

# **The Impact of Adding Interactivity to Television Advertising on Elaboration, Recall and Persuasion**

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## **Abstract**

*Interactive TV ads providing additional clickable content beyond the traditional 30-second ad are evolving as a new model for television advertising. This extra length provides space for additional claims and repetition of brand associations, which should increase overall advertising effectiveness. We find that one exposure to a transformational interactive TV ad is more effective than one exposure to a 30-second ad, and just as effective as three exposures in terms of attitude towards the ad, attitude towards the brand, and purchase intention. We also found that the interactive ad generated more cognitive elaboration than either one or three exposures to a 30-second ad. For day-after recall, the interactive ad was more effective than one exposure to a 30-second ad. However, in comparison with three exposures, the evidence was not conclusive. When a high frequency is required (as it is for transformational ads), but repeat exposure is difficult to generate (as audiences get more fragmented), interactive TV ads offer media planners a solution, and may rewrite the rules of media planning.*

Key words: interactive, television, advertising, frequency

## **Introduction**

The digitisation of television introduces a wide range of new capabilities to the television viewing experience including new interactive models for advertising. In the UK, for example, over 50% of viewers now have access to such services (OFCOM, 2004), and this figure is expected to rise to two thirds (17 million homes) by 2005 ("Users Interacting With dTV," 2004). Among the new advertising models which have evolved are television 'microsites', web-style content embedded in television programming which can be accessed during ad spots by pressing the red teletext button on the remote control. In the UK, the use of such advertising is increasing, with 40% of marketers agreeing in a recent survey that it should be a significant part of their marketing mix ("Genre Driven Ads," 2004). As the medium continues to evolve, it becomes increasingly important to better understand its potential impact.

The transition to digital must be explored relative to wider challenges associated with media planning. Audience fragmentation makes it increasingly difficult to implement TV campaigns requiring a minimum effective frequency greater than one. Unlike 20 years ago, today's audience has many channels to choose from, plus cable, videos and DVDs, and the probability of the same audience member watching the same program twice in succession has declined substantially. Media planners have adopted the "impact" schedule in which three insertions are viewed in one day (Roberts, 1999), and even within the same programme.

Interactive TV ads are generally placed to maximise response rates (Danaher and Green, 1997), but we consider here their use to increase awareness and favourable attitudes. Although there is no single “magic number” for minimum effective frequency (see, e.g., McDonald, 1996), we compare one exposure to an interactive TV ad to a well-known rule-of-thumb proposed by Krugman (1972): “three is enough” (supported by Naples, 1979; disputed by Ephron, 1995, and Jones, 2002). Furthermore, we pit this single interactive exposure against the “gold standard” for current media planning, a high-impact triple-spot insertion within a single 30-minute TV program. We use unfamiliar ads, as familiar messages do not need a high frequency campaign (Tellis, 1997). Since informational ads do not require three exposures to be effective (Rossiter and Danaher, 1998; Singh and Cole, 1993), we test two transformational ads, one for airline travel (high involvement) and one for biscuits (low involvement). When a high frequency is required (as it is for transformational ads; Rossiter and Danaher, 1998), but repeat exposure is difficult to generate due to audience fragmentation and the double-jeopardy effect (Barwise and Ehrenberg, 1988; Donthu, 1994), interactive TV ads may offer media planners a means of delivering the equivalent of three exposures in one, long-format ad insertion.

## Literature Review

Ad effectiveness is conditional on attention, and longer ads are more likely to be attended to (Rossiter and Percy, 1997). The interactive ads we tested consisted of 30-second TV ads embedded with clickable content ‘microsites’ featuring individual still screens providing additional advertising material. This format is now deployed on digital television platforms worldwide and constitutes one of the first new ad models for interactive television. This extra length should give space for more repetition of brand associations, and generate more contextual material for episodic memory of the commercial, increasing day-after recall (Singh and Cole, 1993). Longer ads can also make additional persuasive claims (Stanton and Burke, 1998), and repetition, within a longer ad, of associations between the brand and positive emotions should also generate a stronger affect transfer (classical conditioning) effect on attitudes and intentions (Rossiter and Percy, 1997). In addition to the effects of repetition and additional claims, longer ads give viewers more opportunity to realize the purpose of the ad and cognitively elaborate on its message (Rethans, Swasy, and Marks, 1986). This extra elaboration would increase memory for the ad and strengthen already favourable attitudes toward the ad and the brand, especially for transformational ads (Singh and Cole, 1993).

*H1: One exposure to an interactive ad will be more effective than one exposure to a 30-second TV commercial in terms of: (a) cognitive elaboration, (b) day-after recall, (c) attitude towards the ad ( $A_{ad}$ ), (d) attitude towards the brand ( $A_b$ ), and (e) behavioural intentions (BI).*

However, whether one extended exposure to an interactive ad will be superior to the combined effect of three exposures to a 30-second ad is unclear. Repeated exposure to a shorter ad may generate equivalent recall and conditioning effects compared to one exposure to a longer, interactive ad (Singh and Cole, 1993). Repeat exposure to the shorter ad may even be superior: psychological research has generally demonstrated a superior effect for spaced as opposed to massed learning (Donovan and Radosevich, 1999). Also, after initial exposures to shorter ads in which the ad’s message is learned, viewers have time during later exposures to cognitively elaborate on this message and the length advantage of interactive ads may be eliminated (Singh and Cole, 1993).

*H2: There will be no difference between one exposure to an interactive ad and three repeat exposures to a 30-second TV commercial in terms of: (a) cognitive elaboration, (b) day-after recall, (c) attitude towards the ad ( $A_{ad}$ ), (d) attitude towards the brand ( $A_b$ ), and (e) behavioural intentions (BI).*

Effective frequency depends on the consumer's awareness and preference for the brand, the frequency of insertions by the leading competitor, and whether the intended communication effect of the ad is merely to generate recognition or recall, or to change attitudes and intentions (Rossiter and Danaher, 1998; Shimp, 2003). We try to control for all these variables by using unfamiliar ads and products with very high and very low product category involvement. Using two ads also controls for effects of ad execution. We limit the effect of novelty by evaluating responses to the second and third (i.e., less novel) interactive ads seen by our participants.

## Method

### Sample

The sample consisted of 104 students from an Australian university (59 females, 57%, 45 males, 43%, 87% aged 18-25). Over half (56%) of these students watched one to three hours of television per day, on average. No differences in demographics or TV usage were found between groups, so these variables were not included as covariates (Hutchinson, Kamakura, and Lynch, 2000).

### Procedures

Thirty-four students, none of whom participated in the final study, rated their involvement with nine product categories using a five-item scale (Mittal, 1995). Airline travel ( $M = 4.28$ ) was rated highest and biscuits ( $M = 2.45$ ) was rated the lowest. One TV ad was selected from these two categories, along with buffer ads from 12 categories in total. All were finished ads from a worldwide ad agency's reel, and were all equally unfamiliar to the sample, either overseas ads or ads aired a long time ago (Chattopadhyay and Nedungadi, 1992).

Participants in the subsequent experiment were randomly allocated to three experimental cells: 1\_exposure ( $n = 33$ ) or 3\_exposure ( $n = 30$ ) to a 30-second TV ad for each brand, or 1\_exposure to an interactive TV ad for each brand ( $n = 41$ , 39 interacted with the Oreo® ad, 33 with the Singapore Airlines ad, 31 with both). The interactive version of an ad consisted of the 30-second TV ad with a banner superimposed on the final frames inviting participants to press a button on their remote control to view an additional 'microsite' ad. To minimize the possibility of introducing extraneous variables, these microsites maintained the same advertising message and appeal as the TV ad. Participants were able to exit either microsite at any time. The interactive ad was always the first ad in an ad break, to allow time for interactivity before the program re-commenced (this is somewhat different from industry practise where the interactive ad usually appears last in the ad pod so as not to compete with other ad sales). The non-interactive test ads were generally not the first in the pod (1\_exposure: Oreo® = 3, Singapore Airlines = 2; 3\_exposure: Oreo® = 5, 3, 1, Singapore Airlines = 3, 2, 5), which may have reduced the attention paid to them.

The test ads were embedded within a 30-minute episode of *The Simpsons*, divided by three ad breaks, each consisting of five ads. For the 3\_exposure group, one of the buffer ads was also shown three times, once in each ad break, just like the two test ads. Participants in the interactive ad cell were not forced to interact with the test interactive ads, and data were collected until at least 30 participants had interacted with either of the two interactive ads. Only those participants who had interacted with the interactive version of an ad were included in the count of those who later recalled that ad.

## Measures

A self-administered pen-and-paper survey questionnaire, consisting of standard, validated 7-point scales, was used to measure the dependent variables: *Attitude toward the ad* ( $A_{ad}$ , eight 7-point items, Perrien, Dussart, and Paul, 1985); *Attitude toward the brand* ( $A_b$ , four 7-point items, Gardner, 1985); and *Behavioural intentions* (BI, five 7-point items, Bone and Ellen, 1992). Higher numbers indicated a more favourable attitude or intention, and the score for each scale was the average across items. Cronbach's  $\alpha$  for each scale was above .70 (Nunally, 1978, range .84 to .94). *Cognitive Elaboration* was measured by asking participants to list all the thoughts, reactions and ideas they had whilst viewing the test advertisements, within a three-minute time limit (Buchholz and Smith, 1991; Wright, 1980). Finally, the survey asked a number of questions about demographics and TV usage.

*Day-After Recall* was measured by telephoning participants, approximately 24-hours subsequent to viewing, and asking them to describe the ads for the two target brands. Correct recall was coded as 1, incorrect as 0. Recall for either brand was assumed to be independent, resulting in two observations per participant.

## Results

One exposure to an interactive TV ad generated, compared to one exposure to a standard 30-second TV ad, more cognitive elaboration ( $M = .726$  vs.  $M = .344$ ,  $p < .05$ , see Table 1, which also lists the percentage listing at least one thought), more day-after recall ( $p = .0006$ ), and more favourable attitude toward the ad ( $A_{ad}$ ) and toward the brand ( $A_b$ ), and more favourable behavioural intentions (all  $p < .05$ , Tukey test, Wilk's  $\Lambda = .836$ ,  $F_{6,176} = 2.743$ ,  $p = .014$ ). Compared to three exposures to a standard 30-second TV ad, one exposure to an interactive TV ad generated more cognitive elaboration ( $M = .726$  vs.  $M = .300$ ,  $p < .05$ ), but less recall ( $p = .0011$ ). There were no significant differences for any of the other dependent variables. The reason for the difference in recall appeared to be the higher level of recall for the Oreo® brand (76% vs. Singapore Airlines 53%,  $p = .0005$ ). For the Singapore Airlines brand there was no significant difference in day-after recall between participants who viewed three 30-second exposures (72%) or one interactive exposure (61%). The Oreo® brand also generated more cognitive elaboration than Singapore Airlines ( $M = .527$  [36% listing at least one thought] vs.  $M = .386$  [23%],  $\chi^2_1 = 4.59$ ,  $p = .032$ ). However, Singapore Airlines had a more favourable  $A_b$  compared to Oreo® (5.40 vs. 5.08,  $p = .011$ ), and a more favourable BI (3.96 vs. 3.53,  $p = .032$ ). There was no difference in  $A_{ad}$  for the two brands, and the interaction effects between exposure and brand were not significant for any of the dependent variables (to analyse interaction effects for the nonparametric variables we used PROC CATMOD in SAS for day-after recall and Kruskal-Wallis 2-way ANOVA [Miller, 1966; Scheirer, Ray, and Hare, 1976] for cognitive elaboration).

**Table 1: The Effect of Ad Exposure on Ad Effectiveness**

<i>Dependent Variable</i>	<i>Statistic</i>	<i>Sig. level</i>	<i>1<sub>iTV</sub></i>	<i>1<sub>30-sec TV</sub></i>	<i>3<sub>30-sec TV</sub></i>
Day-After Recall	14.11†	<.001	67% <sup>xy</sup>	47% <sup>x</sup>	79% <sup>xy</sup>
Cognitive Elaboration	23.22†	<.001	45% <sup>xy</sup>	20% <sup>x</sup>	22% <sup>y</sup>
Ad Attitude ( $A_{ad}$ , 1-7)	6.140‡	.003	5.03 <sup>x</sup>	4.40 <sup>x</sup>	4.84
Brand Attitude ( $A_b$ , 1-7)	5.901‡	.004	5.60 <sup>x</sup>	4.87 <sup>x</sup>	5.26
Behavioural Intentions (BI, 1-7)	5.529‡	.005	4.23 <sup>x</sup>	3.24 <sup>x</sup>	3.77

NOTES—Statistically different percentages or least-squares means indicated by the same superscript letter. †  $\chi$ -squared, ‡  $F$ -statistic.

### Discussion and Conclusions

We tested whether one exposure to an interactive ad produced equivalent ad effects compared to one and three exposures to 30-second TV ad, provided that an individual interacted with the interactive ad. Overall, our results provide clear support for H1: that one exposure to an interactive ad will be more effective than one exposure to a 30-second TV ad. The results are somewhat mixed for H2. On measures of persuasiveness—attitudes toward the ad and the brand, and brand intentions—there was no difference between one interactive exposure and three 30-second exposures. However, one exposure to an interactive ad was, overall, not as effective as three-exposures to a 30-second TV ad in terms of day-after recall, although our results are inconclusive as day-after recall was equal for one of the two brands. We leave it to future research, using a wider sample of products, brands, and executions, to determine whether repeated exposures to a shorter-format ad will always, on average, be more beneficial for recall. We also found that one exposure to an interactive ad will generate more cognitive elaboration than three exposures to a 30-second TV commercial. This suggests that interactive advertising generates more involvement than shorter ads (Klein, 2003), even after three repetitions. Although we did not control for product category involvement or involvement with interactive TV technology at the individual level, we did use two products, one extremely high and one extremely low in product category involvement for our participants. While initial involvement with the category might explain the choice of interacting and subsequent elaboration for the high involvement category, it seems less plausible as an explanation for the increase in elaboration for the low involvement category. We discuss the possible influence of involvement with the technology (the novelty effect) in the next paragraph.

Like many studies conducted in the academic sector, a key limitation of this study is its use of university students as subjects, which limits the external validity of our findings (Peterson, 2001). However, the similarity of our participants in terms of demographics and TV usage increases the internal validity of this exploratory research (Lynch, 1999). Likewise, a further limitation is associated with our use of a semi-forced procedure to encourage interaction with our interactive ads. However, this limitation means our findings are somewhat conservative. Many of our interactors may not have been that interested in the advertised products. Day-after recall for highly-motivated interactors is likely to be higher than we observed and even closer to day-after recall following three 30-second exposures. Finally, we note that we did not observe a general interactive ad superiority (or novelty) effect, which rules out this alternative explanation for our findings: there was considerable variance across exposures,

measures, and brands, including, as hypothesised, no significant differences between interactive and 30-second TV ads (if the 30-second ads are repeated three times).

Our aim was not to generate a new rule of thumb; that one interactive TV ad is roughly equivalent to three 30-second TV ads. Our intention was to highlight that such comparisons are worth investigating, on a case-by-case basis. Our results suggest that in the new world of digital interactive TV, the rules of media panning may need to change. Instead of applying a frequency rule to minimise audience loss across the repeat insertions necessary for minimum effectiveness, media planners can now concentrate on building up, one interaction at a time, a highly favourable target audience for the advertised brand.

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