

Marketing and Logistics Discussion Paper Series

5

CONTRA-INDICATIONS OF SCIENCE IN ADVERTISING RESEARCH

86/2

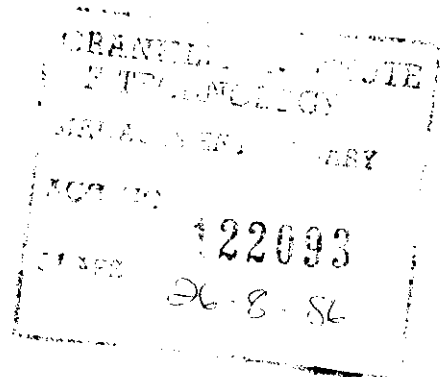
by

John C. Driver*
University of Birmingham

and

Gordon R. Foxall**

Cranfield School of Management



*Lecturer in Industrial Economics & Business Studies,
University of Birmingham, Birmingham B15 2TT, UK

**Reader in Marketing, Cranfield School of Management,
Cranfield, Bedford MK43 0AL, UK



3 8006 10014 5971

Opinions differ about the application of scientific method to advertising research. The nature of scientific enquiry is also frequently disputed. Against this background basic views of science are discussed in connection with advertising research. Apparently the advertising community largely disregards the results of such research and adheres to beliefs which are plausible but unsubstantiated. This is demonstrated in the two cases of cognitive models of consumer response and advertisers' quest for the optimal budget. In this paper these contra-indications of science are set in the context of advertising management.

Introduction

Analyses of advertising practice exhibit almost as much variety as do advertisements themselves and the products they represent. The diversity is only comprehensible, however, when viewed from the standpoint of some frame of reference or other, a formal or informal model of assumptions which makes advertising behaviour intelligible to the observer - be he practitioner, client, policy maker or critic. Most models of advertising are informal, their assumptions incompletely articulated; in many cases, they are, at best, casual and piecemeal aggregations which, nevertheless, allow the individual to organise his observations and experience and which act as a guide to practice. Some members of the advertising community hold notions of advertising which are more sophisticated than this, though, in view of the manifest complexity of their subject matter, these can hardly amount to generally-applicable theories of advertising. The overall approach of advertising practitioners and their clients (as managers, and perhaps as policy makers and critics, too) no doubt conforms to the more general style of management which Kakabadse has described so succinctly, "managerial decision making", he writes, "is a fairly unstructured activity, formed under time constraints by largely atheoretical individuals whose subjective opinions, beliefs and impressions determine the decision process" (Kakabadse, 1984, p. 55).

It is just this complexity of advertising which has provided the academic community with some justification for the application of scientific modelling to this aspect of business practice. But there are also those within the advertising community who are keenly interested in the pursuit of scientific enquiry for practical advertising purposes, notably in connection with the

evaluation of advertising effects and effectiveness. Indeed, one often encounters the belief that scientific procedures are not only applicable here but appropriate. To provide just one example, Simon (1984, p.321) writes in the context of the determination of advertising budgets that "The most important decision in advertising . . . is still usually decided in pre-scientific ways . . . [I]t is time for businessmen to move towards a more scientific practice in setting advertising budgets, too". The frequent promulgation by advertising researchers of the concepts, procedures and measures of operations research, behavioural science and economics attests to the adoption of this view. (Alblon and Farris, 1981; Reekie, 1981).

It is important, however, to draw a distinction between the possibility of using scientific method in advertising research and the full and responsible recognition of the strictures which necessarily bind those who adopt it. The assumption of a scientific approach imposes obligations on its adherents which consist not only in the acceptance of certain analytical procedures and objective standards but in the willingness to abide by the evidence which scientific analysis generates and to plan and execute further research and practice accordingly. No science can nowadays be considered exact but the acceptance of a scientific approach implies nevertheless that controversies among investigators should be reduced or eliminated by the diligent, imaginative and, above all, consistent use of the available methods of analysis. It implies, too, that controversy will not be unnecessarily prolonged by an insistence on subjective criteria which stem ultimately from personal tastes and preferences. Of course, a part of the enduring controversy surrounding advertising's general social role derives from fundamental disagreements over what is amenable to scientific enquiry and what can be treated only subjectively. Such are the emotions generated

by advertising in the community as a whole that even scientific evidence is unlikely to be accepted by any party to the debate whose viewpoint is threatens. (Indeed, the pro-advertising interests have been repeatedly frustrated by the lack of impact of their evidence on the criticisms which perennially beset it.) But, whatever the status of scientific method among the participants in this wider debate, it is vital that advertising executives and their clients, where they have adopted the systematic procedures of scientific methods in advertising research, should accept the consequent obligation to respond to the evidence they produce.

This paper examines two areas where the evidence produced by successive investigations appears to have been at best interpreted partially but often also ignored. In our consideration of the relationship between advertising and (i) consumer behaviour, and (ii) the determination of optimal budgets we show in each case how an established research tradition maintains its momentum largely irrespective of the evidence that should at least subject it to periodic review. That evidence should be evaluated in such a fashion raises questions about the conduct, context and culture of scientific endeavour in advertising. In order to arrive at some tentative conclusions we outline some of the contextual issues relating to the advertising process and the scientific method as prelude to a detailed account of the specific areas of behaviour and the budget.

Science In Advertising

To consider the potentiality of science in advertising is to make assumptions about the nature of science and its sphere of application. Many diverse views are held on each of these aspects, making their conjunction

subject to even more possibilities. Some order may be imposed on this complexity, however, if a distinction is drawn between beliefs in positivistic/empiricist (PE) science and relativistic/constructionalist (RC) science, (Peter and Olsen, 1983).

In outline the contrast is between different sets of philosophical assumptions and the research methodologies that these support. In the case of belief in PE science the phenomena of interest are seen, *inter alia*, as objective, uninfluenced by observer measurements, amenable to logic and thereby rational in that sense, theory and hypothesis are subject to detached empirical assessment by established procedures and rules. On the other hand, a belief in RC science widens the range of relevant considerations: science is subjective so the behavioural processes of scientists and the contexts of scientific endeavour are themselves part of the phenomena, data are influenced by the measurement process and cannot be interpreted without reference to some theory or other - assessment is theory laden. It follows that a false distinction is drawn between phenomena that are naturally occurring (the 'natural sciences') and of social origin (the 'social sciences'); rather a distinction (if any) should arise from the manner in which, and by whom, scientific research is conducted and in terms of the nature of the conclusions drawn.

Most of the attempts to employ science in marketing and advertising have been in conformity with the PE belief, on the (erroneous) understanding that this was the means by which the 'natural sciences' achieved so much. As such, the spheres of application have been relatively limited and the mode of scientific enquiry circumscribed. This is itself illustrated by the fundamental and enduring controversy about whether marketing as a whole is

art or science.

For advertising there are specific aspects that have been subject to PE enquiry - notably in controlled experimentation, media planning and budgeting (see below) - but the general culture is asscientific - especially in the PE sense. Accordingly it is appropriate to consider the nature of advertisers' behaviour and the views they themselves hold of the advertising process.

Advertising is viewed pre-eminently as a practical activity with conspicuous problems, arising from its inherent complexity, which must be urgently solved. The current structure and conduct of advertising at any one time is evolving to meet both changing and perennial needs.

Advertising is both a cost effective means of communication and a source of media revenues. Media, exhibiting different production and supply characteristics, face different demands through both their technological and economic properties and so are enabled to charge different prices. Monopoly powers, however, are held neither by the media, nor agencies, nor producers of advertisements - all are in a process of competitive evolution where the economics of intermediary relationships accords advertising agencies the specialist role between media and advertisers. Replacing an earlier reliance on space-broking agencies now fulfill a broad marketing consultancy role; advertising is no longer an end in itself but a complement to general marketing activity and agency remuneration is no longer exclusively media-based, as agencies market their expertise. Their service extends from marketing to creative and organisational skills in advertising production and includes media buying.

The client advertisers, who in many cases also have their own marketing expertise, are neither necessarily reliant on any particular agency nor on an agency at all. Because successful competition depends on relative advantage agencies in marketing themselves must demonstrate ability as the means to retain advertiser confidence. Part of this comes from the wholesaling of marketing intelligence, inter alia they process information. Each, however, has its own interpretation and conception of the conduct and impact of advertising. The marketing of advertising is the marketing of an agency's prior record and its vision of the future. (Channon, 1981). The contemporary communications culture demands changes in copy, or at least variety on a cyclical basis, to compete for attention, and advertisers too generally perceive a renewable need to communicate for their competitive purposes. Advertising's complementary relationship to product and other marketing mix features has - except in a few cases - made definitive measurement of its effects problematical. Recognition of this fact is also part of the culture of advertisers.

Advertising, as an activity, by its advertisement content and extent and its inherent conspicuousness makes a statement, acts as a symbol. The withdrawal of that (complex) symbol is itself a message so advertising communication once started is not easily replaced or duplicated - it has its own momentum. To some extent this replaces the question 'how much?' with 'how?', 'when?', 'where?'; in short, operational tactical questions supplant strategic issues. Advertiser and agency jointly produce advertising and accordingly they share responsibility and interest in the outcome. The observable variety in advertisements, their style, phrasing and other characteristics attest to a corresponding variety in the perceptions and motivations of this combined advertising management.

Practical science in advertising arises both from decisions of management to specifically employ it and from the assimilation of external findings into the general culture. The nature of this employment and assimilation is now considered in the cases of consumer behaviour and advertising, and the optimal advertising budget.

Case One: The Cognitive Consumer

Contemporary consumer research is, for the most part, founded upon the assumption that consumer choice is rational, with behaviour being preceded by cognitive events - beliefs, brand attitudes, purchase intentions - which determine choices in the market place. Moreover, these antecedent mental events are held to influence consumer choice (brand purchase, store choice, consumption) in orderly, systematic and predictable ways. The most appropriate method of understanding consumer behaviour is thus to unravel the intellectual and emotional processes that prefigure it.

The academic literature is replete with the consequences of this approach. Consumer choice is depicted in terms - derived from cognitive psychology - of human information processing. The procedures by which consumers are assumed to reach purchase decisions have been described at length in these terms in the comprehensive models of consumer behaviour which credit consumers with handling large quantities of information. They assume that prospective buyers make extensive pre-purchase searches for brands that will solve their well-articulated problems. And that they evaluate the available items thoroughly and with great care. In his summative Customer Decision Model, Howard (1983, p.96) takes for granted that consumer choice is "largely determined by how the customer thinks and

processes information". The central causal chain of this model is Information → Attitude → Intention → Purchase which portrays a consumer decision sequence. In making a choice, the cognitive consumer hesitates, inspects the alternatives available, and experiences uncertainty which he reduces through the rational processing of information (Hansen, 1976; McGuire, 1976).

Advertising in such models is widely viewed as a strong persuasive force which propels the potential buyer through a sequence of psychological effects that culminate in a purchase (Lavidge and Steiner, 1961; Colley, 1961). Atkin (1984, p.210) succinctly summarises this approach, noting that the models assume "a rational, discerning and active effort on the part of the receiver. (Their) cognitive - affective - behaviours approaches posit the consumer devoting attention to the ad, critically perceiving the content (perhaps derogating the sources, ignoring certain appeals, and challenging some arguments), evaluating the personal relevance of the benefits offered, forming an attitude and executing a purchase". And a similar psychological model underpins much market research and marketing practice where a reliance on some form of attitude measurement is predominant.

But is consumer behaviour like this? Typically, it is not. Models of the rational, information processing consumer take for granted that the buyer is committed to specific brands, to which he remains loyal and involved. Yet most buying behaviour for branded consumer products is only slightly involving or lacks involvement entirely.

Some twenty years ago, Krugman (1965) put forward the view that television advertising had a more subtle and weaker impact on the viewer than

was generally realised. Rather than creating strong and determinative prepurchase attitudes towards brands, it resulted at most in tiny changes in perception and could only achieve this after massive repetition. The viewer was more interested in entertainment than in learning about new brands. If anything happened at all at this stage, it was a process of slow and unending learning, insufficient to allow consumers to discriminate among brands or even, if asked, to remember their names. In these circumstances, it is the purchase situation, offering the opportunity to buy, that brings this perceptual learning into focus and makes discrimination, leading to brand trial, possible. Like the learning of things that are nonsensical or unimportant the relationship to television advertisements is uninvolved. If attitudes are formed at all in this process, it is after purchase has occurred - though, even at this stage, measures of brand attitudes are extremely weak and may reflect no more than seeing respondents' willingness to reply to survey questions (Lastovicka and Bonfield, 1982).

Under conditions of low media involvement and low brand commitment, consumers make far less use of prepurchase information than the comprehensive models infer; indeed, they have highly limited capacities and inclination for receiving and using information.

As a rule, consumers do not undertake rational, and comprehensive comparative evaluations of brands on the basis of their attributes or make final judgements between brands as a result of complex information processing. For example, Jacoby et al (1977) concluded that "the vast majority of consumers neither use nor comprehend nutrition information in arriving at food purchase decisions". Moreover, consumers drastically limit their search for information even about durables, most visiting a

single store, failing to consult advertising, using restricted price information, considering only one make, and employing as indicators of quality their perceptions of the maker's reputation, price, and packaging. (Olshavsky and Granbois, 1976; Robertson, 1976).

Not only is the consumer's actual prepurchase information processing much more restricted than the models assume, there is also evidence that the whole decision sequence assumed by the comprehensive modellers and the practitioners who rely upon similar notions is absent from most purchasing. Consumers' decision processes for durables and nondurables does not involve the detailed consideration of several (or even two) competing brands or makes. Rather, their behaviour is the result of situational influences, group pressures, behavioural learning, and instore displays. After reviewing the evidence on this, Olshavsky and Granbois (1976, p.99) sum up by saying that many brand purchases appear not to be preceded by a decision process at all. This is not (they point out) simply to say that the repeated repurchasing of a brand becomes habitual and decision processes are, therefore, telescoped. It means that "for many purchasers a decision process never occurs, not even on the first purchase". Consumers evaluate brands by purchasing them on a trial basis and appraising them in use. Ehrenberg (1974) stresses this by means of the ATR model of consumer behaviour which depicts the processes of purchasing and consumption in three phases: Awareness, Trial and Repeat-buying. Repeat buying, which is essential to the success of consumer goods, is shown as a function of Awareness. The ATR approach emphasises that awareness leads at most to curiosity and trial, whilst sustained repeat buying (the inclusion of the brand in the buyer's repertoire of competing brands) depends upon the performance of the item in use during the trial phase.

Most product classes comprise a multiplicity of brands, each so similar to the others in terms of attribute composition, that consumers cannot discriminate amongst them. It is to be expected, therefore, that most consumers will not show total loyalty to any single brand but will select from a small set of tried and tested, competing and substitutable brands. At least for nondurables, which in any case take most of the consumer's spending power, there is overwhelming evidence to support this. The markets for the vast majority of these products are characterised by more or less stable sales: the buying behaviour of the individual buyer generally includes several brand choices but the aggregate level of market sales is stable and predictable. Customers of any one brand, in say a three month period, are usually customers for numerous other similar brands. They include a number of such brands in their buying repertoires, selecting one on one shopping trip, another the next time. But they very rarely switch brands in any final sense, abandoning one and taking up another in its place (Ehrenberg, 1972). In the illustrative case of ready-to-eat breakfast cereals, buyers typically purchase several brands over a sequence of purchases. Although the observation of consecutive purchases may suggest a sudden 'switch' of brands, in fact the consumer continues to select various brands in his repertoire, "some perhaps less often than others, but each fairly consistently over time . . . Hence repeat buying tends to be predictable". (Ehrenberg and Goodhardt, 1980). In the absence of a radical change in marketing action, for instance, the introduction of a new brand (such as Rowntree's Yorkle or Tetrosyl's Tetrlon) some few consumers are totally loyal in the sense of buying only one brand on every occasion and never trying its competitors but such sole buying is very much the exception, not the rule.

Most observed consumer behaviour is radically different from that described by the comprehensive models. The irony is that many consumer researchers, academic and commercial, are aware of low involvement buying, yet continue to concentrate upon the rational, decision-making assumed by those early models, as if it were the norm. In some situations, it is: the first purchase of a discontinuously innovative product class usually entails extensive problem-solving or, at least, (reported) prepurchase intellectualisation. But most purchasing is not like this. Nevertheless, the comprehensive modellers talk as though it were (see, for instance, Engel and Blackwell, 1982; Howard, 1977) and the discredited hierarchy of effects models still find widespread acceptance in discussions of advertising (e.g. Albion and Farris, 1981; Doyle, 1984). Even the descriptions of low involvement as a "routine response" is not descriptive of the multi-brand purchasing one can actually see the vast majority of consumers display. Practitioners as well as academics adhere firmly to the rational model of the cognitive consumer: many advertising agencies conceptualise the effect of marketing communications in terms of a sequence of psychological events; thus, their clients frequently buy from them advertising which is conceived as part of a 'marketing spectrum' or 'hierarchy of effects': specifically, much consumer testing in the process of new product development relies heavily upon the attitudes → intentions → behaviour rationale; and, in general, behavioural change is conceptualised as the result of prior cognitive change. Yet, as the following discussion demonstrates, this reasoning is hardly borne out by the social psychology of choice.

The greatest strides forward in the prediction of overt behaviour from the verbal behaviours that are said to express underlying attitudes and intentions have been apparent from the work of Ajzen and Fishbein (1977,

1980). Their 'theory of reasoned action' is based upon the finding that an individual's behavioural intentions, which approximate (and thus predict) his overt behaviour can be calculated from measures of his attitude towards the performance of the behaviour in question ("attitude towards the act") and his perceptions of the expectations of significant individuals, and his motivation to comply with their judgements ("subjective norm").

The success of the theory of reasoned action stems in large measure from the specificity of measurement it requires and the need to ensure correspondence of 'intention' and behaviour which it enjoins upon the researcher. When these requirements have been met, high correlations (of the order $r = 0.8$ or 0.9) have been found between measures of intention and behaviour (for further discussion, see Foxall, 1983, 1984).

However, these high levels of correlation can be obtained only under the tightest of circumstances: notably when the elapsed time between the expression of an intention and the occurrence of an opportunity to act in accordance with it is minimal. Intentions must be the immediate antecedents of behaviour (Fishbein, 1973; Fishbein and Ajzen, 1975, pp.370-1). The temporal contiguity of market research and purchase opportunity is, of course, the one thing that cannot be guaranteed in marketing/consumer behaviour. In the case of new and 'repositioned' brands the time lapse may be months, even years and throughout this period, situational factors lead constantly to changed attitudes and intentions. The high failure rates for new and repositioned brands of most consumer products bear this out. In spite of the ever-increasing sophistication in the psychometric techniques available for concept and product testing, the measures of consumer intentions gathered at this stage of the innovative process have negligible

predictive validity (Tauber, 1981; see also Foxall, 1984). This is quite a different situation, of course, from that of established product classes, whose brands typically exhibit stable and predictable market shares (at least over the medium term) and where there is a demonstrable empirical relationship between consumers' intentions to purchase a brand and their actual usage of that brand.

Case Two: The Advertising Budget

The dominant theme in the modelling of advertising budgeting, reflecting its disciplinary and practical genesis, is the quest for the optimal appropriation. This apparently single objective can assume different forms depending on context and is subject to various interpretations arising, most simply, from the dimensions in which 'the best' can be conceived. Frequently, however, the term is restricted to an overall expenditure, 'optimal' in terms of its sales generating capacity relative to that of cost: thus, optimal advertising is the amount which secures a maximum profit. Cast in these terms and expressed in abstract algebraic terms this problem is a comparatively simple one amenable to marginalist logic under certain assumptions.

This approach, developed initially by Rasmussen (1952) and later by Dorfman and Steiner (1954), has subsequently been extended to embrace more complicated theoretical situations where monopoly conditions are replaced by oligopolies and competitive action is explicitly modelled (for reviews see Chipilin and Sturgess, 1981; Koutsoyiannis, 1982). Considerable ingenuity has been expended in making these complex cases tractable and in generalising the results to show how the simple Dorfman-Steiner relationship

fits the general case. Indeed, the Dorfman-Steiner results, whereby the optimal advertising to sales ratio in expenditure terms equates with the ratio of advertising to price elasticities of demand, extends with certain modifications to a wide class of other conditions. (This basic robustness will be referred to as the generic Dorfman-Steiner result). Theoretical development to recognise the inter-relationships between advertising expenditures and sales revenues has been made by depicting the determination of advertising as a simultaneous process and the effects of advertising through multiple time periods have also been incorporated. The considerable sophistication of such developments, however, is in contrast to the assumptions that pervade this class of work.

Most fundamentally, the depiction of advertising in expenditure terms imposes a homogeneity on advertisements and the advertising and communication process as a whole. Thus in the generic models it is implicitly assumed that the expenditure alone, regardless of its allocation to media, qualitatively different advertisements, differing audiences, etc., is the generator of sales. This presumes either that the above factors are irrelevant or that the distribution decisions to optimise these allocations are not only capable of being made but are being made - and as a costless activity! In some cases relatively homogeneous sub-markets are posited but the above remarks still apply - though perhaps with less force - to the components. Another adjustment is made, for the non-uniformity of advertising response by the transformation of the advertising term (in relation to sales) into a form that allows for the (hypothesised) diminishing returns to advertising at higher levels of expenditure. This rather crude mechanism in turn contains a number of implicit assumptions. The homogeneous advertising is variously either less effective in reaching

new members of the audience, or is less effective in its influence on existing members, or is equally effective but diminishing returns arise from the lower cost effectiveness of media.

A similarly questionable aggregation of different mechanisms is implicit in the form adopted for the time distribution of advertising effects. In principle, different specifications are required for the component sub-audiences where advertising:— cumulates over time to reach (any) thresholds of effectiveness, is delayed/stored thereby having future effects, or inculcates or reinforces habits, decays and needs to be renewed. These features are in addition to a changing composition of audiences occurring naturally through time which should in principle be explicitly recognised.

A further implicit assumption is enshrined in the almost universal separation of advertising and product which suggests a homogenising of advertising in a different sense. The separation of advertising from the product implies that advertising fulfils only an informational role. (Driver and Foxall, 1984) Undoubtedly advertising does have such a role but the consensus is that advertising epitomises persuasive information, i.e. persuasion, and the essence of persuasion is to lead to a combination of advertising messages with the product, to affect the perception of the product and thus to form a composite. In principle the product is redefined when the advertising "works" in some persuasive sense and rather than advertising being separate from the product it becomes technically an attribute of the product: the advertising attributes are arguably as much a part of the product as its physical characteristics. Advertisers seek to alter product specifications in both senses for advertising recipients

respond as differently to alternative copy, with a constant (conventional) product, as to changes in the physical product.

The type of specification problem raised above stems from the disregard of the heterogeneities and sheer complexities present in the natural phenomena of advertising and its audiences. The points are in addition to the more formal (econometric) specification problems which are explicitly recognised in the literature.

The transition from the realm of theory to model testing and empirical analysis introduces a further range of assumptions. Such is the prevalence of technique and/or data-led research that the implicit assumptions regarding the method of data reduction and its inherent adequacy are rarely critically examined: limitations are recognised but analysis proceeds nevertheless, because the alternative of no (numerical) analysis is considered inferior. Once under way, technique and/or analytical methods have their own momentum, conventions, standards - i. e. assumptions. These refer to subjective judgements about the values obtained of particular statistics, to correlation coefficients, levels of significance, goodness of fit, etc. On occasions the meticulous conduct of the analysis is in contrast to the "quality" of the subjective judgements and the unknown (and often questionable) "accuracy" of the input data and its appropriateness to the issue in hand. On these latter counts the supposed objectivity of the whole procedure can be illusory.

Largely in disregard of the above considerations, the conventional application of variations of regression analysis in conjunction with the generic Dorfman-Steiner theorising has led to a body of knowledge which has

variously been thought applicable to the problems of the management of advertising and indeed assessment of its social desirability. This is pre-eminently in terms of a pioneering methodology applied to the Lydia Pinkham's data (Palda, 1964) which has provided scope for refinement in specification and estimating methodology. The research into the cumulative effects of advertising investigates its dynamic properties in general and its investment implications in particular. A general finding has been that advertising is only profitable if a long term view is taken, that is, that short run advertising can be loss-making. A concomitant of this result is that advertising has a life which extends well beyond the immediate period - in the case of Pinkham's, this was found to be seven years for 95% of life. A review of several dozen studies based on this methodology demonstrated that the periods to which the input data referred played a highly significant role in the estimates of the corresponding lives of advertising. Indeed, a tendency for estimates based on annual data to be on average 17 times larger than estimates based on shorter periods was found (Clarke, 1976). This convincing demonstration of the effects of homogenising advertising through time shows the potential impact of data interval bias.

The finding that there is an inconsistency between the estimates depending on the duration of the period on which they are based has implications both for the theoretical specification and the corresponding methods of econometric estimation. The essence of the problem is that it may not be possible actually to disentangle contrary specifications by empirical means alone. The difficulties inherent in this approach are illustrated for the Pinkham's data, by Weiss and Windal (1980), who find, on the basis of improved estimation techniques, renewed evidence for cumulative advertising effects but a correspondingly reduced life of advertising, but

there was no allowance made for the potential impact of data interval bias. Without resolution of the specification problem, there must be uncertainty of the basis on which estimates of advertising elasticities and other parameters are derived. This uncertainty extends to an evaluation of whether advertising really does have effects through time or is largely expended in shorter periods. The phasing and budgeting implications of this are obvious.

Of further concern is the actual status of the implicit tests of the Dorfman-Steiner theory which have been a feature of this line of enquiry. Applying the theory to his results Palda concluded both that the theory was appropriate and that Pinkham's advertising was approximately optimal. Reassessing the implications of his results Schmalensee was forced to the opposite conclusion regarding Pinkham's advertising policy. "Clearly, either Pinkham's management did not view the firm's demand function as Palda described it, or they behaved in a consistent yet irrational manner . . ." (Schmalensee, 1972, pp. 12-13).

This backdrop of generally negative features associated with a particular methodology is in some contrast to the interpretation placed on this generic method by advertising practitioners. (Dhalla, 1978; Broadbent, 1984). Their emphasis is on quantification per se and the utility of numerical estimates to the problem of determining, or evaluating, advertising against the standard of the optimum. There is, moreover, implicit application of the generic Dorfman-Steiner results in the evaluation of actual advertising sales ratios against the theoretical optimum determined by the ratio of the advertising and price elasticities. (Broadbent, 1980). In addition, however, to the reservations that arise

about the efficacy of these estimates due to specification problems, the nature of the input data, the question of various degrees of accuracy, there is the additional problem that the elasticities themselves may not be constant and therefore the implied optimum advertising investment changes with different conditions. (Rasmussen, 1952) An implication of the Dorfman-Steiner analysis is that advertising and price adjustment should both be in the same direction, thus increased advertising is associated with increased prices, and vice versa. The assumption of constant elasticities suggests that the price and advertising adjustments should be once and for all, which may be practicable, but if the elasticities are variable then the policy implication of the theorem may be impracticable on other grounds which the isolation of the advertising decision from broader marketing considerations tends to obscure. Advertising budget decisions should be integrated into an overall marketing strategy.

Conclusion

As topics for scientific enquiry, the foregoing cases exemplify the process of abstraction. Advertising is taken as a whole largely in disregard of the heterogeneity of advertisements and the vagaries of message comprehension, audience composition and context. Such simplifications have their role, for without the attempts to generalise the detail would be overwhelming. The modelling process, by definition, can only proceed by imposing simplification to the complexity of observed phenomena and their generative processes, moreover, models gain in their internal simplicity with greater abstraction from the detail of phenomena. Models, however, are constrained by the analytical tools that can be applied, thus the phenomena are subjected to a rigorous filter as the model maker seeks tractability.

Clearly, this process has its limitations and ultimately the efficacy of model building in general, or a model in particular, must be judged by criteria external to the model itself. The dominant mode is the comparison of the model either with others in its class or, less frequently, with radical alternatives. This proceeds either at the purely theoretical level or in relation to some form of empirical enquiry and even extends to a comparison with actual behaviour on the assumption that an apparently non-model bound actor is inevitably operating some implicit model, however rudimentary and unarticulated. The model maker's imposition of structures, analytical procedure and sphere of application form an inter-related whole, although this inherent unity is often sacrificed as specialisation in conception and technique dictate. In short, model making has its own momentum and self-defined sphere of operation.

In the cases considered above these latter features are amply demonstrated; each topic is pursued largely in disregard of the other although they are clearly related. Their separation owes much to a disciplinary divide primarily between psychology (with its derivatives in market research practice) and economics/operations research whose focus is the specification of tractable objective functions. This divide is apparently maintained even though the gains from specialisation are demonstrably not greater than the costs of separation. Ironically the pursuit, in each case, of PE science without regard to the evidence has, to our minds, reinforced the argument for the RC view of science.

What, then, of scientific research in advertising? With evident justification, there are few indications of any slavish adherence to principles or rules. It is not that these are non-existent but their almost

Implicit, experientially based use is a matter of style: the overriding rule is that there is no rule - save customer (advertiser) satisfaction. This is entirely consistent with an industry culture which takes pride in its adaptability and particularly its capacity to create. Creativeness itself is individualistic and individualism is inimical to generalisation. Agencies, however, must negotiate with clients and clients, in turn, with other interests in their organisations. It is here that pragmatic models - explanations, ideas, suggestions, etc. - have their place. Those prevail that are plausible, within the bounds of common sense, and amenable to easy communication. Thus the rule of thumb methods of outlining budget determination and the invocation of cognitive concepts themselves find their reinforcement. Time, costs, interest, conception and personnel, in addition to user requirements and expertise limit the scope for this research. Research becomes part of a behavioural process serving many needs largely to the exclusion of the acquisition of objective and definitive knowledge for its own sake. (May, 1981; Piercy, 1983).

But this cuts both ways. Myths may be perpetuated and truths displaced by mere fashion. Management is not so astute that its judgement is infallible in this regard. Indeed, as Mintzberg (1975) demonstrates, whatever managers do with their time it is not the planning, organising, co-ordinating and controlling attributed to them by management scientists. Moreover, the comprehensive (scientific?) management that would follow an objective depiction of activity is unimplementable and unrealistic (Lindblom, 1959). The advocacy of rules for optimal advertising and the prescription that attitudes need to be changed to affect behaviour are further instances of model approaches that are waiting for the world to prove them correct and are advocated despite evidence which should support their

extensive qualification if not their demise.

In the case of optimal budgeting there is a selective acceptance of a series of simplifications which stretch credulity and contradict most of the observable characteristics of both advertisements and advertising practice. And, in the case of consumer choice, there is acceptance, despite a weight of evidence to the contrary, of plausible but scientifically untenable mechanisms. These are contra-indications of science in advertising research, revealing an almost mystical belief in the optimum which is undemonstrable and a belief in cognitive transformations when these have been shown not to be causative.

References

- Ajzen, I. & Fishbein, M. (1977), Attitude-behavior relations: a theoretical analysis and review of empirical research, Psychological Bulletin, 84, 888-918.
- Ajzen, I. & Fishbein, M. (1980), Understanding Attitudes and Predicting Social Behavior, Englewood Cliffs, N.J.: Prentice-Hall.
- Albion, M. S. & Farris, P. W. (1981), The Advertising Controversy, Boston, Mass.: Auburn House Publishing Co.
- Atkin, C.K. (1984), Consumer and social effects of advertising. In Progress In Communication Sciences (Ed.) Dervin, B. & Volgt, M. J., Norwood, N.J.: Ablex Publishing.
- Broadbent, S. (1980), Price and Advertising: Volume and Profit. Admap, November, 532-540.
- Broadbent, S., Ed., (1984), 20 Advertising Case Histories, pp. 141-151. London: Holt, Rinehart & Winston.
- Channon, C. (1981), Agency Thinking and Agencies as Brands, Admap, March, 116-121.
- Chiplin, B. & Sturgess, B. (1981), Economics of Advertising, 2nd edition, London: Holt, Rinehart & Winston.
- Clarke, D. G. (1976), Econometric Measurement of the Duration of Advertising Effect on Sales, Journal of Marketing Research, Vol. 13, November, 345-357.
- Colley, R. H. (1961), Defining Advertising Goals for Measured Advertising Results, New York: Association of National Advertisers.
- Dhalla, N. K. (1978), Assessing the Long Term Value of Advertising, Harvard Business Review, Jan./Feb., 87-95.
- Dorfman, R. & Steiner, P. O. (1954), Optimal Advertising and Optimal Quality, American Economic Review, Vol. 44, 826-836.
- Doyle, P. (1984), Marketing Management. In The Economic Management of the Firm (Ed.) Pickering, J. F. & Cockerill, T. A. J., pp. 132-152. Oxford: Phillip Allan.
- Driver, J. C. & Foxall, G. R. (1984), Advertising Policy and Practice, London: Holt, Rinehart & Winston.
- Ehrenberg, A. S. C. (1972), Repeat Buying, Amsterdam: North-Holland.
- Ehrenberg, A. S. C. (1974), Repetitive advertising and the consumer, Journal of Advertising Research, 14, 25-34.
- Ehrenberg, A. S. C. & Goodhardt, G. J. (1980), How Advertising Works, New York: J. Walter Thompson/MRCA.

- Engel, J. F. & Blackwell, R. D. (1982), Consumer Behavior, 4th edition, Hinsdale, Ill.: Dryden.
- Fishbein, M. (1973), The Prediction of Behaviour from Attitudinal Variables. In Advances in Communications Research, (Ed.) Mortensen, C. D. & Sereno, K. K., pp.3-31. New York: Harper & Row.
- Fishbein, M. & Ajzen, I. (1975), Belief, Attitude, Intention, and Behavior, Reading, Mass.: Addison-Wesley.
- Foxall, G. R. (1983), Consumer Choice, London: Macmillan; New York: St. Martin's.
- Foxall, G. R. (1984), Evidence for attitudinal-behavioural consistency: implications for consumer research paradigms, Journal of Economic Psychology, 5, 71-92.
- Hansen, F. (1976), Psychological theories of consumer choice, Journal of Consumer Research, 3, 117-142.
- Howard, J. A. (1977), Consumer Behavior: Application of Theory, New York: McGraw-Hill.
- Howard, J. A. (1983), Marketing theory of the firm, Journal of Marketing, 47, 90-100.
- Jacoby, J., Chestnut, R. W. & Silberman, W. S. (1977), Consumer use and comprehension of nutrition information, Journal of Consumer Research, 4, 119-128.
- Kakabadse, A. (1984), Politics in Organisations: An Essential Consideration for Decision Making, Marketing Intelligence and Planning, Vol.1, No.3, 55-71.
- Koutsogiannis, A. (1982), Non Price Decisions: The Firm in a Modern Context, London: The Macmillan Press.
- Krugman, H. E. (1965), The impact of television advertising: learning without involvement, Public Opinion Quarterly, 29, 349-356.
- Lastovicka, J. L. & Bonfield, E. H. (1982), Do Consumers have Brand Attitudes?, Journal of Economic Psychology, 2(1), 57-75.
- Lavidge, R. J. & Steiner, G. A. (1961), A model for predictive measurements of advertising effectiveness, Journal of Marketing, 25, 59-62.
- Lindblom, C. E. (1959), The Science of "Muddling Through", Public Administration Review, 19(2).
- McGuire, W. J. (1976), Some internal psychological factors influencing consumer choice, Journal of Consumer Research, 2, 302-319.
- May, J. P. (1981), Marketing Research: Illuminating neglected areas, Journal of the Market Research Society, Vol.23, No.3, 127-136.

- Mintzberg, H. (1975). The Manager's Job: Folklore and Fact. Harvard Business Review. July-August, 49-61.
- Olshavsky, R. W. & Granbois, D. H. (1976). Consumer decision making - fact or fiction?. Journal of Consumer Research, 6, 93-100.
- Palda, K. S. (1964). The Measurement of Cumulative Advertising Effects. Englewood Cliffs, N.J.: Prentice-Hall.
- Peter, J. P. & Olsen, J. C. (1983). Is Science Marketing?. Journal of Marketing, Vol. 47, Fall, 111-125.
- Piercy, N. (1983). A Social Psychology of Marketing Information. Journal of the Market Research Society, Vol. 25, No. 2, April, 103-119.
- Rasmussen, A. (1952). The Determination of Advertising Expenditure. Journal of Marketing, 16, April, 439-446.
- Reekie, W. D. (1981). The Economics of Advertising. London: Macmillan.
- Robertson, T. S. (1976). Low commitment consumer behavior. Journal of Advertising Research, 16, 19-24.
- Schmalensee, R. (1972). The Economics of Advertising. Amsterdam: North Holland Publishing Co..
- Simon, J. L. (1984). How to Choose the Optimum Advertising Investment. International Journal of Advertising, Vol. 3, No. 4, 321-333.
- Tauber, E. M. (1981). Utilization of concept testing for new product forecasting. In New Product Forecasting (Ed.) Wind, Y., Mahajan, V. & Cardozo, R. N., pp. 199-213. Lexington, Mass.: D. C., Heath.
- Weiss, D. L. & Windal, P. M. (1980). Testing Cumulative Advertising Effects: A Comment on Methodology. Journal of Marketing Research, Vol. 17, August, 371-378.