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## Effects of the awareness of social dilemmas on advertising budget-setting: A scenario study

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### Abstract

In this study, which examines the dynamics involved in setting advertising budgets, the social dilemma theory was applied in an attempt to understand the interdependency problems of advertisers in their investment decisions. In an experiment, a budget decision was made for a company after a period in which the company's market shares had either increased, decreased, or remained stable. Subjects were pre-screened with regard to their social value orientation (cooperative vs competitive). Half of the subjects were informed of the threat of social dilemmas and of the possible negative consequences; the other half were not informed. Budget decisions can be predicted on the basis of subjects' social value orientations and the awareness of the threat of social dilemmas. Subjects with a relatively strong competitive orientation are more zealous in setting their budgets. However, the awareness variable shows the strongest effects, especially in conditions when subjects experience a declining market share. It was concluded that knowledge about the dynamics of social dilemmas may prevent advertisers from a competitive reaction to the loss of share and may thus prevent them from becoming trapped in a competitive (social) dilemma. © 2001 Elsevier Science B.V. All rights reserved.

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## 1. Introduction

Each year the Dutch Association of Approved Advertising Agencies (VEA) publishes figures of advertising expenditure in the Netherlands. From the latest reports (Adformatie Bureau bijlage, 2000) it appears that in the last decade Dutch advertising expenditure has doubled. In that period, there has also been a substantial growth of media that compete for advertisers' investments. Especially in television broadcasting these media developments are obvious (see, e.g., Franzen, 1994). A substantial part of the increase in total broadcasting time can be attributed to newly established commercial channels.

Within channels, the broadcasting time *for commercials* has increased even more than proportionally in the last couple of years. Boelé and van Niekerk (1995), for example, reported an increase of 150% in advertising time per channel in the Netherlands, shortly after the introduction of the second commercial channel. One important conclusion that can be drawn from their study is that a mere increase in advertising broadcasts obviously does not result in a proportional rise in the number of commercials actually seen by consumers. On the contrary, it appears that the number of commercials seen by consumers on TV each day significantly lags behind the increase in the number of commercials broadcasted. For advertisers, this paradox (i.e., higher expenditure resulting in less efficiency) would call for a reorientation on the effects of advertising investments vis-à-vis budget decisions of competitors. In this paper we will propose a framework to understand this paradox and investigate some of its characteristics.

## 2. The fleeing consumer

There is evidence that higher advertising pressure in the media negatively affects the appraisal of individual advertisements and thus irritation (see for a study in the Netherlands: Soeterboek & VanderHoek (1988), 1981–1988). Also, it has been demonstrated that the thresholds for irritation may strongly differ between media (Van der Meiden & van Toledo, 1988). Both with TV

advertising and direct mail people seem to get bored more quickly than with print advertising, presumably because the latter form of advertising is less demanding of immediate attention, allows internal pacing, and is thus easier to ignore.

Relevant in this context is the fact that TV advertising appears to evoke considerably more irritation among consumers in the Netherlands than it did some 10 years ago (see for example the 'Life and Living' study by Trendbox, 1995, and the studies cited by Van der Meiden & van Toledo, 1988). Increased advertising pressure (or the proportion of commercials in total TV broadcasting time) may account for this irritation.

Higher levels of advertising exposure may also have resulted in a reduced willingness to pay attention to commercials and thus in less efficient information processing. Franzen (1994), for example, has reported that the spontaneous recall of advertisements has decreased considerably in the last couple of years. There are at least two explanations for this decline. First, consumers may have become overloaded with commercial information and are thus less capable of storing the information adequately. The gist of this explanation is that Dutch advertisers have reached the point of information saturation with regard to TV advertising. A second explanation is that consumers are simply fed up with frequent commercial breaks and escape them by zapping to other channels (cf. Siddarth & Chattopadhyay, 1998). The Association of Dutch Advertisers (BvA) seems to have adopted this outlook by suggesting that a more concise planning of programmes and commercial breaks across the channels might persuade consumers to refrain from zapping and to stay tuned.

Careful planning of commercial breaks on different channels may indeed to some extent prevent consumers from zapping, but will not decrease irritation with commercials, let alone result in more efficient information processing. Instead, the apparent paradox (that increased TV advertising has resulted in less efficient exposure) can only be sufficiently appraised by understanding the investment decisions of advertising managers and the interdependency that exists among competitors in setting advertising budgets. Social dilemma theory provides the framework for this.

### **3. Social dilemmas in advertising decisions**

Social dilemmas (Dawes, 1980; Messick & Brewer, 1983; Liebrand, Messick & Wilke, 1992) are related to situations in which the participants have

access to a common pool of resources which can be exhausted by taking too much from it. Often the analogy is made of a group of local fishermen who are all dependent on the (limited) amounts of fish in the town's lake. If each fisherman were to restrict himself to catching a 'responsible' amount of fish per day, the total number in the lake would stay at par. If one fisherman decided to start fishing more intensively, there will still not be a serious problem. However, if competing fishermen all started fishing more intensively, it would result in a common and structural problem.

In advertising, advertisers 'fish' for the attention of consumers. As with the number of fish in the lake, consumer attention (the common pool of resources) is by no means inexhaustible. Overexposure to commercial information will cause consumers to shut themselves off from it (either by ignoring the information or by zapping to another channel). Hence one may conclude that at this moment too many suppliers are using too big fishing nets in advertising.

Participants in a social dilemma are confronted with the decision whether to make a (non-cooperative) choice that enhances the individual benefit or a (cooperative) choice that is in the interest of the collective. Of course, non-cooperative choices may result in higher payoffs for the individual but they will seriously disrupt a stable situation if all participants engage in such behavior. In advertising, the participants basically have the same options. Advertisers may opt for higher advertising budgets thus hoping to realize higher profits. This will be successful as long as competitors are moderate in their advertising expenditure. If, however, more advertisers were to increase their budgets, the situation might well become one of commercial information overkill. Econometric research conducted in the tobacco industry actually supports this social dilemma interpretation of advertising budget setting (see, e.g., Teel, Teel & Bearden, 1979; Holak & Reddy, 1986). In these studies it was also shown that a significant decrease in advertising may even result in greater cost efficiency.

Social dilemma theory has been used to explain and study human choice behavior in various domains, such as environmental pollution, energy consumption, tax paying, transportation vehicle choice in commuting, etc. (see e.g., Schulz, Albers & Mueller, 1994). One, almost equivocal suggestion from these studies is that social dilemmas, once established, are difficult to solve. However, a number of factors have been suggested to influence the subsistence of social dilemmas (see e.g., Messick & Brewer, 1983; Messick et al., 1983; Samuelson, Messick, Rutte & Wilke, 1984) that may have direct relevance to advertising investment decisions.

#### 4. Hypotheses

It has been suggested by Dawes (1980), that social dilemmas may well be countered when participants come to understand the nature of the dilemma and if they can be convinced that other participants will also engage in cooperative behavior. Such conditions may be created when (e.g.,) participants have access to the relevant information necessary to understand the dynamics and threats of dilemmas. Research by Corfman and Lehmann (1994), for example, shows that when advertisers are provided with information about the competitive situation and characteristics of the decision maker, this affects their strategy decisions in setting their budgets. Hence we expect that advertisers who are aware of the possible threats (and dynamics) of social dilemmas will invest less in advertising (a cooperative choice) than advertisers who are unaware (Hypothesis 1).

In their study, Corfman and Lehmann (1994) reported a general tendency among business students to choose higher rather than lower advertising budgets. More recently, Armstrong and Collopy (1996) have shown that too strong a competitor orientation in marketing decisions can be detrimental to performance and inhibit the company's profitability. In their opinion, competitor orientation may be related to personality characteristics (i.e., social value orientation) and situational factors. Liebrand (1982) has found that the *social value orientation* in terms of preferences for cooperative or competitive behavior may significantly enhance the level of exploitativeness of participants in a social dilemma. Since then, a number of studies have been conducted in which it was demonstrated that subjects with a pro-social orientation tend to be less selfish in social dilemmas than subjects with a competitive orientation. Van Lange (1991) summarized the results of these studies. On the basis of this overview we hypothesize that advertisers with a cooperative orientation will invest less in advertising than advertisers with a more competitive orientation (Hypothesis 2). Because of their value orientation, cooperative subjects are more sensitive to factors that may impinge on the collective interest. Therefore we expect that the impact of awareness of the possible threat of social dilemmas in advertising decisions will be stronger for cooperatively oriented advertisers than for competitively oriented advertisers (Hypothesis 3).

*Situational factors* (as suggested by Armstrong & Collopy, 1996) refer to the decision maker's momentary strength of temptation to engage in non-cooperative behavior. For example, if an advertiser assumes that he will be able to gain considerable *market share* in the short term by increasing his

advertising budget, he will probably be less concerned about the long-term effects of any social dilemma. Of course, this subjective appraisal of short-term profits and the urge to pursue them will be dependent on *whether one is winning or losing*. Prospect theory (Tversky & Kahneman, 1991) also predicts that the aversion of further losses will have a stronger impact on behavior than the prospect of comparable gains. Thus we expect that advertisers experiencing a declining market share will be tempted to set higher advertising budgets than advertisers whose market shares are stable or increasing. (Hypothesis 4).

Advertising strategies may vary for different products. For example, the degree to which brands are perceived to be materially equal (brand parity) may influence advertising budget decisions. According to Riezebos (1994), if brand parity in a product class is high, there is not much room for adding value by means of informational advertising and advertisers may decide to compensate this lack of brand differentiation by increasing the advertising frequency of their brands. Thus (Hypothesis 5), advertisers dealing with a market of homogeneous products (high brand parity) are expected to set higher advertising budgets than advertisers dealing with a market of heterogeneous products (low brand parity). Advertisers who are aware of the social dilemma threat would not be expected to follow such a (defective) strategy since they are informed about the negative consequences of increasing advertising expenditure. Hence, the impact of brand parity will be stronger for advertisers who are unaware of the possible threat of social dilemmas in advertising decisions than for advertisers who are aware (Hypothesis 6).

To summarize, this study investigates to what extent budget decisions in advertising are influenced by the social value orientation of advertisers, information about the development of market shares, and knowledge about the dynamics and dangers of social dilemmas in advertising. Additionally, we will explore the (cognitive) background of budget decisions in order to find out to what extent decision makers are aware of the problem of interdependency in setting their advertising budgets.

## 5. Method

### 5.1. Subjects

An experiment was conducted among 160 (5th year) business students at the university level. All subjects had completed a course training in adver-

tising decision making. They were unfamiliar with the social dilemma theory (as was checked in post hoc interviews). Subjects were selected on the basis of a pre-screening questionnaire to assess social value orientation. This questionnaire was a Dutch version (by Van Lange & van Veenendaal, 1990) of an instrument to differentiate between people with a cooperative orientation and people with a competitive orientation (Van Lange & Kuhlman, 1994). The questionnaire was handed out to 270 students. Eighty respondents (30%) could be classified as cooperative, 150 (56%) as competitive, and 39 (14%) as individualistic subjects. The last group was not included in this study because of the small number of representatives. From the 151 competitive respondents, 80 were randomly selected for participation in the experiment.

### *5.2. Procedure*

Subjects were given a scenario that described a market for a consumer durable good (electric saws), with five competitors having close to equal market shares and brand awareness among buyers. They were requested to empathize with the advertising manager of one of these companies and to set an advertising budget for the next planning period. After this, subjects filled out a short questionnaire (three questions) about their budget choice, and were debriefed.

### *5.3. Experimental design*

Sixteen different versions of the scenario description were used. Half of the subjects were told that the market consisted of brands that were highly similar in terms of material and functions (high brand parity); the other half of the subjects were informed that they were dealing with a market of heterogeneous products (low brand parity).

Four different forms of feedback were provided about last year's market share of the company. A quarter of the subjects did not receive any feedback and another quarter were told that last year's market share had remained stable. Of the remaining subjects, half were told that the market share had increased by several percent, whereas the other half were told that its share had dropped by several percent. All subjects were told that total market volume had not changed in the last couple of years.

One half of the subjects received additional information about the lurking social dilemma in setting their budgets. It was explained that the managers of the five different companies had come to realize that an arms race in

advertising might hamper the overall effectiveness of advertising expenditure. Pitfalls and threats that may result from setting competitive (higher) advertising budgets were discussed in terms of the choice dilemma for each individual advertising manager. The other half of the subjects did not receive any information about social dilemmas.

Orthogonal combination of the three experimental variables, together with the value orientation screening, results in a 2 (social value orientation)  $\times$  2 (brand parity)  $\times$  4 (feedback on market share)  $\times$  2 (information about social dilemmas) between-subjects design.

#### 5.4. The dependent variable

After reading the scenario, subjects were asked to set an *advertising budget* for their company for the coming year in terms of a percentage of the company's total sales of electric saws. They were informed that in a market like this one, the average advertising budget is usually between 5% and 20% of total sales.

Subsequently three questions were asked with regard to the *background* of their budget choice. These questions were merely added to check the competitor orientation post hoc. Subjects indicated on 5-point scales to what extent they had based their strategy on, what they expected their competitors to do (1 = not at all; 5 = very much), what strategy they expected their competitors to pursue in the next year (1 = very competitive; 5 = very cooperative) and how effective they considered their budget to be in the next period (1 = not effective at all; 5 = very effective).

## 6. Results

Manipulation checks revealed that the scenarios were well understood by the experimental subjects. Also, subjects who were informed about the threat of social dilemmas appeared to believe more strongly that the effectiveness of their advertising investments was dependent on the budget decisions of competitors than uninformed subjects ( $F(1, 128) = 15.60, p < 0.001$ ).

The hypotheses were tested through a four-way ANOVA (social value orientation  $\times$  brand parity  $\times$  feedback on market share  $\times$  information about social dilemmas). First, we will present the differences in advertising budgets set by the subjects in the 32 experimental groups (see Table 1). The section



concludes with subjects' responses to the three questions regarding the background of their decision.

### 6.1. Advertising budgets

The results of the study show that subjects who received information about the possible threat of a social dilemma were more moderate in their advertising budgets ( $M = 10.9\%$  of the total sales) than subjects who were withheld this information ( $M = 13.9\%$ ). Thus, Hypothesis 1 is confirmed ( $F(1, 128) = 33.17, p < 0.001, \omega^2 = 0.20$ ).

Also, a significant difference in advertising budgets between cooperatively oriented subjects and competitively oriented subjects (Hypothesis 2) is observed ( $F(1, 128) = 24.83, p < 0.001, \omega^2 = 0.16$ ). Subjects with a competitive orientation appear to set higher advertising budgets on the average ( $M = 13.9\%$  of the total sales) than subjects with a cooperative orientation ( $M = 10.9\%$ ). No interaction effect could be detected for social value orientation  $\times$  information about (the threat of) social dilemmas (Hypothesis 3:  $F < 1$ ).

Subjects who were told that their market share in the previous planning period had increased tended to set lower advertising budgets ( $M = 11.6\%$ ) than subjects who were told that their market share in the previous period had remained stable ( $M = 12.6\%$ ) or had decreased ( $M = 12.8\%$ ). Subjects who received no information about their market share in the previous planning period set an average advertising budget of 12.5%. Differences

Table 1  
Mean advertising budgets (in percentages of total sales) set by experimental subjects ( $n = 160$ )<sup>a</sup>

Social orientation	Feedback	Information about social dilemmas			
		No		Yes	
		Brand parity		Brand parity	
		High	Low	High	Low
Cooperative	No information	14.8 (1.5)	10.6 (2.9)	12.0 (2.1)	10.0 (1.4)
	Increased market share	9.4 (0.9)	12.0 (3.1)	9.4 (4.9)	10.0 (0.6)
	Stable market share	14.2 (2.6)	10.2 (1.5)	9.6 (1.7)	8.8 (0.8)
	Decreased market share	12.6 (1.8)	14.4 (1.3)	6.6 (2.3)	9.2 (1.3)
Competitive	No information	16.8 (5.2)	13.4 (5.5)	10.8 (2.7)	11.4 (2.9)
	Increased market share	12.6 (2.5)	14.0 (2.2)	15.0 (6.1)	10.4 (3.7)
	Stable market share	16.4 (5.4)	13.2 (2.2)	12.6 (9.9)	16.0 (5.5)
	Decreased market share	20.6 (5.6)	16.4 (2.2)	10.4 (3.7)	11.8 (2.1)

<sup>a</sup>Standard deviations are given within parentheses.

between the four groups are, however, not significant ( $F < 1$ ). From the planned contrasts no significant differences could be revealed between the condition in which subjects were told that their market share had increased and the condition of stable market shares ( $t(78) = 1.03$ , n.s.) or decreasing market shares ( $t(78) = 1.18$ , n.s.), respectively. Thus, we could not confirm Hypothesis 4.

Of all possible interactions between information about social dilemmas, social value orientation, and feedback on market shares, only the interaction between feedback and information about social dilemmas was significant ( $F(3, 128) = 4.94$ ,  $p < 0.003$ ,  $\omega^2 = 0.08$ ). This effect is presented in Fig. 1.

In Fig. 1, it can be seen that subjects who are aware of the dynamics and possible threat of social dilemmas in setting advertising budgets do not behave differently than subjects who are unaware, as long as the market share for their company has increased ( $t < 1$ , n.s.) or has remained stable ( $t(38) = 1.1$ , n.s.). However, when subjects experience a declining market share it appears that awareness of the possible threat of a social dilemma does affect their budget decision ( $t(38) = 5.58$ ,  $p < 0.001$ ). Subjects who are unaware set their budget significantly higher ( $M = 16\%$ ) than subjects who are aware ( $M = 9.5\%$ ). The first group thus displays the competitive behavior one would expect to form the basis of a social dilemma in advertising; the latter group does not. Mean advertising budgets for subjects in the control condition (no feedback on market share) are not displayed in Fig. 1. It

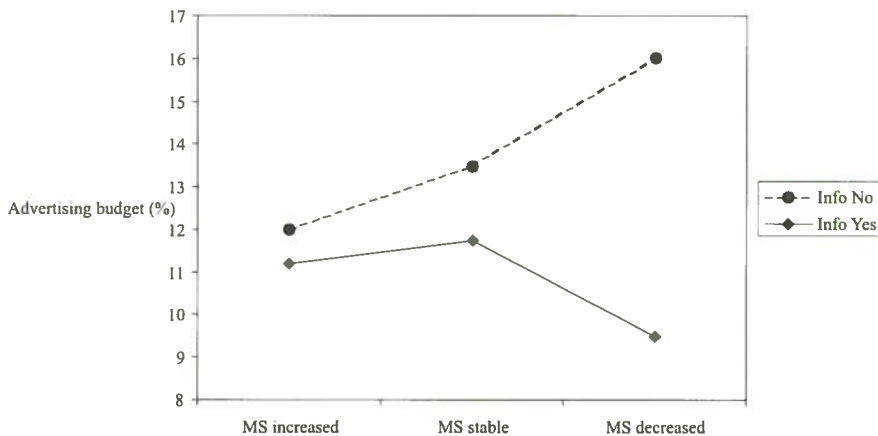


Fig. 1. Advertising budgets (as a percentage of total sales) set by subjects who either did or did not receive information about social dilemmas, under three conditions of feedback on changes in market share (market share increased, remained stable, or decreased).

appears that budget decisions in this condition resemble the condition in which the market share has remained stable ( $M = 13.9\%$  for subjects who are unaware,  $M = 11.1\%$  for subjects who are aware;  $t(38) = 1.72$ , n.s.). This indicates that the interaction effect is to be attributed particularly to the differences in subjects' awareness in the condition of decreased market share.

Finally, we examine whether the advertising budget differs for high or low brand parity products (Hypothesis 5). This does not appear to be the case ( $F(1, 128) = 1.73$ ,  $p = 0.19$ ,  $\omega^2 = 0.01$ ). We did find, however, a borderline significant interaction effect of brand parity  $\times$  information about social dilemmas (Hypothesis 6;  $F(1, 128) = 3.85$ ,  $p < 0.052$ ,  $\omega^2 = 0.02$ ). In Fig. 2 this interaction is displayed.

It becomes clear that differences we expected to occur between advertising budgets for homogeneous (high brand parity) and heterogeneous (low brand parity) product categories solely occur with subjects who did not receive information about social dilemmas ( $t(78) = 2.08$ ,  $p < 0.041$ ). Here it can be seen that advertising budgets are higher when the decision maker is dealing with homogeneous products ( $M = 14.7\%$ ) than with heterogeneous products ( $M = 13.0\%$ ). When subjects are aware of social dilemmas in advertising, however, there seems to be hardly any difference between homogeneous ( $M = 10.8\%$ ) and heterogeneous ( $M = 11.0\%$ ) products in advertising budgets ( $t < 1$ ).

No further (interaction) effects were found for advertising budgets.

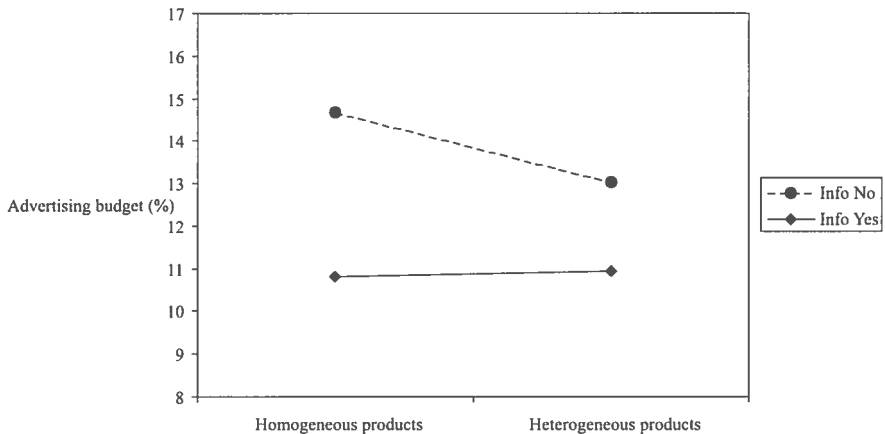


Fig. 2. Advertising budgets (as a percentage of total sales) set by subjects who either did or did not receive information about social dilemmas, for two conditions of brand parity (homogeneous and heterogeneous products).

## 6.2. Questions referring to the background of the choice

After setting the advertising budget, subjects were asked to answer three questions about the perceived dependency of competitors' budget decisions, the perceived willingness of competitors to cooperate in the next planning period, and the perceived effectiveness of their chosen budget. Answers to these questions are reported here only where significant differences between experimental conditions are to be observed.

First, in order to check the sensitivity to opponents' strategies, we asked subjects whether they had considered expectations about competitors' decisions when setting their advertising budget. In Table 2 differences between conditions are summarized.

Main effects are disclosed for information about social dilemmas ( $F(1, 128) = 23.52$ ,  $p < 0.001$ ,  $\omega^2 = 0.15$ ) and for feedback on market share ( $F(3, 128) = 5.22$ ,  $p < 0.002$ ,  $\omega^2 = 0.09$ ). Subjects who are aware of social dilemmas state that they pay more attention to what they expect competitors will do ( $M = 3.43$ ) than subjects who are unaware ( $M = 2.75$ ). Information about the dynamics of social dilemmas obviously makes subjects more aware of the mutual dependency of competitors and thus less focused on individual choices. From the main effect of feedback we learn that especially when subjects are dealing with stable market shares, they are not highly tempted to pay attention to expected advertising budgets of their opponents ( $M = 2.68$ ). In both situations of increased and decreased market shares, however, subjects tend to be more sensitive to the strategies of competitors ( $M = 3.35$  and  $3.33$ , respectively). From this we may conclude that the mere change of market shares in either positive or negative direction causes subjects to pay more attention to competition, whereas market stability seems to pacify competitor orientation to some extent. This last conclusion is also corroborated by the condition of no feedback ( $M = 3.00$ ) which falls between the

Table 2

Degree to which expectations about competitors' choices were considered when setting own advertising budget ( $n = 160$ )

Feedback	Information about social dilemmas	
	No	Yes
No feedback	2.55	3.45
Increased market shares	3.55	3.15
Stable market shares	2.10	3.25
Decreased market shares	2.80	3.85

conditions of stable market share and increasing or decreasing market share. An interaction effect between feedback and information about social dilemmas ( $F(3, 128) = 6.76$ ,  $p < 0.001$ ,  $\omega^2 = 0.12$ ) reveals that for all conditions of feedback there is a sharp increase in sensitivity to competitors' choices when subjects are informed about social dilemmas, except in the condition where subjects experience an increasing market share. In this condition, sensitivity to competitors appears to level off somewhat (but not significantly:  $t(38) = 1.44$ , n.s.), probably because this sensitivity is already quite high in the condition of unawareness. One should realize that, independent of awareness of social dilemmas, the increase in one's own market share more or less forces advertisers to anticipate the possible (especially defensive) reactions of competitors.

A second question concerns whether the subjects expected competitors to be either competitive or cooperative in the next planning period or not. Again we found a significant main effect of information about social dilemmas ( $F(1, 128) = 29.94$ ,  $p < 0.001$ ,  $\omega^2 = 0.18$ ). When provided with information about social dilemmas, subjects tend to be more confident about a cooperative strategy of competitors ( $M = 3.63$ ) than when they are unaware of the threat of a social dilemma ( $M = 2.77$ ). Moreover, the main effect of social value orientation ( $F(1, 128) = 10.57$ ,  $p < 0.001$ ,  $\omega^2 = 0.07$ ) reveals that both subjects with a cooperative orientation ( $M = 3.46$ ) and subjects with a competitive orientation ( $M = 2.94$ ) expect reciprocity from their opponents: cooperative subjects think competitors will also be cooperative, whereas subjects with a competitive orientation are less inclined to attribute cooperative motives to their opponents.

Finally, we asked subjects to estimate the effectiveness of the budget choice that was made. One (main) effect could be established for information about social dilemmas ( $F(1, 128) = 4.55$ ,  $p < 0.035$ ,  $\omega^2 = 0.03$ ): subjects who are aware of the threat of social dilemmas in advertising are less confident about the outcome of their budget decision ( $M = 3.30$ ) than subjects who are unaware ( $M = 3.55$ ). Apparently, information about social dilemmas makes one more prudent with regard to the goals one sets with advertising decisions, or may trigger a delaying tactic whereby advertisers wait for the competitors' next move. However, this main effect of information about social dilemmas is qualified by an interaction of information about social dilemmas  $\times$  brand parity ( $F(1, 128) = 6.35$ ,  $p < 0.013$ ,  $\omega^2 = 0.04$ ). It appears that the high confidence with regard to the effectiveness of the budget choice for subjects who were not informed about social dilemmas is merely attributable to the group of subjects having

to deal with a heterogeneous product category, and cannot be observed in the condition of homogeneous products.

## 7. Conclusion and discussion

The purpose of this study was to examine whether and to what extent budget decisions in advertising are influenced by differences in social value orientation of advertisers, changes in market position, information about the dynamics of social dilemmas in advertising, and brand parity of products in the market.

Consistent with expectations, individuals with a cooperative orientation set lower advertising budgets than individuals with a competitive orientation. Already, since the early work by Deutsch (1958), we know that social value orientations may underlie choice behavior in a variety of experimental games. More recently, however, it has been amply demonstrated that subjects with a pro-social orientation indeed exercise more personal restraint and are more willing to cooperate in social dilemma situations than subjects with a more competitive orientation (see Van Lange, 1991, for an overview of studies). The present finding that also budget decisions in advertising are strongly affected by the social value orientation of the decision maker is interesting for, at least, two reasons. First, it raises the question as to what extent pro-social orientation can be expected to occur among business administrators in general, and advertising managers in particular. In this study, which was restricted to managers *in spe* (i.e. students at a business administration faculty in their final year), we had to administer 270 pre-screening questionnaires in order to select 80 cooperative subjects (approximately 30% of the total). This relatively low percentage of pro-social subjects contrasts sharply with the outcomes of five different studies reported by Van Lange (1991) which relied on samples from both Dutch and US student populations of various faculties. In these studies a ratio of 65:35 (cooperative:competitive) was reported. Obviously, our sample of business administration students displays less pro-social orientation than other student samples. Since social dilemmas are especially to be feared when participants are tempted to make competitive choices, we cannot be too optimistic about what will happen in advertising when the decision makers persist in competitiveness (see also Armstrong & Collopy, 1996). The finding that both cooperatively and competitively oriented decision makers expect reciprocity in the budget decisions of opponents indeed reinforces our pessimism as there is obviously little hope that com-

petitive advertisers will – in anticipation – alter their dominant strategies to cooperative choices of competitors. Subjects' expectations of reciprocity are not surprising at all as this has frequently been found in dilemma studies (e.g., Kelley & Stahelsky, 1970; Kuhlman & Wimberley, 1976).

Second, one may question how to stimulate a cooperative orientation among (future) advertising managers. Within the framework of social dilemmas a number of variables have been identified (e.g., Dawes, 1980; Messick & Brewer, 1983). Among these, the exchange of information (communication between participants) seems to be ubiquitous in that it has shown to be effective in a variety of social dilemma contexts (Liebrand et al., 1992). The exchange of information may help decision makers to become less suspicious about competitors' strategies, it may enhance perceived group identity (or at least the realization that all participants are facing this 'common trap'), but it may also provide insight into individual participants about the dynamics of social dilemmas.

In this study half of the subjects were informed about the possible threat of a social dilemma in setting their budgets for the next planning period. This information proved to be the most influential in advertising budget decisions: subjects who were led to believe that all competitors shared this information made less acquisitive budget decisions than subjects who did not receive this information. It also appeared that the former group of subjects expected competitors to follow a more cooperative strategy and they were more willing to take competitors' choices into account when setting their advertising budgets. At the same time, however, this information made subjects less confident with regard to the effectiveness of their own budget choice. This seems to indicate that being informed about the threat of a social dilemma, and realizing that competitors have the same information, makes subjects more on their guard. Of course, it would be interesting to see what happens after either a competitive or a cooperative decision is made by competitors. One of the possibilities is that it results in a tit-for-tat strategy (Oskamp, 1971; Axelrod, 1994; Moore & Moore, 1990), although recent studies (see, e.g., Van Lange & Visser, 1999) show that other options are viable. In future studies one should employ advertising budget decisions in multi-periods, in order to assess such dynamics of competitiveness.

Although it was hypothesized that advertising budget decisions would be dependent on whether gains or losses in market share are being experienced, no main effects were found as a function of increasing, stable or decreasing shares on advertising budgets. However, only subjects who were *not* informed about the possible threat of a social dilemma responded in a way one would

expect (i.e., more investment in advertising when market shares are threatened by a declining market share). Such (defective) reaction patterns were predicted on the basis of the prospect theory (Tversky & Kahneman, 1991), which holds that the aversion of a future loss has a larger impact on behavior than the prospect of a profit. Defective budget choices may, however, very well set the pace for a social dilemma in advertising. Thus, one intriguing finding of the present study is that the defense mechanism in reaction to decreases in market shares may be counteracted by the provision of information about social dilemmas. This finding is corroborated by the fact that especially under these circumstances (decreasing market share; awareness of the threat of a social dilemma), subjects indicate that they were more sensitive to competitors' strategies than in any other condition. This suggests that decision makers indeed realize that competitive reactions to a loss of share may start off an arms race in advertising but that they are willing to wait for the opponents' next move, and thus to postpone such a defensive reaction.

Brand parity does not affect budget decisions of advertisers. However, the results of this study indicate that subjects who did *not* receive information about the threat of a social dilemma indeed behaved according to what one would expect. When dealing with a market of homogeneous products, these subjects seem to consider advertising as a more viable instrument to establish competitive advantage (by means of higher share of voice), than when dealing with a market of heterogeneous products. The temptation to use this instrument, however, seems to be repressed when subjects become aware of the threat of social dilemmas in advertising. This, again, supports the conclusion that providing information about the social dilemmas may inhibit their rise and existence.

In this study, social dilemma theory proves to be an interesting venue to understand budget decisions in advertising. Although the subject population consists of business administration students, we deliberately selected participants who had followed a course on advertising decision making and were about to graduate. Hence, they were experienced and anticipating a professional marketing career. These results should, however, be compared with future research among professional advertising managers. A future research agenda may also direct such questions as the effects of group size (number of competitors in a given market), market leadership (or market concentration), and face-to-face interaction of advertising decision makers. From research in the field of social responsibility (Darley & Latané, 1968), it is known that with an increasing number of participants, both the individual's perception of relative anonymity increases and his share of responsibility decreases (i.e.,



more ego-orientation, less collective concern). In markets with numerous suppliers, advertisers might thus be tempted to engage in more non-cooperative behavior and hence facilitate social dilemmas. The interest in the possible effects of market concentration relates to the question as to what extent a central authority might inhibit social dilemmas in advertising and its undesirable consequences.

Also, one might examine the reactions of marketing managers when they have the choice to use more instruments (such as price or product alterations) to strive for competitive advantage. As has been shown by Moore (1992), pricing decisions may also be subject to the dynamics of social dilemmas. A fascinating study would involve the long-term strategies and multi-period decision making when marketers are confronted with either cooperative or competitive opponents, and to study their reactions when they have access to more than just one marketing instrument to contend their competitors.

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