proposed by Boyd, Ray and Strong (1972) and the general logic of product positioning through preference and perceptual mapping (Johnson 1971). Including these variables in the simulation represents a major improvement over the more basic budget-oriented games. But even so, advertising decisions include more than budget allocations and product positioning.

Cannon's paper suggests that a game might be developed which includes variables addressing the underlying persuasive process used by advertising -- the method by which advertising influences preference and perceptual change. This is creative (as opposed to advertising) strategy. After reviewing the major models of creative strategy, including several that are currently in use by advertising agencies, the paper suggests a specific theoretical model for conceptualizing creative strategy in the context of a business simulation game, and with it, a specific set of operational procedures for incorporating creative strategy decisions into the game.

Notwithstanding the strong theoretical support for the creative strategy model, the paper provided no empirical support for the method's validity, either in general or in the specific context of a simulation game environment. The purpose of this paper is to present the results of a preliminary validation study.

THE STUDY

The basic premise of this study is twofold: First, the methodology proposed by Cannon (1993) is both reliable and valid. That is, the constructs and relationships upon which the model was based map accurately onto reality, and that this mapping can be done by expert raters observing actual ads (or student renditions of them) and actual or simulated advertising situations. Second, on the whole, professionally prepared advertising will tend to be effective. If this is true, then it should score well according to Cannon's (1993) simulation methodology if the methodology is valid.

The Simulation Methodology

The basic underlying framework for the creative strategy model is Katz (1960) functional attitude theory. Katz suggests that attitudes, and by extension, attitude change (persuasion), can best be understood in terms of the functions the attitudes serve. These include four major categories:

1. **Utilitarian.** Attitudes place positive value on objects that tend to give a person direct utility. For instance, a consumer may develop a positive attitude towards a low-priced product because it serves money, thus providing utility for additional purchases.

2. **Ego-defensive.** Attitudes place positive value on objects that serve to eliminate inner tension between conflicting needs and values. For instance, a consumer may develop a positive attitude toward a new fragrance that provides symbolic expression for sexual impulses that would otherwise be held inside.

3. Value-expressive. Attitudes place positive value on objects that serve to express important personal values. For instance, a consumer may develop a positive attitude toward fashions that represent conservatism, rebellion, high style, a particular socioeconomic group, an ethnic group, or any other concept in which the consumer has a strong value investment.

4. Knowledge-oriented Attitudes place, positive value on objects that serve to simplify or otherwise facilitate peoples understanding of the world around them. For instance, a consumer may develop a positive attitude toward a particular brand of beer simply because its advertising associates it with a pleasant set of circumstances, thus relieving the consumer of having to process detailed information about the brand.

Cannon and Boglarsky (1991) used this basic classification to develop a detailed set of functional attitude classifications for advertising. These serve as the basis for the creative strategy model.

The second element of the model is a 'contingency theory of strategy selection, where the appropriate strategy depends on the nature of the advertising situation. The general logic follows the Foote, Cone & Belding (FCB Grid) creative planning system (Vaughn 1980, 1986; Ratchford 1987; Ratchford end Vaughn 1989). The system classifies advertising situations along two dimension.: First, it distinguishes between thinking versus "feeling" decision.. While these are not defined with £ high level of theoretical rigor in the discussion of ho FCB Grid, they appear to be related to Wells' (Puto end Wells 1983; Wells 1989) notion of "informational" verses transformational" advertising. Rossiter and Percy (Rossiter and Percy 1980. 1987; Rossiter, Percy and Donovan 1991; Percy and Rossiter 1992) note that "thinking" implies a theory of reasoned action, such as that proposed by Fishbeins's attitude theory (Fishbein and Ajzen 1975). It is most applicable to verbal learning, while feeling tends to draw on visual imagery. Furthermore, they suggest that informational versus transformational effects can be linked to Katz (1980) functional attitude theory. The most recent version of the FCB Grid (Ratchford end Vaughn 1989) takes a similar approach.

While Cannon (1993) acknowledges the theoretical advantages of Well.' and the Percy and Rossiter approaches, he based his simulation method on the FCB model. The reasons were pragmatic: First, it has actually been used in hundreds of practical advertising situations over a period of more than ten years. Second, it provides a simple set of scales (Ratchford 1987) for classifying advertising situations. Cannon end Boglarsky's (1991) version of Katz' (1980) functional attitude framework complements the FCB classificational system with an operational sot of categories for analyzing creative strategies.

Using the FCB scales and functional classifications, the simulation model developed coordinates for each creative execution and for the product being advertised. The effectiveness of the strategy wag based on the Euclidean distance between these coordinates. The Ion the distance, the more effective the advertising (exhibit 1).

EXHIBIT 1:
A DECISION MODEL FOR SELECTING CREATIVE STRATEGIES

		Level of Consumer Decision Making	
		Thinking	Feeling
Level of Message Involvement	High	0 Utilitarian ● Knowledge oriented (consistency)	●Ego-defensive
	Low	0 Knowledge-Oriented 1 (stereotyping)	● Value-expressive

A Test of Validity

In order to tout the validity of the of the simulation methodology, we used the FCB scale. to assess the advertising situation being addressed by a group of award-winning advertisements. We then used the creative strategy classifications adapted from Katz (1980) to determine the creative orientation of the ads. For each ad, we would have two points in two-dimensional space. On the whole, we would expect the distance between there points to be less than the distance between the points representing the ads' creative orientations and some arbitrary neutral point, such as the coordinate representing the average advertising situation. Formally stated, this gives rise to the following hypotheses:

H_1: The rated creative strategy coordinates of award-winning ads are closer to the rated advertising situations they address than they are to a central coordinate that is neutral to all advertising situations.

METHODOLOGY

Data for the study wore taken tram evaluations of 20 ads selected from the print advertising section of <u>Communication Arts</u> annual review of advertising. The creative orientation of the advertisements was classified by three different raters (a professor of advertising and two doctoral students), each of whom was familiar with both the theory and operationalization of the Cannon and Boglarsky creative strategy classifications.

Determining the Creative Orientation of the Ads

Following the guidelines provided by Cannon 41993), the creative orientation ratings for each ad were made using the scales shown in exhibit 2. Consistent with the framework shown in exhibit 1, each functional orientation was assumed to represent a particular quadrant. For instance, the *utilitarian* and *know/edge-oriented (consistency)* orientations would represent quadrant 1. The actual coordinates for each ad were determined as follows:

EXHIBIT 2:
A SCALE FOR RATING THE CREATIVE ORIENTATION OF ADS

Indicate the degree to which your advertising will incorporate each of the following types of appeal:

Utilitarian Appeals:

The advertisement shows how the product or its attributes address needs that are not currently being satisfied for target market members.

Not at all X:_:_:_:_Very much

The advertising shows how the product or its attributes might merit rising expectations, delivering a new level of satisfaction that target market members didn't know was possible.

No tat all X:_:_:_:_Very much

Ego-Defensive Appeals:

The advertisement provides a threatening cue to target market members and then offers a product or attribute as an answer to the threat.

Not at all X:_:_:_:_Very much

The advertisement provides support to remove threats that inhibit the expression of a desired attitude toward the product or attribute.

Not at all _:_:_:X:_Very much

The advertisement provides an authority figure threat of having to take responsibility for one's regarding the product or attribute to remove the own decisions

Not at all X:_:_:_:_Very much

The advertisement establishes the product or attribute as a symbolic outlet for the psychic energy trapped by repressed impulses.

Not at all _:_:X:_:_Very much

Value-Expressive Appeals:

The advertisement seeks to establish the product or attribute es a symbol of values that characterize target market members' actual self-image.

Not at all _:_:_:X:_Very much

The advertisement seeks to establish the product or attribute as a symbol of values that characterize target market members ideal self-image.

Not at all _:_:_:_:X very much

Knowledge-Oriented Appeals:

The advertisement points out inconsistencies in current target market attitudes in order to stimulate a positive change in favor of the product or attribute.

Not at all X:_:_:_:_ Very much

The advertisement seeks to stereotype a product or attributes in a way that will evoke a positive attitude.

Not at all _:_:_:_:X Very much

1. Determine the score for each of the items shown in exhibit 2.

2. Select the highest rating from among the orientations representing that quadrant. For instance, the highest rating for quadrant one was a "1" -- the rating for both of the two types of utilitarian appeals end the knowledge-oriented (consistency) appeal. The highest rating for quadrant two was a "4" for the second (social support) ego-defensive appeal. The rating for quadrant three was a "5," since the only function listed for quadrant three is knowledge-oriented (stereotyping). The rating for quadrant four was "5," representing the rating for the value-expressive (ideal self-image) appeal.

3. Establish coordinates for each quadrant, using the highest rating and the range of values that defines the quadrant. For instance, the "1" rating for quadrant one would be translated into coordinates of (-1,1). The coordinates for quadrant two would be (4,4), quadrant three (-3.-3), and quadrant four (5,-5)

4. Establish the overall coordinates for the ad by summing the coordinates for each quadrant. Thus, the coordinates for the ad portrayed in exhibit 2 would be (-1 +4-5+5.1 +4-5-5) or (3-5).

Determining the Nature of the Advertising Situation

The coordinates of each advertising situation were determined using the scales shown in exhibit 3. The first five questions of the scales shown in exhibit 3 address the level of consumer decision making -- the degree to which consumers are likely to process an ad in a "thinking" versus "feeling" mode. The last three determine the level of involvement. The X coordinate of

the advertising situation, then, is determined by averaging the ratings on questions 1-5. The V coordinate is determined by averaging the ratings on questions 6-8. Thus, the coordinates of the situation depicted in exhibit 3 would be (2.4,1.0).

EXHIBIT 3:
SCALES FOR CLASSIFYING ADVERTISING SITUATIONS

Feeling/Thinking Scale:

1. To what extent is the product/brand decision rational?

Very :_:_:_:_:_:_:_:_X:_:_: Very
Much −5-4 -3 −2 -1 =2 =3 =4 =5 Little

2. To what extent is the decision based on functional facts?

Very :_:_:_:_:_:_:_:_:X:_:_: Very
Much −5 −4 −3 −2 −1 0 +1 +2 +3 +4 +5 Little

3. To what extent is the product/brand decision based on a lot of feeling?

Very :_:_:_:_:_:_:_X:_:_: Very
Little -5 −4 −3 −2 −1 0 =1 =1 =3 =4 =5 Much

4. To what extent does the product/brand decision express one's personality?

Very :_:_:_:_:_:_:_:_:X:_:_ Very
Little −5 −4 −3 −2 −1 0 +1 +2 +3 +4 +5 Much

5. To what extent is the product/brand decision based on looks, taste, touch, smell, or sound (sensory affects)?

Very :_:_:_:_:X:_:_:_:_: Very
Little −5 −4 −3 −2 −1 0 +1 +2 +3 +4 +5 Much

INVOLVEMENT SCALE

6. How important is the product/brand decision?

Very :_:_:_:_:_:_:_:X:_:_: Very
Unimportant -5 4 -3-2 -1 0 +1 +2 +3 +4 +5 Important

7. How much do you have to lose by choosing the wrong product/brand?

Very :_:_:_:_:_:_:_:X:_:_: Very
Little −5 −4 −3 −2 −1 0 +1 +2 +3 +4 +5 Much

8. How much thought does the decision require?

Very _:_:X:_:_:_:_:_:_:_:_: Very
Little −5 −4 −3 −2 −1 0 +1 +2 +3 +4 +5 Much

Determining the Distance between an Ad's Creative Orientation and the Advertising Situation

The distance between the creative orientation of each ad and the advertising situation is simply the Euclidean distance between them. If (X_a,Y_a) represents the coordinates of the creative strategy and if (X_s,Y_s) represents the coordinates of the advertising situation, the distance between them is D $-Xs)^2+(Y_a-Y_s)^2]^5$. Taking the data shown in exhibits 2 and 3 as discussed above, the distance would be $[(3.0.2.4)^2 + (1 .0--5.0)^2]^5$ - 6.0.

Evaluating the Ad-Situation Distance

The null hypothesis suggests that the distance between the ad and the ad situation will be no smaller for the ad and the average situation for all ads. To illustrate, suppose the study involved a set of ads that represented each quadrant equally. The average situation would be represented by the coordinates of (0,0). The distance under the null hypothesis would be $[(3.0-0.0)^2 + (-5.0-0.0)^2].^5$ =5 $\underline{8}$ Note that this is greater than 6.0. the distance between the ad and the actual situation. Thus, it does not support the alternative hypothesis.

Combining Rating Evaluations

The final results for the study were based on an average of ratings from each of the three raters. In order to check reliability, we also evaluated ratings across raters to see if they were consistent. This was done by correlating the evaluations of each evaluation variable -- the attitude functions portrayed in exhibit 2 and the situational scores extracted from the variables shown in exhibit 3.

RESULTS

Exhibit 4 summarizes the results of the study. It suggests that the average difference between the ad-situation distance and the corresponding distance between the ad and the average situation was -1 .0. Clearly, this fails to support the alternative hypothesis. The hypothesis requires a positive difference between the advertising-situation distance and the distance between the advertisement and a neutral point (coordinate 0,0). In fact, fourteen of the twenty ads tested had distances that were negative.

EXHIBIT 4:
DIFFERENCE BETWEEN ADVERTISING-SITUATION DISTANCE AND THE DISTANCE BETWEEN THE ADVERTISEMENT AND A NEUTRAL POINT (0,0)

A - Creative Orientation		D - Ad-Neutral Distance		
B - Advertising Situation		E - Test (Column C - Column D}		
C - Ad-Situation Distance				

AD	A	B	C	D	E

1	(-3.3 0.7)	(2.8 0.3)	7.1	3.4	-3.7
2	(0.0 2.0)	(0.3 2.0)	3.2	2.0	-1.2
3	(-2.7-3.3)	(1.3 -3.3)	4.4	4.4	0.0
4	(0.0-2.0)	(4.0-4.1)	5.8	4.0	-1.8
5	(-0.7-2.0)	(2.3 2.3)	6.9	3.6	-3.3
6	(-0.3 1.0)	(1.0 3.3)	4.3	2.0	-2.3
7	(-2.3 -0.3)	(-1.5 -1.3)	3.9	3.2	-0.7
8	(1.3 6.0)	(-0.9 -1.4)	7.9	6.4	-1.5
9	(0.0 6.0)	(-3.5 0.9)	6.2	6.0	-0.2
10	(-0.3 3.7)	(-1.7 0.4)	6.1	3.8	-2.3
11	(3.3 2.2)	(3.3 -1.9)	6.7	4.9	-1.9
12	(-1.0 3.7)	(-1.3 1.9)	2.8	4.0	0.2
13	(-0.3 3.7)	(-1.5 2.7)	1.9	3.7	1.8
14	(1.0 2.3)	(2.1 1.3)	2.5	2.9	0.5
15	(0.7 4.0)	(0.3 4.6)	1.6	4.1	2.5
16	(1.7 3.0)	(3.3-1.0)	5.8	4.4	-1.4
17	(2.0 5.3)	(0.5-1.4)	7.6	6.0	-1.6
18	(1 .3 2.0)	(2.7 -0.6)	5.4	2.4	-3.0
19	(0.0 1.3)	(1.8 1.3)	2.6	1.3	-1.3
20	(-1.0 3.0)	(0.0 2.9)	1.8	3.4	1.6

Average C-D: -1.0

All else being equal, this would appear to be damning for the theory upon which the creative strategy simulation was based. Upon closer examination, however, another possibility arises. An examination of inter-rater reliability showed that there was relatively low agreement across raters, notwithstanding the fact that all of the raters were highly knowledgeable and trained for the rating task. This is illustrated in the correlations shown in exhibit 5

EXHIBIT 5:
INTER-RATER RELIABILITY ACROSS THREE RATERS FOR
MEASURES OF CREATIVE ORIENTATION AND ADVERTISING
SITUATION IN ADVERTISEMENT 1

Creative Orientation (Exhibit 2)			Advertising Situation (Exhibit 3)		
	Rater 1	Rater 2		Rater 1	Rater 2
Rater 2	.81		Rater 2	.70	
Rater 3	.36	.41	Rater 3	.53	.00

Note that our hypothesis represented a relatively demanding test. The coordinates of (0.0) represent the central position of the strategy matrix shown in exhibit 1. An advertisement could very well be classified in the correct quadrants and still be closer to this neutral position. With the variability across raters, we have little confidence in the accuracy of either our evaluations of creative orientation or our evaluation of advertising situations. Given the sensitivity of our test, even a small error in ratings could cause the hypothesis to fail.

This is not to say that the hypothesis failed because of

measurement error. We simply do not know. Nor can we know until we devise a more accurate system for evaluating creative orientations and advertising situations.

SUMMARY AND CONCLUSIONS

The purpose of the study was to evaluate the validity of Cannon's (1993) model for simulating the effects of creative strategy. While the model has strong theoretical backing, this is no guarantee that it is valid. Indeed, theories change as we move the frontiers of knowledge. But there are also several other points at which the study might fail. The most basic is the simple operationalization of the variables. And it is at this point that the problems appeared. As we have noted, there was very low inter-rater reliability on all the measures used.

This is surprising for two reasons: First, all three of the raters were knowledgeable regarding both the scales and the theory they represent. Second, one set of scales -- those used for classifying the advertising situations -- are identical to the ones used by Foote, Cone and Belding Communications in their planning procedures. Over the years, they have been both tested (see Ratchford 1987) and used extensively. So, why were ours unreliable?

In addition to the overall validity of the theory and the reliability of our measurement instruments, there is a third possible reason for failure of the hypothesis: We do not know whether the basic premise of the study is correct -- that award-winning ads would be effective, and hence, would follow the theorized rules for effective advertising. The advertisements used in this study were selected by *Communication Arts* magazine to appear in their annual review based on editorial judgment of creative merit. There is not guarantee that these ads were truly effective.

None of this should be cause for despair. Science is a troublesome business. Our task must now turn to developing more stable measures of the constructs being studied. Once we have succeeded in that, then we can revisit the theoretical content of the creative strategy model and the question of evaluating the criteria against which it would be evaluated.

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