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THE COGNITIVE MEDIATION OF ADVERTISING ACCEPTANCE: REPLICATION AND EXTENSION

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Two competing views on the operation of advertisements on the individual are proposed : on the cognitive learning approach on the one hand and the cognitive response framework on the other. The first holds that advertising content is directly stored in memory after perception and therefore that advertising effectiveness is directly related to the strength of the memory trace. The second inserts cognitive and affective responses of yielding to the advertising message between perception and retention and posits that advertising effectiveness is related to these responses. — A simple 2×2 factorial experiment is run, trying to manipulate the extent and content of yielding responses. The results support the cognitive response framework at the disaggregated level; the condition means, while not clearly different, are patterned in the expected way.

THE COGNITIVE RESPONSE APPROACH

The cognitive processing approach and the related thought-monitoring methodology have been proposed as models for advertising effects and for advertising effectiveness research (Wright, 1973; Kapferer, 1973). The receiver is viewed as an active participant in the communication process, confronting incoming information with available cognitions and affect. This is in contrast with the cognitive learning approach which posits that the perceived message is directly stored in memory. The cognitive responses generated in the process are expected to be potent determinants of attitudinal acceptance. Cognitive responding mediates the effectiveness of the communication in addition to cognitive learning, or even to the exclusion of the latter (Greenwald, 1968), as demonstrated by Wright (1973) in the context of advertising communication. The cognitive response framework is an alternative to the cognitive learning approach to advertising effect, which has been the prevalent mode of testing for advertising results thus far (Lucas & Britt, 1963). As usual, in applied research, both principles are probably operative and one should study the conditions under which one or the other prevails.

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The cognitive response framework assumes a receiver who is willing and able to respond by supportive and resistive thoughts. Such ability and willingness depend on subject, stimulus and situation factors. Some combinations of these factors may engender only minimal cognitive response activities. As a result, it is important to investigate when and why the cognitive response model is applicable (ecological validity) (Ray, 1977). In contrast with the paradigms used in most experimental social psychological research, consumer behavior research abounds with situations in which receiver involvement with persuasive communications is minimal. The degree of product/communication involvement is a likely determinant of the extent of cognitive response, with higher involvement engendering more cognitive receiver activity.

If comparative advertisements can be expected to generate higher involvement than non-comparative ones, the hypothesis of more cognitive response under involvement does not find support in a study by Wilson and Muderrisoglu (1980).

In addition to the degree of responding, the content of cognitive responses matters. Wright (1973) found counterarguments more determinant of attitudinal acceptance than either support arguments or source derogation. He hypothesizes that the receiver finds it less exerting to rely on a single type of cognitive response and that the counterargument, as most reliable cue, will be selected when the receiver is less willing or able to attentively process the message. In contrast with the former study, which bases its results on a cross-sectional analysis at the individual level, Wilson and Muderrisoglu carry out comparisons of the extent and kind of response per condition (advertisement). The purpose is to investigate whether comparative vs. non-comparative and "intensive" vs. less "intensive" ads produce specific types of cognitive response. Differences were found only in response content for the comparative vs. non-comparative treatment, a possible proxy for communication involvement. In experiments manipulating source credibility and previous issue attitude, Sternthal, Dholakia & Leavitt (1978) find that a moderately credible source is most persuasive with subjects favorable to the issue, since the moderate credibility stimulates them to generate supportive thoughts to bolster their favorable attitude. Subjects unfavorable to the issue are most influenced by a high credibility source, apparently because the credible source inhibits counterargument while the less credible source engenders these resistive thoughts.

In summary, the studies referred to show that:

- at the level of the individual respondent: 1. cognitive responding rather than cognitive learning determines attitudinal acceptance, 2. the impact of a particular type of response on acceptance is situationally variable in an understandable or at least predictable way.
- at the level of the treatment (average per condition): 1. significant differences in the type of cognitive responding, though not necessarily in the amount of it, are produced and 2. these differences seem to be related to aggregate yielding scores.

The cognitive response approach, by proposing the "stimulus-cognitive response-attitudinal acceptance" paradigm, leads to some difficult considerations in methodology. For the paradigm to be valid, one should demonstrate that the stimulus determines cognitive response and that cognitive response, in turn, determines acceptance. The aggregative analysis-of-variance treatment can show the effect of the stimulus on cognitive response on the one hand and on attitudinal acceptance on the other. Significant effects, on both variables and in the expected direction, are necessary but not sufficient to support the hypothesis, since the significance of the impact of cognitive response on attitudinal yielding has to hold as well. The number of cells will usually not be sufficient to allow a reliable correlational analysis at the aggregate level¹. At the individual level one may write the dependence of attitudinal acceptance (y) on cognitive response (z) as the regression

$$y_{ij} = \mu + \gamma Z_{ij} + e_{ij} \quad (i = \text{treatment}, j = \text{respondent within treatment}) \quad (1)$$

For the cognitive response framework to hold a necessary but not sufficient condition is that γ differs from zero. The additional necessary condition is that

$$Z_{ij} = \alpha_i + \mu_{ij} \quad (2)$$

where the α_i differ in a significant and expected direction over conditions. Substituting (2) in (1), one obtains

$$y_{ij} = \mu + \gamma \alpha_i + \gamma \mu_{ij} + e_{ij} \quad (3)$$

with three conditions expected to hold, namely that the coefficient γ be nonzero, that the treatment effects $\gamma \alpha_i$ differ significantly and that fitting the covariate relationship (3) does not yield a higher coefficient of determination than the regression relationship (1). In the previous discussion we have mentioned the added difficulty which arises when the slope coefficient differs across treatments. We will not dwell longer upon the methodological problems which arise here and which are well known under the name of pooling in econometrics. Suffice it to say that the many conditions to be fulfilled simultaneously increase the odds against the cognitive response hypothesis.

The three studies referred to above differ in the extent to which they study the hypothesis at the individual level or at the condition level, without fully integrating both. The correspondence between results at each level is not automatic (Srinivasan et al., 1979) and this study does not pretend to have resolved this issue.

¹ The distinction between aggregate-level and individual-level analysis occurs regularly in correlational research. Let two measurements y_{ij} and x_{ij} be given, then what is the correlation between y and x , r_{yx} ? Three ways of computing this would be 1) r_{y_i, x_i} : correlation between group means, 2) $r_{y_{ij}, x_{ij}}$: correlation between individual data, 3) $r_{y_{ij} - y_i, x_{ij} - x_i}$: correlation between individual data corrected for group level. The first is referred to as aggregate or among-group analysis, the second as total analysis, the third as within-group analysis. There is no necessary relationship between the sign or size of the first and third correlation.

This paper reports on a study which replicates and extends Wright's research. The individual-level analysis replicates Wright (1973). The treatment-level analysis replicates Wilson and Muderrisoglu (1980), but includes an investigation of attitudinal acceptance and its determinants. A 2×2 after-only factorial experiment (i.e. without pre-manipulation measurement) was set up in which the same print advertisement was presented to all subjects. The experimental manipulation was for involvement (2 conditions) and for source credibility (2 conditions). Subsequent to message exposure, subjects filled out a self-administered questionnaire probing for cognitive response, cognitive learning and attitudinal acceptance.

In contrast with the Wright study, subjects could process the message at leisure in all conditions, which eliminates any direct manipulation of the ability to process the message.

A first research question deals with the applicability of the cognitive response model: Does the receiver respond cognitively (or to what extent?) and does this thought activity determine acceptance? The concept of involvement with the communication is most appropriate here, although cognitive responding and involvement may be rather tautological. Involvement, in this study, was directly manipulated through the presence or absence of instructions concerning a future product decision. High involvement, in this sense, is expected to produce more response, stronger response, more receiver-originated response and more acceptance-determining response than low involvement. Communication involvement may also be affected by our second manipulation, which varies source credibility. Following Wright, we expect that low credibility will affect the receiver's willingness to attentively process the message, thus resulting in less cognitive response, often of a resistive kind. These resistive cognitions are expected to discriminate better between respondents in the high-credibility condition than between respondents in the low-credibility condition, since low credibility may inhibit attentive processing under high involvement. Our considerations lead to the following hypotheses.

- H1: More cognitive response will be generated *a.* under high involvement than under low involvement and *b.* under high credibility than under low credibility.
- H2: The cognitive responses generated under high involvement will *a.* carry a stronger weight and *b.* be more receiver-originated.
- H3: The relationship of cognitive response to attitudinal acceptance will be stronger *a.* under high than under low involvement and *b.* under high than under low credibility.

A second research question deals with the relative number and impact of various kinds of responses. High credibility is known to produce more immediate acceptance than low credibility (Zimbardo & Ebbesen,

1969). This may be attributed to the relative occurrence and strength of supportive vs. resistive cognitions. Following Wright, high involvement or willingness to process the message increases the relative strength of supportive cognitions. These considerations lead to the following hypotheses.

H4: Low credibility will *a.* increase the number of resistive vs. supportive cognitions, *b.* increase the strength of the resistive cognitions and *c.* lead to less attitudinal acceptance.

H5: High involvement will *a.* increase the number of supportive cognitions vs. resistive cognitions, *b.* increase the strength of supportive cognitions and *c.* lead to more attitudinal acceptance.

Finally, the last hypothesis deals with the lack of effect on yielding expected for cognitive learning.

H6: Cognitive learning will *a.* not differ between conditions and *b.* not determine attitudinal acceptance.

DESIGN AND MEASUREMENT

As mentioned above, an after-only 2×2 factorial experiment was set up (Kerremans, 1980). There were 120 subjects (30 per condition) who were randomly assigned. Subjects were participants to adult education language classes, predominantly upper-middle and upper-class female. The study was disguised as a pilot market study for a foreign-language electronic pocket dictionary. The experiment had mundane realism in view of the interest of the respondents for foreign languages and of the known interest of the researcher for market studies. None of the participants refused to cooperate or voiced suspicion.

The administration was entirely written, both for the instructions and the questionnaire. Involvement was manipulated through an instruction to half the sample stating that the subjects could later request a demonstration at home; the remaining subjects were only given the part of the instruction relating to the pilot market study. The credibility manipulation was performed by attributing the inserted advertisement to either a respected general news weekly or to a low-prestige gossip weekly. In order to strengthen the latter effect, a copy of the front cover of the magazine was inserted in the instructions.

After the introduction and manipulation statements, the subjects were instructed to read the advertisement for the electronic dictionary. The message was developed by a creative specialist and had the appearance of a real black-and-white ad. Next to a picture, it contained copy, stating six supportive and three mildly negative arguments.

After reading the ad, the subjects were instructed to fill out the questionnaire without reverting to the advertisement or to previous answers. The first part consisted of a free thought-listing question, limited to some 3 minutes. Six verbally labeled six-point scales followed, two each for the evaluation of message content (A1), of the product

(A2) and for the intention to use and purchase to product (B1). The next questions asked for unaided recall and for multiple-choice aided recall of message content. Respondents filled in manipulation checks for involvement and credibility. Finally, they were instructed to revert to the thought-listing part and to rate each thought for its importance on a 3-point scale (1 = less important, 3 = very important) and for its origin (directly in the ad, reaction to something in the ad, reaction originating with subject rather than message).

TAB. 1. SIGNIFICANCE LEVEL OF F-TEST FOR VARIOUS RESPONSE AND ACCEPTANCE VARIABLES

DEPENDENT VARIABLE	TOTAL	Source of variation			TOTAL
		MAIN-EFFECT		INTERACTION	
		CREDIBILITY	INVOLVEMENT		
1. manipulation check for credibility	.00	.00	.66	.22	.00
2. manipulation check for involvement	.08	.15	.08	.34	.12
3. R, number of cognitive responses	.23	.09	1.00	.05	.08
4. SA, number of support arguments	.09	.85	.03	.07	.04
5. CA + SD, number of resistive responses	.05	.05	.16	.35	.08
6. AWSA, average weight of support arguments	.24	.10	.92	.30	.27
7. AWCA, average weight of counterarguments	.54	.23	.86	.90	.74
8. AWSO, average weight of source derogations	.82	.83	.62	.33	.71
9. A1, message acceptance	.34	.15	.89	.29	.35
10. A2, product acceptance	.08	.08	.15	.12	.06
11. B1, behavioral intention	.60	.31	.92	.49	.68
12. (A1 + A2 + B1): over-all evaluation	.25	.11	.70	.10	.14
13. REC, unaided recall	.13	.06	.41	.81	.24
14. CREC, unaided correct recall	.05	.06	.11	.93	.11
15. MCREC, aided correct recall	.15	.67	.06	.12	.11

The instrument used is identical (except for translation and for manipulation checks) with the Wright questionnaire. Cognitive reactions were coded as support argument (SA), counterargument (CA) or source derogation (SD), by four judges, following Wright's definitions (1973). The judges agreed immediately on 88% of the responses. For the remaining 12% of cognitive responses, a three-to-one majority was obtained for 7% and the project leader resolved the remaining 5% after discussion.

RESULTS

RELIABILITY AND VALIDITY CONSIDERATIONS

The first two rows of Table 1 present the significance levels obtained in two-way ANOVA F-tests for the effect of the involvement and credibility manipulation on their respective manipulation checks. While the credibility manipulation clearly achieved its purpose, the involvement manipulation is only marginally significant by conventional standards. This may in part be due to the manipulation check itself, which asked whether the respondent focussed his attention on the ad illustration or on the text. The cell means are in the expected direction for both manipulations (Table 4).

Since two scales were used to measure each of the three aspects of attitudinal acceptance, the split-half reliabilities of the latter measures are available. Table 2 presents the correlations for the six scales

TAB. 2. CORRELOGRAM OF ATTITUDINAL ACCEPTANCE AND RECALL MEASURES

	A1			A2			BI			REC	CREC	MCREC
	scale 1	scale 2	A1	scale 1	scale 2	A2	scale 1	scale 2	BI			
A1												
scale 1	1.00	.69	—	.61	.64	—	.37	.57	—	—	—	—
scale 2		1.00	—	.67	.71	—	.53	.55	—	—	—	—
A1			(.82)	—	—	.76	—	—	.59	.00	.02	.00
A2												
scale 1				1.00	.82	—	.61	.69	—	—	—	—
scale 2					1.00	—	.65	.75	—	—	—	—
A2						(0.90)	—	—	.76	.11	.16	.06
BI												
scale 1							1.00	.70	—	—	—	—
scale 2								1.00	—	—	—	—
BI									(.83)	.07	.10	.06
REC										1.00	.94	.08
CREC											1.00	.05
MCREC												1.00

measuring message acceptance (A1), product acceptance (A2) and behavioral intention (BI). Diagonal elements in parentheses are split-half reliabilities. The correlations are also shown for the recall variables, namely the variables REC (number of correct unaided recalls), CREC (number of correct minus incorrect unaided recalls) and MCREC (number of correct multiple-choice aided recalls). The high correlation between REC and CREC is expected because REC enters in the computation of CREC. The low correlation between aided and unaided recall measures is unexpected and leads to questions concerning the reliability and validity of the memorisation scores. The evaluation scales for A1, A2 and

BI appear to be reliable, but to miss discriminant validity due to their high intercorrelations.

Table 3 lists the intercorrelations among the cognitive response measures. The correlations between $R (= SA + CA + SD)$ and its constitutive elements show that R is determined mainly by CA , next by SA and finally by SD . This reflects the frequency with which the various types of responses occur: 61% of the responses were classified as CA , 30% as SA and 9% as SD . The resistive cognitions, especially the counterarguments, outnumber the supportive arguments, confirming previous findings. There is a very moderate negative relationship between supportive arguments and resistive arguments. This relationship is too weak to support the hypothesis that the number of supportive and of resistive cognitions are related inversely for a constant total number of reactions.

TAB. 3. CORRELOGRAM OF COGNITIVE RESPONSE MEASURES

	R	SA	CA	SD
R	1.00	.43 ^a	.76 ^a	.21 ^b
SA		1.00	-.15 ^b	-.06
CA			1.00	-.12
SD				1.00

note: a = $p < .01$; b = $.01 \leq p \leq .05$

TREATMENT EFFECTS AT THE GROUP LEVEL

Rows 9 to 12 in table 1 show that the involvement and credibility manipulations did not markedly affect the level of acceptance. Only the credibility manipulation leads to a marginally significant effect on product acceptance. The condition means for this acceptance measure show higher acceptance with high credibility and with high involvement (table 4). The high credibility and high involvement condition is highest in acceptance, the low credibility-high involvement condition lowest. This points to a weak interaction effect, for the credibility manipulation to exert an effect only under high involvement. The null hypotheses 4c and 5c of no manipulation effect on acceptance cannot be rejected, however.

Rows 3 to 5 in table 1 contain the significance levels with the extent and kind of response as dependent variables. While the number of counter-arguments and source derogations did not separately show significant effects, such an effect was obtained when these resistive cognitions were added. The total number of responses is higher with low than with high credibility and does not covary with involvement. The credibility effect is due almost solely to the results under low involvement: The low credibility/low involvement condition produces many more thoughts than the high credibility low/involvement condition. Table 4 shows that this increase is due both to supportive and resistive cognitions in lines 5 and 6.

High involvement produces significantly more support arguments than low involvement, the difference being mostly present under high credibility. Both low credibility and low involvement produce more resistive thoughts, with only the credibility effect reaching the 95% significance level. The involvement effect appears only under low credibility and the credibility effect is mainly due to the low involvement condition. The results in tables 1 and 4 show that no significant manipulation effects are observed on the importance weights attached to the cognitions. Concerning the origin of the thoughts 31% are message-generated, 34% receiver modified and 35% receiver originated (compared to 17%, 48% and 35% for Wright). There is a significant tendency for support arguments to be more receiver-originated than resistive cognitions ($\chi^2_4 = 13.92$, $p < .01$). The hypothesis that the origin of cognitions differs according to the treatment cannot be rejected at conventional significance levels ($\chi^2_4 = 9.4$, $p \approx .06$), the major deviations from the null hypothesis being due to the low involvement-high credibility condition.

TAB. 4. CELL MEANS FOR DEPENDENT VARIABLES

DEPENDENT VARIABLE	CONDITION ^c				CREDIBILITY INVOLVEMENT AVERAGE				
	Hh	Hl	Lh	Ll	H	L	h	l	
1. A1, message acceptance ^a	6.19	6.75	7.42	6.97	6.47	7.17	6.78	6.86	6.82
2. A2, product acceptance ^a	4.77	6.31	6.47	6.40	5.53	6.43	5.62	6.36	5.99
3. BI, Behavioral intention ^a	6.53	6.93	7.40	7.10	6.73	7.25	6.97	7.02	6.99
4. R, number of responses	3.13	2.53	3.07	3.67	2.84	3.36	3.10	3.10	3.10
5. SA, number of support arguments	1.30	0.57	0.93	.87	.93	.90	1.12	0.72	0.92
6. CA + SD, number of resistive cognitions	1.83	1.97	2.13	2.80	1.90	2.47	1.99	2.39	2.18
7. AWR ^b	2.28	2.20	2.25	2.27	2.24	2.26	2.27	2.24	2.25
8. AWSA	2.38	2.19	2.00	2.12	2.29	2.06	2.19	2.16	2.18
9. AWCA	2.25	2.25	2.37	2.34	2.25	2.35	2.31	2.30	2.30
10. AWSD	1.80	2.50	2.27	2.18	2.15	2.23	2.04	2.34	2.19
11. REC	2.33	2.53	2.90	3.27	2.43	3.08	2.62	2.90	2.76
12. CREC	1.80	2.33	2.43	3.03	2.07	2.73	2.12	2.68	2.40
13. MCREC	3.14	3.79	3.54	3.59	3.47	3.57	3.33	3.69	3.52

a. sum of two-step scales; lower value indicates higher acceptance; b. due to missing value problems, AWR is computed as a weighted average of SA, CA and SD; c. H/L high/low credibility; h/l = high/low involvement.

There is a marginally significant effect of credibility on unaided recall, with higher recall under low credibility and of involvement on aided recall, with higher recall under low involvement. The recall scores run counter to the attitudinal acceptance scores.

To sum up the results, there is no aggregate effect of the conditions on attitudinal acceptance, with the marginal exception of higher product acceptance under high credibility. The effectiveness of the involvement

manipulation may be questioned in order to explain the absence of an involvement effect on attitudinal acceptance.

The number of supportive thoughts is higher with high involvement, while the number of resistive thoughts is higher under low credibility. The total number of thoughts is highest under low credibility/low involvement conditions, due mainly to the number of resistive thoughts. The weight and origin of the thoughts are not influenced by the conditions, but support arguments are more receiver-originated.

The results imply that we cannot reject the null hypotheses under H_1 or H_2 . For H_3 and H_4 the subhypotheses b and c cannot be rejected, while the evidence in favor of the subhypothesis a is at the limit of rejection, depending on which recall score is used. Subhypothesis H_6b , on the other hand, is confirmed in a negative sense, since recall tends to covary negatively, if at all, with attitudinal acceptance.

The most important results are that the content of cognitive responding is influenced by the treatment in a main-effect sense and the extent of response in an interaction sense.

INDIVIDUAL-LEVEL ANALYSIS

As explained above, covariational research or correlational research can be conducted on the basis of aggregate data (cell means) or on disaggregated individual observations. Having examined the pattern of cell means in the preceding paragraph, our discussion now centers on the individual data, within cells or across all cells.

Table 5 contains the regression output for the linear relationship between acceptance and the cognitive response/learning mediators. The multiple correlation coefficient decreases as the acceptance variable becomes more behavioral, which is to be expected. The standardized

TAB. 5. REGRESSION ANALYSIS: MEDIATOR-ATTITUDE RELATIONSHIP FOR TOTAL SAMPLE

criterion	variable	standardized regression coefficient	multiple R
A1	support argument	— .401 ^a	.530
	counterargument	.249 ^a	
	source derogating	.233 ^a	
	unaided recall	— .099	
	aided recall	— .044	
A2	support argument	— .391 ^a	.516
	counterargument	.178 ^a	
	source derogating	.220 ^a	
	unaided recall	.023	
	aided recall	.009	
B1	support argument	— .305 ^a	.387
	counterargument	.154	
	source derogation	.148	
	unaided recall	— .029	
	aided recall	.043	

a = significant at $p < .01$

regression coefficient for the reception variables (unaided/aided recall) is insignificant in all three cases, thus lending support to the null hypothesis H_{6b} . The supportive thoughts appear to be most determinant for the acceptance measures. They are significant and about twice as determinant as the resistive cognitions. The latter responses become insignificant in the case of the intention to use/purchase the product. These results are in line with those by Wright, with the exception that supportive thoughts now dominate counterarguments.

A more precise picture is obtained by considering specific acceptance models and by conducting the analysis at the subgroup level. Table 6 present the results for the bivariate models—predicting acceptance as a function of either the number support arguments (model 0) or of counterarguments (model 1)—and for the compensatory models—explaining acceptance by the difference between the number of SA and CA (Model 2) or of SA vs. CA and SD (model 3). Finally, models 4 and 5 are the weighted version of the simple compensatory models, each response being weighted by the importance assigned to it by the receiver. Table 6 contains the correlations and the related p-level for the whole sample and for each treatment subsample.

The data do not allow the computation of correlations between cell means due to the availability of only four such observations. Some qualitative evidence can be adduced to show that the cognitive framework is valid both at the aggregate and at the cross-sectional level. The total sample correlation can be shown to be an average of the correlations between condition means (on yielding and cognitive response) on the one hand and of the cross-sectional correlations within treatments on the other.

Any drastic departure of the correlation between treatment means from that within treatments would yield a total sample correlation outside the range of the within-treatment correlations. This is obviously not the case, when one compares the total sample correlations with the correlations within cells in Table 6. It indicates that the rather significant correlations, observed within conditions, between yielding and cognitive response, will also hold for the correlations between treatment means.

Considering the different models, we find that the unweighted compensatory models dominate their weighted counterparts throughout, reducing the choice to the four more elementary models. Likewise, the counterargument model 1 is dominated by the compensatory models, and the full compensatory model 3 is superior to the restricted compensatory model 2. The choice, then, is between the simple SA model and the full unweighted compensatory model 3. The SA model performs better under the high involvement/high credibility condition, where the counterargument model breaks down.

Considering the treatment, we find that none of the models succeeds in explaining more than 10% of the variance in acceptance under low involvement/low credibility. Support arguments account for the bulk of the explanation under the other conditions. The counterargument model is particularly weak in the extreme high-high or low-low

TAB. 6. CORRELATION COEFFICIENT BETWEEN VARIOUS MEDIATOR MODELS AND ATTITUDINAL ACCEPTANCE (significance level in parentheses)

model	Criterium	total sample	high involvement		low involvement	
			low	high	low	high
	A1		credibility	credibility	credibility	credibility
	A2					
	BI					
SA ¹	A1	— .4633	— .5181 (.005)	— .6245 (.000)	— .1469 (.219)	— .5210 (.002)
	A2	— .3894	— .3797 (.019)	— .6700 (.000)	— .0413 (.414)	— .4007 (.016)
	BI	— .3220	— .2379 (.103)	— .4882 (.003)	— .1912 (.156)	— .3958 (.015)
CA	A1	.2308	.2901 (.085)	— .0523 (.348)	.1086 (.284)	.5104 (.003)
	A2	.2313	.2435 (.097)	.0189 (.461)	.1682 (.187)	.3417 (.035)
	BI	.1954	.1588 (.02)	.2767 (.069)	.1694 (.185)	.1746 (.178)
SA-CA	A1	— .4186	— .5400 (.003)	— .3437 (.040)	— .1533 (.209)	— .6127 (.000)
	A2	— .3826	— .4101 (.012)	— .4336 (.008)	— .1624 (.196)	— .4337 (.009)
	BI	— .3191	— .2617 (.081)	— .5029 (.002)	— .2239 (.117)	— .2995 (.054)
SA-CA-SD	A1	— .4952	— .6916 (.000)	— .3426 (.040)	— .2578 (.084)	— .6539 (.000)
	A2	— .4676	— .5448 (.001)	— .4436 (.007)	— .2793 (.067)	— .4949 (.003)
	BI	— .3851	— .4224 (.010)	— .4864 (.003)	— .3058 (.050)	— .3481 (.030)
WSA - SA - WCA - CA	A1	— .3393	— .4810 (.009)	— .2923 (.070)	— .1423 (.227)	— .4598 (.007)
	A2	— .3135	— .3362 (.035)	— .3849 (.018)	— .1628 (.195)	— .3281 (.041)
	BI	— .2169	— .2052 (.138)	— .3298 (.038)	— .1895 (.158)	— .1576 (.203)
WSA - SA - WCA - CA - WSD - SD	A1	— .3773	— .5438 (.003)	— .2997 (.064)	— .1888 (.159)	— .4937 (.004)
	A2	— .3552	— .3957 (.015)	— .3935 (.016)	— .2182 (.123)	— .3628 (.027)
	BI	— .2503	— .2707 (.074)	— .3259 (.039)	— .2325 (.108)	— .1880 (.160)

¹ Negative correlations are expected except in the case of model 1.

conditions and performs well only under the low involvement/high credibility condition. The full compensatory model, which is superior to most other models, performs well under the mixed high/low treatment and weakly or moderately under the extreme treatments. Our hypothesis 3 is confirmed only in an interaction sense, namely that the relationship of cognitive response to attitudinal acceptance is weak with both low involvement and low credibility. Again, the correlations are generally decreasing as the yielding measure becomes more behavioral.

DISCUSSION

The major issue for discussion is the question when and why the cognitive response framework is applicable for modelling advertising effects. Much advertising indeed does not provoke cognitive response nor does intend to arouse these mediating reactions. It should, according to currently available reasoning, be mediated by reception (learning) variables.

The cognitive response framework adopted in this study holds up rather well in cross-sectional tests. Support arguments or a full compensatory model of responses correlate with attitudinal acceptance, except under low involvement and credibility. The learning variables do not correlate with acceptance. The fact that counterarguments, which prevailed in the Wright study, are second in attitudinal determination in our research is interesting but amenable to multiple interpretations. The counterargument model, however, cannot be applied universally. The weak performance of the SA model under the low-low condition is probably due to the low and homogeneous level of support arguing under this condition. Since much advertising is a matter of low involvement and does not emanate from high credibility sources, it seems hazardous to apply the cognitive response approach unconditionally in order to model advertising effects.

The cross-sectional results may appear comforting, excluding the low-low condition results. Here, cognitive learning is irrelevant and cognitive response appears to be more important. Yet, in cognitive response, we may only have found a proxy for attitudes. The problems, due to the inclusion of attitudes as a proxy for behavior in the stimulus-attitude-behavior relationship, are not resolved by adding yet another step to form the stimulus-cognitive response-attitude-behavior relationship. The attitude wheel is being reinvented and the uncovered relationships are more of a definitional than of a causal nature. In this sense, the bad performance of the cognitive response framework in one condition is comforting.

For the cognitive response framework to be valid and useful, the cross-sectional findings should be replicated in comparisons across treatments. There is no necessary parallelism between within-condition and among-condition results. More support arguments (significantly) and fewer resistive thoughts (not significantly) are generated under high

than under low involvement. As expected, attitudinal acceptance — though again not significantly — evolves with the same response pattern. It is also comforting to find memorization varying inversely with attitudinal acceptance. Likewise, low credibility results in less acceptance, significantly more resistive cognitions and in more recall than high involvement. Although the univariate significance tests may not always meet the conventional standards, the bivariate patterns confirm or strengthen the assumptions of the cognitive response model. Though a strict test was not performed, the comparisons between treatments seem to be compatible with the yielding-cognitive response relationships observed within conditions.

Our study is not a decisive test of the cognitive response vs. the cognitive learning approach to attitude change by means of advertising stimuli. The results are compatible with the cognitive response hypothesis and tend to contradict the cognitive learning framework. While the experiment can be said to have mundane realism, both the topic and the test situation may have favored a cognitive processing mode with the subjects. The conclusions will then be valid for similar advertising situations. On the theoretical side, efforts will be required to discriminant-validate cognitive thoughts and attitude change. As to the cognitive learning framework, if it is not to be rejected, the conditions will have to be specified under which it prevails for advertising.

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