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CHANGING CONSUMER ATTITUDES IN STEADY MARKETS

Francesca Dall'Olmo Riley

A Thesis Submitted in Partial Fulfillment of the
Requirement of the Degree of Doctor of Philosophy

London Business School
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ABSTRACT

The thesis studies cross-sectional and longitudinal relationships between consumer attitudes towards brands and their purchase behaviour, both at the aggregate and at the individual level.

Little is known about how changes in the one relate to changes in the other.

At the cross-sectional level we examine the relationship between attitudinal responses, purchase intentions, and advertising recall and various measures of past, current and future brand purchasing.

Our empirical results on US data confirm previous findings in the UK that the level of our various attitudinal and purchase behaviour measures are mostly determined by and predictable from the size of the brand in terms of its market share, rather than by any more specific properties of the brand itself.

At the longitudinal level, consistent with very limited previous research, we find that while attitudinal measures and buying behaviour appear stable over time when examined at the aggregate level, **individuals** change their expressed opinion greatly between interviews: on average only 50% of consumers give identical responses.

The thesis largely explains this "volatility" of attitudinal responses at the individual level by means of a relationship with the response level (Double Jeopardy). We quantify such relationship in a simple and generalisable form. Finally, we relate individual changes in attitudes to individual changes in brand usage.

The thesis contributes to consumer behaviour research also in terms of the scope of the measures employed, the variables examined, and the product fields surveyed. Furthermore, the research increases the scant knowledge concerning individual attitude variations over time, also in terms of interpretation and quantification.

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For all the errors, mistakes and oversights that remain in this work, I take full responsibility.

INTRODUCTION

Chapter 1: INTRODUCTION AND OBJECTIVES OF THE THESIS

CHAPTER 1: INTRODUCTION AND OBJECTIVES OF THE THESIS

1. INTRODUCTION AND OBJECTIVES OF THE THESIS.

This work is positioned within the general stream of marketing research concerned with the study of Consumer Behaviour, i.e. with the attempt to understand, explain, predict, and measure *the way* individuals choose what they buy, and the processes behind the formation of their attitudes concerning products and brands. This differs from the study of Buying Behaviour in a narrow sense, which is involved mainly with description and prediction of *what* consumers buy and of the frequency with which they buy.

The study of Consumer Behaviour has been the concern of several disciplines, from economics to psychology, hence the relevant literature is vast.

As explained in Chapter 2, marketing researchers have approached the study of Consumer Behaviour, and of attitudes in particular, by borrowing heavily from theories developed within other disciplines, and especially from those which have evolved within a social psychology framework. These mostly postulate a complex evaluation process, leading to attitude formation and to subsequent behaviour.

However, while the study of attitudes in psychology has usually dealt with rather involving issues (e.g. donating blood, or smoking), marketing researchers have analyzed attitudes often in the context of much less involving activities, such as routine brand choice. The complex choice processes borrowed from psychology have therefore found some direct application only to choices concerning what *product* category to acquire, but have revealed themselves often inadequate to explain the relationship between consumers' attitudes and their *brand* purchase behaviour.

Rather, in the case of attitudes towards brands, solid theories of Buying and of Consumer Behaviour (see Chapters 4 and 5), backed by some existing empirical evidence (see Chapter 6), and by our own findings here, have pointed towards a different conceptual framework, whereby a "statistical" size effect, instead of a complex evaluation process, regulates the relationship between the market share of the brand and the level of attitudinal responses.

A major theoretical orientation of our work, which we seek to confirm, is therefore that the level of various attitudinal and purchase behaviour measures are mostly determined by and predictable from the size of the brand in terms of its market share, rather than by any more specific properties of the brand itself. A similar effect would also largely govern previously unexplained variations over time in attitudinal and behavioural responses at the individual level.

This corresponds to the pattern found in buyer behaviour, where a larger ratio between the frequency of buying the brand and the frequency of purchasing the product (i.e. w/w_p), occurs

just because of the large size of the brand, rather than because of anything specific about the brand itself (Goddard, 1978). All buying behaviour phenomena appear, in the reality of facts, to be driven only by the size of the brand, in clear contrast with Markov's theory, where switching probabilities remain constant even when brand shares change (see Chapter 5).

Within such a conceptual framework, the main objective of the thesis is to study the relationship between consumers' attitudes towards brands and their purchase behaviour, especially since little is known about how changes in one element relate to changes in the other.

Attitudinal and behavioural data are currently available from different sources. The main sources for the thesis are data collected through interviews with some 200 consumers in the US and 500 consumers in the UK, regarding their buying frequencies and recencies, purchase intentions and numerous attitudinal beliefs for each of about ten brands in each of several product fields (fast moving consumer goods in the UK and a combination of fmcg and services in the US). One of the most important features of the data (and the one which will allow us to study certain aspects of change at the individual consumer level) is that the same consumers were interviewed twice during the course of several months with the same questionnaire format.

Our work for the sake of this thesis has been mainly on the US database, while the results (mainly unpublished) which were obtained a few years earlier from the British data by a group of researchers at the London Business School will be used as a comparison and as a bench-mark. Our work on the US data not only partially replicates, but extends and generalizes the British results, from the point of view of the kind of analysis conducted, the measures employed, and the results obtained. By means of this extension and generalization we can also provide an interpretation to previously unexplained patterns of results (see below).

Thanks to the richness of the data and to its cross-sectional and longitudinal nature, we have been able to pursue the following specific objectives (see Chapter 8):

1) explanation of the relationship between attitudinal responses, purchase intentions, and advertising recall and various measures of past, current and future brand usage;

2) whilst our main attitude measure is in the form of beliefs regarding eleven or so brand attributes in each product field, we also examine the relationship between usage and different kinds of attitudinal measures, such as the number of attributes mentioned for each brand or the number of brands mentioned for each attribute. By so doing, we can establish if there are any groupings of complementary brands or any salient attributes in each product field;

3) study how patterns of multi-brand buying influence the relationships at 1) and 2) above;

4) while pursuing the above objectives, we discuss issues concerning the validity of the measures employed.

The main thrust of the thesis, however, consists of the study of attitudes, purchase intentions, and advertising recall *over time* at both the aggregate and the individual level.

Few consumer studies have measured the attitudes to brands of the same individuals interviewed at different points in time. But all those that have been carried out have yielded two highly contrasting results. On the one hand, average attitude responses overall were very steady at successive interviews. On the other hand, individual attitude responses were very variable: on average only around 50% of individuals gave identical responses twice (see Chapter 9).

This high degree of change at the individual level underlying aggregate stability is so far not well understood and is therefore the motivation for three other main objectives of the thesis, namely to:

5) explain and understand the relationship between stability of responses at the aggregate level and "volatility" at the individual level (Chapter 9);

6) establish a quantifiable relationships between the rate of individual change and the initial response level (Double Jeopardy), (Chapters 9 and 10);

7) relate individual changes in attitudes to individual changes in brand usage (Chapter 11).

The contribution that this thesis is set to make is therefore dual. Firstly we will be expanding on the scope of the existing research about the relationship between consumers' attitude and their purchase behaviour, in terms of the measures employed, the variables examined, and the product fields surveyed. Secondly, we will increase the scant knowledge concerning individual attitude variations over time, especially in terms of giving a well founded interpretation to results that rather puzzled previous researchers, and of establishing a quantifiable and "predictable" relationship between the variables. Overall, the results will serve to substantiate the conceptually "statistical" framework within which this thesis is positioned.

First, however, the literature review in Chapters 2 to 6 will outline in some detail the state of the knowledge of consumer research in these matters and the specific gaps that this work aims to fill.

PART I: LITERATURE REVIEW

Chapter 2: **EMERGING PARADIGMS OF CONSUMER RESEARCH.**

Chapter 3: **MODELS OF ATTITUDE FORMATION AND CHANGE.**

Chapter 4: **INFORMATION PROCESSING**

Chapter 5: **MODELS OF BUYING AND OF CONSUMER BEHAVIOUR**

Chapter 6: **ATTITUDE BEHAVIOUR CONSISTENCY**

CHAPTER 2: EMERGING PARADIGMS OF CONSUMER RESEARCH

2.1. The Theoretical Bases of Consumer Behaviour

2.2. A New Conceptual Approach to Consumer Behaviour

2.3. Stationarity versus Change

2.4. Definitions and Clarifications

2. EMERGING PARADIGMS OF CONSUMER RESEARCH.

Before proceeding to a detailed analysis of the Consumer Behaviour literature, this chapter identifies the main paradigms originating from the vast research on the subject. This will give a framework to the various theories and models which will be discussed in following chapters, and will help positioning our work since the very beginning.

2.1. THE THEORETICAL BASES OF CONSUMER BEHAVIOUR.

The development of the study of Consumer Behaviour and of Consumer Attitudes as a subdiscipline of Marketing has roots in both Economics and Psychology.

As Mittelstaedt (1990) notes, from the 1950s through the mid-1970s the study of Consumer Behaviour had greatly evolved, within the marketing literature, with a shift towards the followings:

1) a "micro" approach, i.e. a focus on the purchase behaviour of individual consumers or households;

2) an increased concern with methodology and, due to a greater emphasis on hypothesis testing research, a surge in the reliance on experimental methods (which is also connected to point 1 above);

3) a psychological, rather than economic approach.

The creation in 1970 of the Association for Consumer Research was pivotal to the institutionalization of Consumer Behaviour as a subdiscipline of Marketing, rather than Economics.

The Economic and the Psychological approaches to Consumer Behaviour had in fact diverged more and more during the early 1960s, from the points of view of both their objectives and their philosophies of science.

Mittelstaedt remarks that, in the neoclassical foundations of Economic theory, the behaviour of the individual consumer was a major input for the examination of more aggregate outcomes, rather than something to be explained. Hence, the objective of traditional economics was the study of the "behaviour" of commodities (prices, interest rates, etc.), rather than the behaviour of people (van Raaij, 1981).

The object of psychology, on the other hand, had always laid with the prediction, explanation and control of individual behaviour. Marketing researchers now generally share with

psychologists this general objective, although they might disagree about the explicit phenomena to be explained: e.g. attitude formation, attitude change, the initial purchase act, repurchase, etc..

From the point of view of divergent philosophies of science, in the early 1960s marketing practice and, to some extent, marketing literature had been influenced mainly by three psychologic models of consumer behaviour, which, although from different approaches, all rejected the concept of "rational" behaviour supported by classic economic theory:

1) *Behaviourism*, where the consumer was depicted as a "non-rational" human being, whose behaviour consisted of affective responses to stimuli as shaped by previous experience;

2) *Motivational Research*, according to which the irrational consumer would make a purchase not for its utility, but because of its symbolic value;

3) *Reference Group Theory*, which depicted consumers as non-rational in the sense that their behaviour would be determined by their perceptions of the behaviour of other people.

During the 1960s, while a form of microeconomic theory at odds with the necessity of realistic assumptions was growing, a fourth model, Cognitive Theory and its implicit realism, was coming forward on the Psychology front (Mittelstaedt, 1990).

The cognitive decision process rejected the strict concept of "rational economic man" by portraying choice not as conducing to optimisation, but, rather, as a satisficing activity involving the setting of aspirational targets and the use of simple procedures for forming judgements (Earl, 1990). This allowed consumers to be heterogeneous in the way they set their priorities and decision rules.

On the other hand, conventional economic models depicted individuals both as homogeneous in their decision-making procedure (the source of uncertainty lying in the environment, rather than in their decision processes), and as rational in their ability to rapidly discover changes in the environment and to react accordingly (Earl, 1990).

By the late 1960s many marketing scholars had embraced the cognitive psychological configuration which pictured consumers as goal seeking, problem solving, information processing persons, as depicted by the many models of Consumer Behaviour which were created around that time.

Eventually, even in Economics the notion of "rational economic man" was being disputed, as part of the more general debate on the necessity of descriptively realistic assumptions, a controversy which divided American psychologists as well.

"Revolutionary changes" in the traditional economic model of consumer behaviour are described by Ratchford (1975) in his review of the economic theory of brand preference

developed by Lancaster (1971) and Rosen (1974). Similarly to the multi-attribute attitude models of brand preference that were being developed in psychology (see Chapter 3), this new economic approach viewed goods as a bundle of attributes. Hence utility or satisfaction would be derived from the properties or characteristics which goods possessed, rather than from the goods themselves.

However, the relevant characteristics of the goods were still defined in terms of the *objective* measurement of the good itself, rather than in terms of *perceived* attributes, as done in the multi-attribute models of the psychology tradition. Hence once again consumers were assumed to be homogeneous: Lancaster's and Rosen's models would break down if all consumers did not evaluate the goods' attributes in the same way.

A reconciliation between economics and psychology has been attempted by the so called "behavioural economics" stream, which sees economic behaviour as the function of human motives, perceptions, attitudes, expectations, and bounded by economic conditions. As van Raaij (1981) recounts, this approach was first proposed by Katona in the early 1960's, and was then further developed by van Raaij himself, Strümpel and Katona in the 1970's. However, as Earl (1990) points out, behavioural economics and behavioural psychology still differ in their approaches. Whilst the former assumes that actions are preceded and determined by some form of cognitive information processing which serve as an intervening variable between changes in circumstances and changes in behaviour, the latter sees actions as determined by the environmental changes that have followed prior actions of the same kind.

In their analysis of the characteristics of economic and psychology theories of consumer behaviour (and of possible interactions between the two), both Mittelstaedt and Earl associate the cognitive approach of the latest psychology theories to "descriptively realistic assumptions" and to the notion of a "rational" consumer (in the sense described above). Behaviourism, vice-versa, would view the consumer as "irrational" and would dismiss the reality of a complex set of information available to the individual. At best, Earl concedes that behaviourism might be applicable to routine choice behaviour.

Why and to what extent we disagree with the latter point of view will be discussed in the next Section and in the detailed review of literature in Chapters 3 to 6.

2.2. A NEW CONCEPTUAL APPROACH TO CONSUMER BEHAVIOUR.

The reference made in the Introduction to the study of *individuals* marks one of the main shifts in emphasis in attitudinal research in the last twenty five years or so, namely the increasing consideration given to the behaviour of heterogeneous consumers, in contrast with the homogeneity of consumers assumed by economic consumer behaviour theory.

As mentioned in the previous section, marketing research has gradually abandoned an economic orientation to the study of consumer behaviour, and has adopted an approach driven by psychology. In so doing, the choice process behind the behaviour of the individual consumer has become the variable to be explained.

The more widespread availability of data at the individual level (Schmalensee, 1989) has also contributed to this shift in emphasis, away from the mere examination of aggregate phenomena.

The change from an economics to a psychology orientation has also meant an increased emphasis on methodology, and on validation in particular, since it was felt that the measurement of verbal expressions of attitudes had similar requirements to the measurement of psychological constructs.

Like psychological constructs, attitudes can be considered as being evidenced in a variety of behaviours (e.g. beliefs) rather than in any isolated, observable dimension, hence Joyce's (1971a) definition of attitudes as "the consumer's system of beliefs, associations, images and memories concerning the brand" (see Section 2.4.). An approach similar to Joyce's definition will be adopted in the present work.

In the Introduction, however, we outlined the limitations of a straightforward application of models of attitude formation and choice process developed in psychology to *brand* choice situations. Therefore, within the general framework developed in psychology of studying individual, heterogeneous consumers, a new conceptual approach is coming forward, whereby attitudes towards different brands are seen as dependent ~~from~~ on the market shares of the brands themselves, rather than as a result of a complex evaluation process. This is consistent with both theoretical and empirical evidence (see Chapters 4, 5, and 6), and will be further established by our own results.

The understanding of the two dominating paradigms of attitudinal research arising from the psychology orientation is crucial to the development of the new conceptual approach that we support in this thesis. The two paradigms will be discussed in general terms in the next section,

while the implications for the present work of focusing on the study of individual consumers will be dealt with in Chapter 9, when discussing relevant empirical results.

2.3. STATIONARITY VERSUS CHANGE.

The two main approaches which have arisen from the psychology orientation are *cognitivism* and *behaviourism*. While both rejecting the concept of a maximum utility seeking economic man, and both striving to achieve some kind of consistency between attitudes and behaviour, the way this coherence is achieved constitutes the primary difference between the two approaches.

Cognitivism sees the consumer as goal seeking, problem solving, information processing, whose completely formed attitudes determine a coherent choice; in contrast behaviourism considers previous experience (conscious or unconscious) as the chief element, shaping both affective and cognitive components in a reinforcement or descriptive role.

The review in Chapters 3 to 6 of the various theories upon which cognitivism and behaviourism draw, will make apparent that the fundamental underlying distinction between the two approaches rests on the differentiation (and the confusion) between *change* and *stationarity*.

All consumer choice models designed to illustrate the cognitive decision procedure (e.g. the Howard-Sheth or the AIDA models described later) assume that the same, causal process is repeated at each purchase, while the only effect attributed to previous experience is, at the most, a feed-back loop from purchase to intention through satisfaction (see Chapter 5, Figure 5.1.).

A deliberate and conscious search effort, and an evaluation process is supposed to take place at every purchase, to include all available information on all possible options.

Because of the assumed lack of influence from previous experience, and also since there is largely no consideration for multi-brand buying, the world depicted by the cognitive paradigm is constantly dynamic, where the purchase of a different brand is invariably seen as brand switching, and where each purchase is always treated, in effect, as the first.

The cognitive paradigm can therefore be illustrated as assuming that the internalisation of a persuasive message which *modifies* cognitive, affective and conative processes is a necessary precursor of behavioural *change* (Foxall, 1984b). Because of this emphasis on modification and change, cognitivists see the relationship between attitudes and behaviour not only in terms of correlation, but also in terms of unilateral causality (Attitude Change ⇒ Behaviour Change).

On the other hand, the behaviourist paradigm is concerned with providing the *reinforcements* required to ensure the *repetition* of choice behaviour through such means as shaping or modelling. In its extremes, behaviourism attributes little explicative value to the concept of attitude, which simply becomes a class of behaviour, namely "verbal behaviour", distinguished from nonverbal, "overt" action (Foxall, 1984b).

Because of its emphasis on reinforcement and repetition, behaviourism lends itself to the interpretation of routine behaviour in a steady-state environment, and the correlation between Attitudes and Behaviour is in terms of mutual reinforcement and consistency (Attitudes ⇔ Behaviour), rather than causality.

The choice process assumed by the behaviourist orientation therefore places an important emphasis on the role of habit, past experience, and routine behaviour, rather than on the collection and evaluation of all available information, in order to reduce the "cost of thinking".

Under these premises, consumers performing routine purchases in a steady-state environment will limit their choices among a repertoire of brands of which they know the characteristics (Olshavsky and Granbois, 1979). Switching among them will be both rational (consumers know that brands differ little, if at all) and part of normal routine purchase behaviour (Bass et al., 1972; Ehrenberg, 1974; Ehrenberg, 1972,1988). The behaviourist approach therefore allows for multi-brand buying, without requiring the assumption of significant change in habits or switching.

The above observations and the ones that follow illustrate why earlier we dismissed the interpretation given by Mittelsdaedt (1990) and by Earl (1990) that cognitivism is based on the more realistic assumption of a "rational" consumer than behaviourism.

The behaviourist paradigm can also be applied to explain either change (e.g. because of unavailability of the usual brand or set of brands, or any other reason) or first choice situations (both for frequently and infrequently purchased goods), where trial occurs under conditions of (as yet) uncertainty and limited information (Ehrenberg, 1974). On the basis of empirical evidence, the hypothesis of extensive information gathering and evaluation is dismissed as unrealistic. Even for so-called high-involvement purchases consumers in fact appear to make use of their existing value systems and of quite limited information search (Wasson, 1979; Olshavsky and Granbois, 1979; Markin, 1979) to supplement the uncertainty deriving from a often non-routine choice.

Under such conditions, consumers will have only an awareness of, rather than a formed attitude towards, the object of purchase. Only trial will reinforce the awareness into a more well-

formed attitude and the loop described above will continue, either in terms of repetition of choice behaviour or rejection (see the ATR model described in Chapter 5).

Foxall (1984b) remarks that this stream of research linking the measure of attitudes and intentions to current and past purchase behaviour (e.g. Ehrenberg and Goodhardt, 1980) and to the reinforcing circumstances in the situation in which purchase occurs (e.g. Lutz, 1981; and some of the literature reviewed in following chapters), is increasingly taking a predominant position in consumer research, building upon Bem's (1967, 1968) Self-attribution theory, Festinger's (1957) Cognitive Dissonance elaboration (e.g. Dodson et al., 1978), and, in part, also upon Skinner's Experimental Analysis of Behaviour.

The Behavioral Perspective Model developed by Foxall (1990, 1992a, 1992b) constitutes the most recent development of the behaviourist paradigm that, while making allowance for internal, mental states, emphasises the context in which various forms of consumer behaviour tend to occur (see Chapter 5). This is in contrast to the tendency by cognitive decision models to decontextualize consumer behaviour because of their excessive emphasis on the individual's information processing activity.

Apart from the solid theories behind it, the adoption of a behaviourist paradigm makes sense also in the light of its ability to deal with both situations of stationarity and of change, and for both frequently and infrequently purchased goods and services, but with an accent on an environment which, overall, and at least in the medium term, is characterised by a rather steady aggregate pattern of purchase behaviour (Ehrenberg, 1972,1978).

In this kind of environment, where attitudes (in the aggregate) appear to be even more stable than behaviour (Channon and Bullen, 1975; Wasson, 1979)[1], and appear to be largely dependent upon both past and current purchases (Bird and Ehrenberg, 1966a; Ehrenberg and Goodhardt, 1981; Barwise and Ehrenberg, 1985; Castleberry and Ehrenberg, 1990), this paradigm shift also marks the transition from a predictive to a diagnostic approach towards the study of attitudes (Channon and Bullen, 1975; Barwise, 1985), and to a "statistical", market-share led conceptual framework.

The importance of studying attitudes is not any longer placed on their capacity to predict behaviour: in a steady state purchase environment, there can be, almost by definition, no "prediction" in the literal sense of the word, since it is sufficient to look at patterns of past behaviour to know, quite closely, what the future is going to be. If, however, the environment

[1] The notion that attitudes are more stable than behaviour comes, intuitively, also from the observation that the act of buying is a discrete action, while usage is more continuous in time. Since changes in buying, in terms of recency, do not necessarily mean usage change, why should attitudes change as quickly and/or frequently?

is dynamic, prediction becomes guessing, unless it is based on experience of past dynamic behaviour. Patterns of dynamic events with consistent kinds of outcomes can become predictable to the extent that they are so well-known that they almost resemble "steady" kinds of behaviour.

The rationale behind the study of attitudes therefore lies on first achieving a better knowledge of consumer behaviour, by understanding regular patterns of usage and attitudes and what consistent deviations to these patterns there are. Only on the basis of this fundamental understanding, it will be possible to diagnose if further deviations are to be interpreted in terms of significant changes in purchase behaviour and/or consumers' attitudes and to explain why they are occurring.

This is substantially equivalent of what is done, in the study of buying behaviour in a narrow sense, through the utilisation of models of stationarity such as the Dirichlet, where any variation from the model which is not consonant with known consistent deviations of behaviour can be recognised as a true exception and as a signal of some kind of dynamic state in the market place. Once we know that "something different" is going on, we can then start looking for the causes (e.g. a sale promotion).

The relationship between buyer (in the narrow sense) and consumer (in the wide sense) behaviour can therefore be described in terms of different, but complementary functions, of description, by the former, and explanation by the latter (Ehrenberg and Goodhardt, 1979).

Before proceeding to a detailed analysis of the models and theories behind the paradigms just outlined, a few definitions and clarifications are necessary. This is done in the next section.

2.4. DEFINITIONS AND CLARIFICATIONS

The conflict between cognitivism and behaviourism, and the consequent issue of the causality between Attitudes and Behaviour is resolved by some researchers with the distinction between *high involvement* products (or social concepts) and *low involvement* products. While for the former Attitudes could indeed lead to Behaviour, for the latter the lack of a real distinction between brands in many product categories would imply a strong reinforcement effect of Behaviour on Attitudes. However, as discussed in the previous section, limited knowledge and information processing may often characterize even high involvement decisions (e.g. Olshavsky and Granbois, 1979; Ehrenberg and Goodhardt, 1977-1980), hence a distinction of that kind has strong limitations.

Other researchers (e.g. East, 1990) make a similar kind of distinction between product and brand choice, and therefore regard models as the Theory of Reasoned Action (see Chapter 3) as applicable to the former, rather than to the latter instance.

The issue of the existence and direction of causality between Attitude and Behaviour (and/or Attitude Change and Behavioural Change) is one of the main concerns of the major theories of Consumer Behaviour that will be reviewed in the next chapters.

Also the many existing definitions of Attitudes in various degrees correspond to the researchers' view of the causal relationship between Attitudes and Behaviour.

For example Allport (1935) describes an Attitude as a "*mental and neural state of readiness to respond, which is organized through experience and exerts a directive and/or dynamic influence on Behavior*".

For Fishbein and Ajzen (1975) "*Attitude is a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object*" and since attitudes are learned, they can also be changed to modify subsequent behaviour.

On the other hand Bem (1968) considers an Attitude as "*an individual's self-description of his affinities for and aversion to some identifiable aspect of his environment*" (e.g. I must like brown bread, since I see myself always eating it).

Finally, Joyce (1971a) regards Attitudes as "*the consumer's system of beliefs, associations, images and memories concerning the brand*". He also makes no distinction between "Brand Attitudes" and "Brand Image". Joyce's definition has three distinctive features: (1) it does not refer to a propensity to act in any given way; (2) attitudes are supposed to mean more than the overall evaluation of the product by the consumer; (3) it implies that attitudes can be inferred

or measured by research methods which are different from establishing the consumer's choice in purchasing situations.

A second concept strictly connected to Attitude is Belief. It is generally accepted by researchers that *Attitude* corresponds to the concept of *Affect* and *Belief* to the notion of *Cognition*. Attitudes can therefore assume either a positive or a negative valence, while beliefs are usually considered neutral (Kassarjian and Robertson, 1981).

There is, however, disagreement regarding the relation between attitudes and beliefs.

The Structural Approach represented by Krech, Crutchfield and Ballachey (1962), (also called Tripartite View by Lutz (1981) who reviews it), sees no sharp discrimination between beliefs and attitudes, and considers attitudes as composed by three elements:

- Cognition (belief);
- Affect (positive/negative emotional reaction);
- Conation (intended and actual behaviour).

There would be basic consistency of the three elements in terms of favourability or unfavourability toward the attitude object.

Evidence for the construct validity of this approach is obtained by Bagozzi et al. (1979) in the context of students' attitudes towards and actual participation in laboratory research. Failure by other researchers in the past to predict behaviour adequately from attitudes is suggested to be due, in part, to the omission of the relevant attitudinal component and to the focusing only on cognitions or beliefs.

They also hint that different attitudinal components may be affected in various degree by persuasive communications, and that attitudinal responses of consumers would be heterogeneous and complex. Because of possible interaction among components, some attitudinal objects may induce widely disparate and even conflicting attitudinal reactions. People would differ in their propensity to form and tolerate conflicting attitudinal reactions, depending on their experiences and personalities.

On the other hand, Bem (1968) considers beliefs as an individual's observation of his "cognitive" responses which, with the perception of his internal "affective" responses, are the components of self-perceived attitudes. The element of "conation" is therefore missing from Bem's configuration of attitudes. Day (1972) describes the following Bem's "nonsyllogism":

> *Cigarettes taste terrible, cause cancer, make me cough, and offend others [cognitive, evaluative beliefs]. I dislike tastes, cancer, coughing, and offending others. But I still like cigarettes [affective responses].*

According to Bem:

> *"emotional, behavioural and social influences can also play important roles, and cognitive 'reasoning' of the type represented in the syllogism may be absent altogether".*

In opposition to the above, the Unidimensionalist View of Attitude states that the components of cognition and intentions/behaviour are not part of the attitudes, but they are causal antecedents or causal consequences of an attitude (Fishbein and Ajzen, 1975):

Beliefs →	Attitudes →	Intentions →	Behaviours
(cognition)	(affect)	(conation)	(conation)

Much of current advertising decision making rests on hierarchy of effects models which are based on this cognition → affect → conation flow, as it will be discussed in later Chapters.

CHAPTER 3: MODELS OF ATTITUDE FORMATION AND CHANGE.

3.1. Models of Attitude Formation

- 3.1.1. Multiattribute Attitude Models
- 3.1.2. Applicability of Multiattribute Models to Brand Choice
- 3.1.3. Other Models of Attitude Formation

3.2. Models of Attitude Change

- 3.2.1. Congruity Theory
- 3.2.2. Cognitive Dissonance Theory

3.3. Other Interactions Rules Models

- 3.3.1. Compensatory Interaction Rules
- 3.3.2. Noncompensatory Interaction Rules

3.4. Situational Variables

3. MODELS OF ATTITUDE FORMATION AND CHANGE.

On the basis of the general concepts and definitions described in the previous Chapter, many researchers have proceeded to construct models describing the process of attitude formation and change. Most of such models, first elaborated by Social Psychologists, were subsequently adopted by marketing researchers striving to determine the one and only way in which consumers make their brand choices.

Hansen (1976), Lutz (1981), Calder (1981) and East (1990) provide excellent reviews of the models most relevant to marketing research. This chapter therefore follows their outline.

Hansen (1976) identifies three general components in psychological theories of choice: i) a set of variables, which include "individual predispositions" and/or "situational variables"; ii) rules describing how the variables interact; and iii) a specification of how to measure the variables.

Theories of choice would then vary in terms of both the variables that they apply and the interaction rules that they specify.

In this Chapter first we discuss models concerned with "individual predispositions", and we distinguish between Models of Attitude Formation (Section 3.1.) and Models of Attitude Change (Section 3.2.). Brief notes on Interaction Rules follow (Section 3.3.).

Finally, "Situational variables" will be discussed in Section 3.4., while issues of measurements will be dealt with in Chapter 7.

"Individual predispositions" are further subdivided by Hansen into four categories, according to their degree of generality or of specificity[2]: 1) Personality; 2) General attitudes, values and interests; 3) More specific attitudes, beliefs, images, etc.; 4) Choice specific predispositions, such as preferences, intentions, purchasing probabilities, etc..

The more general variables at 1) and 2) above are the ones more closely related to the characteristics of the individual, thus these should remain more or less stable across different conflict situations, and should guide all choices. However, Hansen's review of the relevant literature exposes that single and multiple personality dimension measurements have not been successfully applied to studies of consumer behaviour. While studies dealing with less general

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[2] General variables are only vaguely related to the specific situation, but are expected to influence the salient cognitive structure in a wide range of situations (e.g. personality traits and basic needs). Special predispositional variables are instead defined as closely related to the specific choice situation and its alternatives (e.g. preferences, expectations and intentions related to the specific situation). A number of variables would then follow in between.

personal characteristics have been more successful in establishing categories of consumers who differ in their behaviour, the explanatory power of these variables alone is usually quite low in predicting specific consumer behaviour.

Therefore, in our review we will deal only with the models concerned with specific attitudes, beliefs, and images (in the current chapter) and with models concerned with choice specific predispositions (in Chapter 6).

Before a full discussion of the various models of attitude formation and change, in Table 3.1. below we give a brief summary and evaluation in terms of their applicability to brand choice situations.

TABLE 3.1.
Attitude Models - An Overview

MODELS OF ATTITUDE FORMATION			MODELS OF ATTITUDE CHANGE	
Model	**Interaction Rule**	**Relevance to Brand Choice**	**Model**	**Relevance to Brand Choice**
Multiattribute Attitude Models Expectancy-Value Theory (Rosenberg, 1960) Theory of Reasoned Action (Fishbein and Ajzen, 1975) Bentler & Speckart Model (1979)	Compensatory, multidimensional, deterministic	Controversial. Also debate on measurement, use, and interpretation issues (see main text). Seem more suitable for *product* sub-groups evaluation.	Congruity Theory (Osgood and Tannenbaum, 1955-1967)	Contribution for the consideration of source effects, but narrow interest and mixed empirical results.
Other Attitude Models Functional Theory (Katz, 1960) Balance Theory (Heider, 1946)		Doubtful applicability to marketing because of difficulties in identifying adequate measures. Balance Theory also has limited scope (one attribute for each object, +1 or -1 valences only).	Dissonance Theory (Festinger, 1957)	Major contribution in orientation, despite weak empirical evidence.

3.1. MODELS OF ATTITUDE FORMATION.

Regardless of the definition of attitudes, and of models of attitude formation or of attitude change, the basic issue of all attitude models is the extent to which attitudes predict behaviour. As we will see, the predictive power of attitudes is still a contentious issue, since there is variation between problem areas.

The most popular models of attitude formations, and the ones which have achieved relatively more predictive power in areas concerning social issues are the so called Multiattribute Attitude Models, which look at attitudes as a multidimensional concept. We illustrate such models below, then we discuss their applicability to brand choice (Sub-section 3.1.2.). Other models of attitude formations are briefly illustrated in Sub-section 3.1.3..

3.1.1. Multiattribute Attitude Models.

The first model of this kind, also called *Expectancy-Value Theory*, was developed by Rosenberg (1960). It can be summarised as follows:

$$Attitude = f(\sum_{i=1}^{n} V_i P_i)$$

where V_i, or Value Importance, is the degree of satisfaction or dissatisfaction provided, and P_i, or Perceived Instrumentality, is the extent to which the value would be blocked or attained by the attitude object in question.

The term of the equation within brackets is an index of the cognitive structure supporting the observed attitude. A change in either the attitude or the cognitive structure would produce inconsistency between the two. Since this inconsistency would be psychologically uncomfortable for the individual, either the attitude or the cognitive structure would be acted upon to restore the equilibrium (i.e. affective-cognitive consistency).

The drawback of Rosenberg's theory is that the values being measured are so general and central to an individual's value-system that they can be used as predictors only for highly involving topics or at product class level rather than at the level of brand selection.

Structurally similar to the Rosenberg's model is the one devised by Fishbein in 1963:

$$Attitude = f(\sum_{i=1}^{n} b_i e_i)$$

where b_i is the strength of the belief or the subjective likelihood that the attitude object possesses the i attribute; e_i is the evaluation of the ith attribute (e.g. good or bad); and n is the number of "salient" attributes of the attitude object. However, while any behaviour change derives from belief change, a belief change does not necessarily result in behaviour change.

As in the Rosenberg's model, the terms of the equations are measured on bipolar scales, and the "salient" attributes are identified through open-ended questions of the kind: "What comes to mind when you think of (the attitude object in question)?".

Rosenberg's and Fishbein's models are therefore structurally fairly similar in their expectancy-value formulations, but their underlying theoretical mechanism, as Lutz remarks, is quite different. Rosenberg bases his theory on the consistency of attitudes and cognitions, while Fishbein relies on behavioural learning, where an attitude is more or less automatically acquired, as one learns about the object itself and forms beliefs about its attributes. The amount of affect transferred from each e_i to the attitude is a function of the belief strength b_i associated with the attribute.

Several years later, Fishbein and Ajzen (1975) substantially reviewed the above to the *Theory of Reasoned Action* extended form[3]:

$$B \approx BI = [\sum_{1}^{i} b_i e_i] w_0 + [\sum_{1}^{j} NB_j MC_j] w_1$$

where, to the Attitude term, is now added a Social Norm term composed by Normative Belief - NB (i.e. what other people think I should do) and the subject's Motivation to Comply - MC to this social pressure. Normative Belief is measured on a bipolar, and Motivation to Comply on a uni-polar scale. w_0 and w_1 are empirically determined weights. The Social Norm term substantially corresponds to the addition of a situational variable.

Another important change, as remarked by East (1990), is the introduction of the concept of *correspondence* between the measures of attitude and behaviour (see Ajzen and Fishbein, 1977). What is measured above by the attitude term of the equation is not the attitude towards the object, but the attitude to behaviour toward that object. The latter, in combination with the Social Norm, predict the subject's specific Behavioural Intent in that particular instance, which will closely approximate his true Behaviour, except for unpredictable external variables (e.g. out of stock situation).

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[3] The extended form was derived from Dulany's Theory of Propositional Control.

The concept of correspondence, East continues, implies the consistency between measures of BI and B along four elements, namely:

(i) the *Action* to which they refer;

(ii) the *Target* towards which the action is directed;

(iii) the *Context* in which the action occurs and

(iv) the *Time* at which the action is performed.

Correspondence among the above four elements (and the first two in particular) would strengthen the attitude-behaviour relation.

Finally, Bentler and Speckart (1979) modified the Fishbein and Ajzen model to include the direct effects of attitudes and previous behaviour on subsequent behaviour, with less mediation by intentions. Fredricks and Dossett (1983) found empirical support to the Bentler-Speckart addition to the Fishbein-Ajzen model, with prior behaviour as a direct causal influence on both subsequent behaviour and behavioural intentions. However, consistent with the original Fishbein-Ajzen model, a significant direct path from attitude to subsequent behaviour was not found.

Although the introduction of previous behaviour into the model is a step in the right direction, the applicability of the Bentler and Speckart model (developed in the context of alcohol and drugs consumption) to brand choice would suffer from many of the same difficulties that will be discussed in the next section.

3.1.2. Applicability of Multiattribute Attitude Models to Brand Choice.

Tuck (1976) presents one of the many examples of application of Fishbein and Ajzen theory to correlating beliefs and attitudes to subsequent behaviour in the context of predicting if new recruits to the Women's Royal Army Corps would leave or stay after the training period. Behavioural Intentions were found to be related to the actual concrete behaviour that followed. Correlation between BI and B increased from 0.68 to 0.86 when Behavioural Intentions were measured closer to the time of the actual behaviour (i.e. at the end rather than at the beginning of the training period). The mean belief strength of all beliefs, all evaluations, all norms, and all motivation to comply measured were also compared to assess their discriminatory power between "leavers" and "stayers". The measures whose score differences were found to be statistically significant were therefore employed to generate an instrument to discriminate between the two groups.

Some researchers, however, have suggested that multi-attribute models

"may perform well because individuals bias their indicated beliefs by their overall attitude, the so-called halo effect. Individuals who favour an alternative tend to rate it high on all desirable attributes, while individuals who dislike the alternative tend to rate it low on all attributes (Beckwith and Lehmann, 1975).

Such halo effects would be particularly strong for the more vague, ambiguous, and less important attributes.

As East (1990) reports, several other general criticisms to the Reasoned Action Theory have been brought forward by researchers along the following lines:

- its uncompromising cognitivism, since external variables (e.g. experience, personality, age, and sex) affect behaviour only indirectly, mediated by the beliefs and other components of Reasoned Action;
- it is sometimes difficult to distinguish between the effect of a given item of information on a person's Attitude and its Subjective Norm, because the two are inter-related;
- users and non-users of an item may have different salient beliefs and this complicates the comparison between the two;
- Motivation to Comply is measured through questions about the general tendency to comply instead of the tendency to comply with respect to the specific actions being investigated;
- the model is more appropriate for significant social issues or, at the most, product class choice than for routine brand choice, where a full evaluation of beliefs might not take place at every purchase.

Although the notion of salient beliefs in the Fishbein configuration has the advantage, over the Rosenberg's theory, of making the attributes more situation-specific, the applicability of the Theory of Reasoned Action to brand evaluation is still controversial, as the great number of papers written on the subject demonstrate. A further problem is the assumption that an alternative will be chosen the more it possesses the salient attributes, whilst for some products (e.g. some foods) too much and too little may be equally bad (Hansen, 1976).

Bass and Talarzyk (1972) remark that the main difficulty in the straightforward application to marketing of attitude models developed in social psychology lies in the fact that researchers in the latter discipline have been concerned with evaluating attitudes of groups of people towards an object, rather than with the study of relative attitudes toward a group of objects, and that such social psychology models had mainly relied on cross-sectional, rather than on individual-level analysis.

Bass and Talarzyk therefore set out to test the power of the Fishbein model to predict individuals' brand preferences. Consumers' beliefs and values for product attributes, measured for individual brands, were found to explain brand preference, although there was a greater chance for successful prediction of the most and least preferred positions than for brands in between[4]. No significant difference was found between predictions for low and for high market share brands.

These results, however, still make us doubt the applicability of the Fishbein model for brands which differ little, as in most product fields. It is likely that the model would yield better results for the selection of a product sub-category (e.g. caffeinated versus decaffeinated coffee), rather than for brand choice (e.g. a specific brand of decaffeinated coffee).

Additionally, Hansen (1976) remarks that multidimensional attitude models are generally good predictors of overall evaluation or attitude, but that their ability to predict behaviour is more varied.

There is also widespread controversy not only over the construction of suitable kinds of measurements for the application of Rosenberg's and Fishbein's models to a marketing environment, but also over the correct use, interpretation and comparison of the models themselves, as the series of papers by Sheth and Talarzyk (1972), Cohen, Fishbein and Ahtola (1972), Sheth (1972), and Talarzyk (1972) illustrate. Their argument finds partial answer in a paper by Bass and Wilkie (1973).

In relation to the different purpose for which the Fishbein and Rosenberg Models were created (see above), Bass (1972) and Bass and Wilkie (1973) confront the issue of the method of analysis to be used in comparing alternative models and measures in social psychology and brand preference studies. They stress that the form of cross-sectional analysis widely used by social psychologists could not be directly employed in brand preference studies, since it does not take within-subject variance under consideration. Probability of correct prediction or average rank correlation would be the appropriate summary statistic in this case, since it avoids having to use information from one subject to predict another's affect.

In an empirical study involving several brands in different product categories, Bass and Wilkie (1973) found that normalised cross-sectional ratings of brand preference yielded regression coefficients comparable to those presented by Cohen, Fishbein, and Ahtola (1972). Consistently with Sheth and Talarzyk (1972) findings, however, importance weights (the evaluative part in the Fishbein model or the value importance in the Rosenberg configuration) were shown not to add significantly to the power of beliefs to predict brand preference. Importance weights did make a

[4] A predicted first choice brand was found to be actually ranked first or second with probabilities varying form 0.75 to 0.90, depending on the product category.

substantial difference only in the evaluation of the relative contribution of each attribute within the attitude structure, if normalised measures were employed (4.9 attributes out of 5 were found to be significant, rather than 3.8 out of 5).

Finally, comparison of accuracy of prediction between individual measures and normalised cross-sectional measures (as in the 1972 study), showed that the former was superior (percentage of correct predictions 53% versus 38%).

More comments on the applicability of the Theory of Reasoned Action to consumer behaviour will be dealt with in Chapter 6 which focuses on Purchase Intentions and its relationship with Buying Behaviour.

Finally Ajzen (1985), modified the original model even further into the *Theory of Planned Behaviour*, where the element of Perceived Control (PC) was added. The term quantifies the degree to which the action is voluntary and incorporates past experience into the model.

East (1991) has remarked that, although "*a substantial increase in the prediction of intention is obtained when Perceived Control is added*", this, strictly speaking, is redundant, because the effect of PC should have already been incorporated by the A_B measure.

3.1.3. Other Models of Attitude Formation.

Other attitude models include *Functional Theory* and a group of theories known under the general term of *Consistency Theories*.

Lutz (1981) notes that *Functional Theory*, developed by Katz (1960), follows a motivational approach, where attitudes exist in order to assist the individual in meeting certain goals or fulfilling underlying needs. According to this theory attitudes can serve four basic functions: Utilitarian, Knowledge, Expressive, Ego-defensive. The understanding of the basic motivations is necessary in order to undertake attitude change. However, as Lutz remarks in his review, different people may have different basic motivations, and different stimuli may lead to different attitudes, making it therefore difficult to utilize this theory for attitude change.

The Utilitarian function, where attitudes are supposed to be used to achieve desirable goals and to avoid undesirable alternatives, would be likely to be the most dominant one for brand attitudes. However, this Theory has never been widely applied in marketing, because of the difficulty in identifying adequate measures of unambiguous attitude functions.

Consistency Theories is the general term for several models, some of attitude formation and change, others purely of attitude change that will be described in the next section. Their common characteristic is the concern with the relationship among various beliefs, attitudes, etc.. The Fishbein-Rosenberg tradition, on the other hand, is more concerned with the relationship between predispositional variables and behaviour. However, Hansen (1976) remarks that the choice of the most attractive alternative under the Fishbein-Rosenberg configuration automatically implies a more consistent cognitive structure than the choice of any other available alternative. Hence the two theories are not very far apart in their underlying connotations.

Lutz (1981) describes *Balance Theory* as one of the first of consistency theories to be developed. It was elaborated by Heider (1946) and derives its name from the basic concept that individuals will try to achieve a "balanced configuration" between cognitive and affective elements concerning: 1) the Person itself, 2) the Attitude Object, and 3) a related Object, Person, Attribute or Consequence.

Each link between the three elements has a +1 or -1 valence: a positive attitude towards the Object will be achieved when the algebraic product of the Person-Related Object link and of the Object-Related link yields a positive Person-Attitude Object link. When the yielded value of such link is -1, a marketer could change the negative attitude towards the object by altering one of the other two signs.

As Lutz (1981) notes, the Theory has two shortcomings: first, the valences can only assume a +1 or -1 value and second, only one related object for each attitude object is possible, despite the fact that brands have usually more than one attribute of importance to consumers.

Because of these shortcomings, Balance Theory has not been widely used in its original form, but researchers have often borrowed Heider's ideas for the development of their conceptual models.

3.2. MODELS OF ATTITUDE CHANGE.

Having outlined the main Theories concerned with Attitude Formation, this section will illustrate those Consistency Theories that deal more specifically with Attitude Change, namely *Congruity* (Sub-section 3.2.1.) and *Cognitive Dissonance* (Sub-section 3.2.2.).

3.2.1. Congruity Theory.

Calder (1981) describes *Congruity Theory* as similar in spirit to Heider's Balance Theory. The Congruity concept was developed by Osgood and Tannenbaum in several stages between 1955 and 1967.

Calder remarks that the Theory includes two basic elements: communication sources and objects of judgement, connected by either an associative or dissociative assertion. A state of congruity exists either when a source (e.g. a Consumer Report) and an object (e.g. Automobile X) with the same numerical evaluation are associated, or when a source and an object with opposite evaluations are dissociated. When incongruity exists, both the source attitude and the object attitude are under pressure to change to achieve a congruent state. However, the pressure undergone by each of them is different and it is equal to the amount that each one would have to change alone to bring congruity.

Tannenbaum, Macaulay and Norris (1966), however, have remarked that Incongruity does not necessarily need to lead to attitude change: a person can deny or distort the association between the source and the object (e.g. "a prestige figure was paid to endorse the product"), or can seek new information, or can alter his attitude only towards the source and not towards the object.

In his review of Congruity Theory Calder comments that research has yielded contrasting results. Osgood and Tannenbaum (1955) found that the equations predicted the direction of attitude change better than the amount of change. Kerrick (1959) is reported by Calder to have discovered that like sign attitudes, when associated, may change to become more extreme than either were separately. Hence, Calder remarks that later research by Tannenbaum (1966, 1968), focused more on the general implications of the theory, rather than its mathematics. For example, attitude change towards an object was found to generalize to a source and to other objects connected to the source as well.

According to Calder (1981), the main contribution of Congruity Theory to consumer behaviour lies in the consideration given to the source effect situation.

3.2.2. Cognitive Dissonance Theory.

Far more relevant than the above as a base for subsequent developments of the consumer behaviour thought is the theory of *Cognitive Dissonance* elaborated by Festinger (1957).

While in general attitude theories do not make a clear distinction between pre-choice and post-choice attitude change (Hansen, 1986), Cognitive Dissonance clearly focuses on the latter.

Dissonance is defined by Festinger as: "*the existence of non-fitting relations among two relevant cognitive elements*" (i.e. one element does not follow from the other). The cognitive elements refer to any knowledge, opinion or belief about the environment, about oneself or one's behaviour. The amount of the dissonance (or vice-versa of the consonance) increases as the importance or value of the elements increases in relation to the behaviour concerned.

Cognitive Dissonance induces psychological discomfort and provokes a set of activities aimed at dissonance reduction.

Possible activities include the change of the behavioural cognitive element. This change, however, may be difficult to achieve or may involve loss, since the present behaviour might be otherwise satisfactory. Moreover, the change may simply not be possible, because of fear or due to the irrevocable nature of certain actions.

An alternative would be therefore to change the environmental cognitive elements. This might be even more difficult than the above, since when reality is a social one, i.e. when it is established by agreement with other people, it involves convincing people to support the new cognition.

Another source of resistance to change for both elements is the fact that each element is in relationship with a number of other elements, which might be consonant.

An alternate action to the above involves the addition of new cognitive elements apt to reduce the importance of the existing dissonance. In many situations this might be the only possible course of action.

Festinger notes that a certain degree of post-decision dissonance is endemic to all decision processes, and that its magnitude will depend upon three main factors:

1. the importance of the decision;
2. the relative attractiveness of the unchosen alternative to the chosen one;
3. the degree of overlap of cognitive elements corresponding to the alternatives.

The pressure to reduce post-decision dissonance will imply the attempt to increase the relative attractiveness of the chosen alternative, to decrease the appeal of the unchosen one or to

establish cognitive overlap. This process will include more or less voluntarily exposing oneself to new cognitions consistent with the existing choice and avoiding all dissonant ones (or misperceiving and denying the validity of the latter). Additional information will have more impact if the person is not expecting the source of information to produce a dissonant cognition and hence he/she is not alert to avoid the dissonance.

Finally, the social group can at the same time be a major source of cognitive dissonance and a major vehicle for eliminating and reducing the dissonance which might exist. For example, the number of people disagreeing, their relevance in the social group, the cohesiveness within the group, and the extent of disagreement will all be concurring elements to determine the magnitude of the dissonance. Reduction of dissonance in this context will be possible either by:

1. changing own's opinion;
2. influencing the disagreeing persons to change their opinion;
3. making other persons not comparable to oneself.

The concept that dissonance may involve change in the cognitive elements, rather than in the behaviour itself, brought about a crucial shift in orientations by a large part of subsequent research in consumer behaviour: changes in attitudes were not any longer seen as necessarily causing changes in behaviour. Behaviour itself, its consequences and its reinforcing influence on attitudes began to be considered by researchers not only as the mere consequence of attitudes, but as a powerful influence on the person's way of perceiving his/her motivations and feelings.

Although the studies applying the dissonance theory to consumer behaviour have generally failed to provide conclusive and definite evidence, Cummings and Venkatesan (1976) remark that "*the evidence in favor of the applicability of dissonance theory is more substantial than the evidence against*". Moreover, at least with respect to attitude change, they believe that "*there is no single explanation - other than cognitive dissonance theory - that can account fully for the results of these studies*".

The impact of this Theory on the theoretical development of Consumer Behaviour will become clearer in the following Chapters, especially when reviewing the literature on the impact of advertising.

3.3. INTERACTION RULES

Attitude models also vary in terms of the different ways variables interact to determine choice. Hansen (1976) reviews alternative interaction rules, and distinguishes between *compensatory* (Sub-section 3.3.1.) and *noncompensatory* (Sub-section 3.3.2.) models. These are briefly summarized below.

3.3.1. Compensatory Interaction Rules.

Compensatory interaction rules imply that the properties of the alternative choice in one evaluative dimension might compensate for the properties that the alternative does not possess on another evaluative dimension. When more than one evaluative dimension is involved, a weighting calculation is carried out.

Hansen further distinguishes between multidimensional and unidimensional models and between deterministic and probabilistic models. The majority of models, as the Expectancy-Value and the Extended Fishbein model reviewed in the previous sections, are of the deterministic (i.e. they include "causes") and multidimensional kind (i.e. choice is made after evaluation of a variety of dimensions).

On the contrary, in unidimensional models a choice between alternatives is made rapidly, based on a single cue, and in a highly routinized manner. These models have not been developed very much.

Finally, in probabilistic models either the determination of which variables enter the evaluation or the value with which they enter is probabilistic. In either case, the concern is the distribution of choices in a given time period, rather than the single choice.

In the economics tradition of consumer behaviour the prominent examples of this kind are the model by Lancaster reviewed in Chapter 2, and the Subjective Expected Utility (SEU) model, where the Utility that an individual expects from a certain choice alternative is multiplied by the probability that the alternative actually possesses the attribute in question. As discussed in Chapter 2, the main problems with these models is that they require a certain degree of transitivity in the preferences people have, and they assume very extensive cognitive activity on the part of the decision maker. Furthermore, they entirely neglect any sort of situational influence.

Probabilistic models of consumer behaviour, have, however, been successfully developed in the marketing tradition, as we will discuss in Chapter 5.

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3.3.2. Noncompensatory Interaction Rules.

In noncompensatory models alternatives are chosen based on satisfaction along all or some selected dimensions. If the alternative is not satisfactory along one selected dimension, other even highly satisfactory dimensions do not help. They include dominance models, conjunctive and disjunctive models, and lexicographic models.

In dominance models a set of alternatives is evaluated along several dimensions. Alternatives are deleted if other alternatives are superior in all dimensions. According to Hansen this method might be useful only early in the choice process.

The conjunctive model implies that an alternative is preferred only if it is sufficiently good on all attribute dimensions. In the disjunctive model only some attributes are considered, and the alternative must be satisfactory on one or more out of several attribute dimensions.

Finally, in the lexicographic semi-order choice models all alternatives are first compared along the most important evaluative dimension. Then those alternatives not satisfactory in accordance with that criterion are deleted. If no choice is made, a second dimension is introduced and the process is repeated with the remaining alternatives, until only one acceptable alternative is left.

As one can imagine even from this very brief description, noncompensatory rules have gained little attention and systematic evidence among consumer researchers, also because the superiority of a dimension is highly dependent upon the context.

3.4. SITUATIONAL VARIABLES

Hansen (1976) also reviewed the research dealing with the situation in which choices are made. We will summarize the main findings only very briefly.

Situational variables are classified by Hansen into specific and general aspect, and into actual and perceived, for a total of four distinct categories.

Actual, specific stimuli include the intensity of light and colour, the spatial properties of places (e.g. the store), or the behaviour settings (e.g. in front of the TV). Hansen reports that a recurring finding of research here "*is that the exposure situation may greatly impact the influence of the exposure*". Also the way the information is presented and the involvement with the message seem to have an impact on the process through which information is received and absorbed.

Perceptual, specific variables on the other hand are concerned with what is being *perceived* of the environment. Research in this area has frequently studied the effect of source perception, and has usually attributed importance to the credibility and to the expertise of the source. Hansen remarks the similarity between perceptual, specific variables and the salient predispositional variables that we discussed in previous sections. The role of the former, according to Hansen, would be to determine which predisposition become salient and thereby influence the choice.

General, actual stimuli include the amount of environmental stimulation, its impact on the nature of the cognitive processes, and on the amount of conflict aroused. The relationship is generally supposed to assume an inverted U-shaped form, with high or low amounts of environmental stimulation provoking little conflict, or a selective reduction of the complexity of the choice situation (e.g. when the number of brands to choose from is too great). Intermediate amounts of stimulation, however, would give rise to more extensive conflict.

Finally, aroused conflict, or simply arousal, as a measure of impact of the environment is the most fundamental concept regarding general perceptual variables. Research in this area has mainly dealt with the effect of perceived risk and involvement, but according to Hansen the conclusions of different studies have mainly been confusing.

The main point we would like to make here about the study of situational variables is that their interaction with predispositional variables has very rarely been considered, although, as Hansen remarks, it may be possible for consumers to apply different choice principles depending on the conflict situation and the nature of the problem.

The lack of consideration by many consumer researchers in the cognitive tradition for environmental variables is one of the main motivations behind the development of the Behavioural Perspective Model (Foxall 1990, 1992a, 1992b, 1995), which will be reviewed in Chapter 5.

CHAPTER 4: INFORMATION PROCESSING

4.1. Attribution Theory

4.1.1. Self-Perception Theory

4.1.2. Person-Perception Theory

4.1.3. Object-Perception Theory

4.2. Exposure and Familiarity

4.3. Natural Exposure and the Theory of Popularity

4. INFORMATION PROCESSING.

The Theory of Cognitive Dissonance described in Section 3.2. stresses the importance of previous experience as an information source in particular.

As Scott (1981) notes, although previous Consumer Behaviour researchers had sometimes accounted for a feedback loop from behaviour to cognitive variables, empirical research had often controlled for past experience by considering only new or fictitious brands. Similarly, research using Markov, linear learning and stochastic models which had considered previous choice (e.g. Bass, 1974), had not provided an explanation for its effect.

A major contribution towards the understanding of the influence of past behaviour on attitudes is given by Bem who, from 1967 onwards, elaborated the so-called *Self-Perception Theory* (see Sub-section 4.1.1).

Self-Perception is part of a broader theoretical orientation known as Attribution Theory which also includes models whose focus of perception is the Person or the Object, rather than the Self. These are Heider's (1958) "*Naïve Psychologist*", Jones and Davis' (1965) "*Correspondence of Inference*", and Kelley's (1967; 1971; 1972; 1973) "*Covariance and Configuration Models*" (see Sub-sections 4.1.2. and 4.1.3.).

Finally, in this Chapter we will consider the effects of "Mere Exposure" and "Natural Exposure" to information, as studied by Zajonc (1968) and McPhee (1963).

An initial overview of "information processing" theories is given in Table 4.1. below.

TABLE 4.1.
Information Processing Theories - An Overview

ATTRIBUTION THEORIES		EXPOSURE THEORIES	
Theory	**Relevance to Brand Choice**	**Theory**	**Relevance to Brand Choice**
Self-Perception (Bem, 1967 & 1968)	Shift of emphasis from Attitudes → Behaviour to Behaviour/Experience → Post-hoc Evaluation. Potentially very relevant in explaining empirical evidence linking attitudinal and behavioural responses (see Chapter 8).	Mere Exposure (Zajonc, 1968)	Concept that mere exposure and repetition causes liking very relevant to learning without involvement theories of advertising and "choice by recognition" on store shelf.
Person-Perception (Heider, 1958; Jones and Davis, 1965)	Not very suitable to routine brand choice evaluation. More direct applicability to satisfaction/ dissatisfaction analysis.	Natural Exposure (McPhee, 1963)	Widespread empirical evidence of applicability to both buying behaviour (see Chapter 5) and attitudinal responses (see Chapters 6, 8 and 9).
Object-Perception (Kelley 1967-1973)	Not clear rules for selection of Covariance vs. Configuration approach. More direct applicability to satisfaction/ dissatisfaction analysis.		

4.1. ATTRIBUTION THEORY.

Kelley (1973) defines Attribution Theory as "*a theory about how people make causal explanations*". The theory offers a description of the information people use in making causal inferences and how they use this knowledge.

Its main concern is with the process by which attributions are derived from information input, and not with the consequences of the attribution. However, it can be extended to encompass its behavioural consequences, which make the attribution process relevant to consumer decision making.

Our analysis of Attribution Theory below follows the outline of Mizerski, Golden and Kernan (1979) excellent review.

4.1.1. Self-Perception Theory.

Once again, in Bem's (1968) view

> *"an attitude is an individual's self-description of his affinities for and aversions to some identifiable aspect of his environment"*

and, in fact, in most of the literature, attitudes are measured through the verbal description of internal "affective", self-descriptive responses.

Attitudes as self-descriptions are partially based on the individual's observation of his internal "affective" responses and also on his beliefs or "cognitive" responses. In Bem's view individuals would come to learn their affective responses and beliefs by attributing them to past behaviour ("I must like this comedian because I am always laughing at him").

Individuals would also look for the presence of external causes motivating their behaviour. Mizerski, Golden and Kernan (1979) remark that Bem borrows from Skinner (1957) the concepts of "tact" and "mand". A "tact" is defined by Skinner as "*a descriptive statement or a verbal response that is under the discriminative control of some portion of the [personal] environment*". When no plausible external causes are present, the person's own motivations and positive beliefs are tacts of stimuli arising from himself and his behaviour.

On the other hand, when the verbal responses are under the control of some kind of external pressure (i.e. a "mand"), the individual will attribute his/her behaviour to this factor and will "discount" the causal role of internal motivation. For example, Bem (1967) showed that subjects who had received a substantial monetary incentive ($20) to fulfil a simple task attributed

their behaviour to the incentive. On the other hand, the subjects who had received only $1, attributed their behaviour to internal causes (i.e. enjoying the task).

This re-evaluation of alternatives following choice, and the self-judgements made by the individual about his own behaviour in the light of contextual constraint could serve as an auxiliary explanation of Festinger's dissonance theory which sees a subject enhancing his ratings of the chosen alternative and lowering his ratings of the rejected alternatives.

Furthermore, Bem (1967) showed that outside observers would be likely to express judgements on the underlying motivations for action in a matter consistent with those of the subjects involved. Bem explains this result with the concept of "interpersonal model of self-perception": since the individual has learned to describe his internal states through the training that his social community has given him to describe stimuli, his own description and the one that an outside observer would attribute to him are often functionally equivalent, for they are both partial inferences from the same evidence.

From these and other studies Bem concludes that attitudes function as the dependent variable in the attitude-behaviour link through the mechanism of description:

> *"The functional relation between the antecedent behaviour and the subsequent attitude is the relation between an event and an individual's description of that event".*

The Self-perception approach has been adopted by several studies focusing specifically on consumer behaviour. For example, Dodson, Tybout, and Sternthal (1978) showed that promotions involving both money incentives and a limited effort by the consumer had a negative impact on the attitude towards re-purchase of the brand: consumers attributed the purchase under deal-condition to the deal and not to a positive attitude towards the brand.

Scott (1981) reports the finding that characteristics of a source of communication, and its credibility in particular, can operate as a "discounting cue". In particular it would appear that a behaviour attributed to a highly credible source would result in a lower likelihood of repeat-behaviour than a behaviour induced by a low-credibility source. However, even when a discounting cue is present in the right form, individuals must have both the ability and the motivation to engage in this kind of causal analysis.

External information is postulated by Scott as the motivation, under some conditions, to conduct a causal analysis of past behaviour. In particular, Scott argues that

> *"individuals will be motivated to perform causal analysis if the external information is received after an initial small behaviour such as the decision to buy a product but before attitudes are consolidated through clear experience with the product. External information should not result in causal analysis, however, if it is received after experience with the product".*

On the other hand, the uncertainty caused by information in the absence of clear experiential evidence would motivate the analysis.

This is consistent with the identification by Bem (1972) of uncertainty as one factor which enhances the probability of further information search and causal analysis.

If the above is proven true, it could have relevance to the planning and development by marketers of forms of incentives directed to consumers not likely to interpret them as discounting cues.

4.1.2. Person-Perception Theory.

Mizerski, Golden and Kernan (1979) remark that Heider's (1958) "*Naïve Psychologist*" and Jones and Davis' (1965) "*Correspondence of Inference*" put the main focus of perception on the Person, i.e. on how individuals understand and attempt to validate their perception of others.

The "Naïve Psychologist" idea stems from the concept that individuals do behave as "Naïve Psychologists" in trying to understand the behaviour of other people. Through a rationalization process they would try to distinguish among degrees of personal responsibility for the action under consideration, in order to identify if either a personal or an environmental force was the cause of the behaviour. One could infer rather more from an action driven by personal force than by the environment.

On the other hand Mizerski, Golden and Kernan describe "Correspondence of Inference" as concerned more with the effects of action than with the actions themselves. Attributions would be made through three basic criteria used personally or for obtaining information from others about the actions:

- *Choice and Effects*: individuals have choice among actions (or inaction);
- *Commonality*: only effects unique to specific actions ("non common") are useful for inferring personal, as opposed to environmental, causality;
- *Desirability*: the more undesirable the action or the effects of the action, the more readily and more confidently causality can be inferred.

A correspondence of inference will take place every time an observer (e.g. a potential car buyer) draws some conclusion from the behaviour of an actor (e.g. a salesman). Only the non-common effects, those unique to each course of action, are used to infer the causes of the chosen behaviour. If for, example, the potential car buyer observes the salesman as spending time and

effort in recommending a cheaper model, the observer's causal inference will be based not on the common effect of making a sale (either of the cheaper or of the more expensive model), but on the non-common (to both alternatives) and seemingly undesirable (for the salesman) effects of making a lower commission and spending a long time on the sale. The salesman will be perceived as honest, helpful, and trustworthy.

Only certain combinations of non-common effects and assumed desirability for the action will result in high correspondence of inference, whereas a high number of non-common effects will make it difficult to discriminate between the different competing explanations for the behaviour (e.g. in the example, was the motivation of the salesman his honesty, his altruism, or his credibility?).

Finally, Mizerski, Golden and Kernan note that the concepts of non-common and desirable effects form the basis for what Jones and Davis call the "action-attribute paradigm", according to which the actor must have knowledge of the effects that will be produced from his action, as well as the ability and intention to perform the action (cfr. with Heider's concept of actor's knowledge and ability).

4.1.3. Object-Perception Theory.

Mizerski, Golden and Kernan (1979) also summarize Kelley's (1967;1971;1972;1973) view of Attribution Theory, which he designed with many reciprocal interactive influences with Bem. Kelley's Attribution Theory is within an analysis of variance framework and he distinguishes between information collected over time from multiple observations (which entail a "*Covariation Principle of Causal Attribution*") and information deriving from a single observation (when "*Configuration Principles or Single Inference Rules*" are evoked).

Kelley's Covariance Model is described by Mizerski, Golden and Kernan as based on the concept that "*the effect is attributed to the condition that is present when the effect is present, and absent when the effect is absent*".

Kelley identifies three dimensions of potential causal inference:

a) the stimulus object, on the entity dimension;

b) the observer(s) of the effects, placed along the person's dimension;

c) the context, in terms of time and/or modality in which an effect occurs.

These dimensions appear to exhaust all the potential causes for an effect and form what has become known as "*Kelley cube*".

The consumer/observer then uses four criteria to ascertain whether the effect derives from the entity under scrutiny rather than from some environmental cause:

1. *Distinctiveness* - the effect is attributed to the entity only when it occurs exclusively in connection with the entity occurrence;
2. *Consistency over time* - the individual's reaction must be more or less the same every time the entity is present;
3. *Consistency over modality* - the reaction must be consistent, whatever the interaction with the entity;
4. *Consensus* - all observers perceive the actions or their effects in the same way.

Mizerski, Golden and Kernan also quote Kelley's (1967) proposition that:

> *"To the degree that a person's attributions fulfil these criteria, he feels confident that he has a true picture of his external world. He makes judgements quickly and with subjective confidence... When his attributions do not satisfy the criteria, he is uncertain in his view and hesitant in action".*

For all the circumstances when the information available is limited because of lack of time or interest for multiple observations, Kelley devised his Principle of Configuration[5], based on the concept of Causal Schema. A Causal Schema is formed whenever similar effects have been observed in prior situations, and expectancies of the potential relevant causes and of how they might relate to the effect to be attributed are developed. The repertoire of Causal Schemata formed this way will constitute a framework for performing fast and economical attributional analysis.

The Configuration Principle is based on two attribution principles: a) Multiple Sufficient and b) Compensatory Schemata:

a) The Multiple Sufficient or "Discounting Principle" is present when an observed effect could have a number of plausible causes and one is discounted by the observer because he believes that other causes are also present (although he is unable to make a very strong or confident attribution to any of them). This is what happened, in the car salesman example above, when the buyer tried to infer the true motivation for the salesman negative comments.

b) The Compensatory Schemata is present when the presence of nonstimulus cause(s), such as constraints, costs, sacrifices, or risks involved in taking an action, serves to strengthen the impression that a stimulus cause is present and it is a potent force (as in the example above).

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[5] The crucial factor in the difference between the Covariance and the Configuration Models is whether the consistency dimension (time and/or modality) is involved.

The causal schemata framework seems to be apt to understanding and predicting Consumer Behaviour, through the prediction of the Configuration an individual will evoke.

Mizerski, Golden and Kernan remark that Kelley's contribution to Attribution Theory lies in having expanded the level of analysis beyond the personal level. Moreover, since Attribution theory is so wide-ranging, it might, in their view, also be a vehicle for reconciling the opposite views of "Behaviouralists" and "Cognitivists".

Their main concern about the application of Attribution Theory to Consumer Behaviour is, first of all, the potential difficulty in choosing the appropriate attributional focus (i.e. object, person, or self-perception), since the Theory does not provide any clear rules of selection. The same applies for the choice of a Covariance or a Configuration approach. The task is particularly difficult since a combination of perceptual situations may be best for some consumer situations. Secondly, in the application of Attribution Theory to Consumer Behaviour, the involvement with the product, the risk inherent in the purchase situation and other potential variables might create differences in attribution for different product categories.

Most Consumer Behaviour studies which have specifically investigated Attribution Theory have been in the product dissatisfaction area and their detailed account would go beyond the scope of the present review. Furthermore, since Attribution Theory focuses on the process by which the environment is interpreted and not what is done behaviourally with the attribution, the theory has not been directly related to consumer decision making. However, Attribution Theory has been employed more or less explicitly by some Consumer Behaviour researchers as a basis for the prediction or the post-hoc explanation of their findings. A couple of examples were given in Sub-section 4.1.1. regarding the self-perception attribution. Other examples related to person and object attribution will be discussed in following chapters, especially when reviewing the effect of advertising on brand choice.

Finally, Mizerski, Golden and Kernan remark that the attribution process is often unconscious[6], as in the case of habitual purchasing, where attributions may be just learned from similar situations. This leads us to the issue of Exposure and Familiarity.

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[6] Attempts to forcibly make a conscious attribution may superimpose a non-existent structure.

4.2. EXPOSURE AND FAMILIARITY.

Zajonc's (1968) paper on "Attitudinal Effects of Mere Exposure", although not written specifically with Consumer Behaviour in mind, has been highly influencial for many researchers seeking to establish a relationship between attitudes and past experience.

Zajonc's hypothesis is that "*mere repeated exposure of the individual to a stimulus object enhances his attitude towards it*". By Mere Exposure he means "*a condition which just makes the given stimulus accessible to the individual's perception*". The reference to Mere Exposure is what makes Zajonc's formulation unique, since previous studies had dealt with more complex phenomena such as social contact and interaction.

Zajonc draws empirical support for his Theory from experiments on word frequencies, where he found that more frequently used words are the ones best liked. Through experimental manipulations he set out to prove the causality of frequency on attitude, showing that the affective connotation of a word improved with its repeated usage.

Less convincing is his proof that frequency of use enhances the positive meaning of words, where frequently used words that did not originally have any semantic positive meaning would acquire a positive tone through frequent usage. In this respect he sees the Word-Frequency/Word-Value relationship as a special case of the Exposure/Attitude relationship. In this connection Jakobovits (1968) observed that this supposedly value enhancement effect could be attributed to what Osgood (1964) had defined as the "Polyanna hypothesis", i.e. the tendency by humans to structure their world in a positive way. Jakobovits also remarked that Zajonc did not establish what would happen to initially good stimuli, since all his experimental stimuli initially received "bad" ratings.

Furthermore Maddi (1968) suggested the possibility of "*an overall nonmonotonic relationship with great as well as meager exposure lowering positive affect*". In particular, "*Zajonc's use of up to 25 exposures of some stimuli may not have been sufficient to produce the level of boredom that would result in a downturn of the curve*". Finally, Maddi proposed that stimulus meaning and certain individual difference variables, such as the personal need for novelty, might interact with exposure in determining affect.

In a more recent paper Zajonc and Markus (1982), tackled the issue of "Affective and Cognitive Factors in Preferences".

Both cognitive and affective components are recognised as generally playing a role in a variety of combination, but preferences are seen as being primarily affectively based and are conceptualised as the subjective counterparts of object utilities and values.

In their view cognitions are often only a sort of justification for choice and, while preferences can be changed with experience, the properties of the object concerned remain constant: object properties do not therefore appear to contain the complete information on object utilities.

A proof of the superiority of affection over cognition as attitudes' components and of the effect of Mere Exposure on preference formation is given by experiments where stimuli subjectively not recognised as seen before still are liked more than objectively new ones. As an example Zajonc and Markus quote an experiment undertaken by Littman and Manning (1954) where subjects were asked to judge camouflaged cigarettes: respondents thought their preferred brand tasted better, even though they could not tell which one it was. Zajonc and Markus attribute this phenomenon to a kind of recognition memory, although they admit that some form of covert cognitive process might have been present.

However, Zajonc and Markus recognize the possibility that significant differences in preferences and attitudes might exist depending on their basis of origin. Preferences formed in the early stages of human development would be formed primarily on affective basis (e.g. fancy for a certain kind of food), while some preferences formed later in life (e.g. for certain makes of PCs or food processors) would be based on complex cognitive structures. If attitude change is to be undertaken successfully, it is necessary to recognize its basis of formation, since different methods might be required for affect-based versus cognitive-based preferences.

Nonetheless, they believe it is the affective element that ultimately must be altered, through a process often similar to the transference process in psychotherapy. Even when preferences have been built up from cognition, its affect may become partly or fully autonomous and independent of the cognitive elements that were originally its basis, as, for example, in the case of an old friend.

In conclusion preferences are viewed by Zajonc and Markus as behavioural tendencies, which sometimes become autonomous, somatic representations and can be changed only by reaching the motor system of the organism, i.e. mainly through affective, rather than cognitive means.

This notion of the supremacy of affection over cognition fits in very well with what was presented earlier as the rejection by Consumer Behaviour scholars of the concept of "rational economic man" and Bem's "nonsyllogism".

Zajonc's papers, and the 1968 one in particular, originated a widespread debate on the subject among researchers, who extensively reviewed and enlarged the original hypothesis.

For example Harrison (1969) applied Zajonc's theory of exposure and liking to experiments employing names, social groups and public figures as stimuli. Results were generally supportive of a strong relationship between familiarity, or exposure, and liking, but the relationship between familiarity, liking and curiosity was not clear and an inverse relationship was suggested.

About ten years later Harrison (1977) reviewed the concept of "overexposure", which Zajonc (1968) had denied, by attributing the successively smaller increments in liking that followed repeated exposure to variables other than exposure itself.

Harrison expanded upon Zajonc's theory by examining the influence of other variables on the variance of exposure effects. Stimulus variables (such as initial familiarity, initial meaning, recognizability and complexity), presentation variables (e.g. context, and presentation sequence), and measurement variables (scales, attentional measures, immediate and delayed ratings) were in various ways associated with differing degrees of exposure effects.

Harrison's conclusion was that the best explanation for the phenomenon of mere exposure seemed to lie in the loss of disruptive ability of new stimuli with repetition.

Sluckin, Hargeaves and Colman (1982) linked the shape of the function between liking and familiarity to both the complexity of the stimulus and the freedom of choice. Repetition of a complex stimulus would increase liking whereas repetition of a simple one would decrease it. Moreover, there would be an approximately straight-line relationship between familiarity and favourability for stimuli where frequency of exposure depends largely on voluntary choice (the so-called Preference-Feedback hypothesis, which would be responsible for fluctuations in popularity and vogues). On the other hand, where the frequency of exposure is virtually beyond voluntary control, the curve would assume an inverted U shape. An experiment involving first and last names seemed to prove this theory.

Finally, the difficulties involved in determining the causes of affective responses is exemplified by the debate between Anand, Holbrook and Stephens (1988), Heath (1990), and Anand and Holbrook (1990) over the interpretation of the results of an experiment carried out by the former, in terms of the superiority of the cognitive-affective model (see Fishbein and Ajzen, 1975) over the independence hypothesis (Zajonc).

In summary, a meta-analysis by Bornstein (1989) of the studies on mere exposure effects published in the 20 years following Zajonc's (1968) seminal monograph concluded that: i) the exposure effect is enhanced by the use of brief exposure durations (see also Bornstein and d'Agostino, 1992); ii) the frequency-affect curve reaches an apex after a fairly small number of exposures (up to 10 or 20); iii) a period of delay between stimulus exposures and ratings results in a stronger exposure effect; and iv) stimulus recognition is not a prerequisite for the production

of exposure effects (see also Bornstein and d'Agostino, 1992). On the last point a recent study by Janiszewski (1993) also found that unintentional mere exposure to a brand name or product package can encourage a consumer to have a more favourable attitude toward the brand, even when the consumer cannot recollect the initial exposure.

Consistent with the Theory of Mere Exposure are several studies on the effectiveness of advertising. In particular, the concept of learning without involvement (Krugman, 1965), the effect of repetition of the message on consumers' perceptions and learning (Krugman, 1967; Hawkins and Hoch, 1992) come to mind. These studies will be reviewed in Chapter 6.

McPhee's (1963) theory concerning a related kind of exposure effects is reviewed in the following section.

4.3. NATURAL EXPOSURE AND THE THEORY OF POPULARITY.

A few years before Zajonc, the sociologist McPhee (1963) had dealt with the problems of exposure and popularity in his book: "Formal Theories of Mass Behavior".

According to McPhee, one of the problems, in a real life situation as opposed to an experimental one, is the question if exposure to a stimulus will indeed occur. He defines this issue as the problem of "natural exposure", as distinct from the enforced exposure of the laboratory or school-room setting.

The outcome of the question is determined by the variance in two elements: the various persons in different circumstances and their degree of receptiveness, and the diverse stimulus items having varying degrees of access.

The two elements are included in a stochastic model based on the probabilities that the *i*th alternative will be learned on any one exposure and after all exposures at the end of the period, and the Poisson probability of the individual to be exposed. McPhee notes that two Poisson processes are relevant here: the inequality of exposure that results from equal opportunities, and the fact that, increasing the amount of visibility in an effort to reduce inequality by reaching everyone, the disparity in exposure between people increases.

From the above, McPhee draws a so-called Theory of Popularity, based on four concepts: a) "*Natural Weighting*"; b) "*Natural Monopoly*"; c) a naturally-occurring form of "*Double Jeopardy*"; and d) a "*Natural Distribution*" found in popularity data[7].

a) "*Natural Weighting*". According to McPhee, it is the *relative*, rather than the absolute popularity which matters, in the sense that, for example, a vote given to everybody is equivalent to non voting, whereas the vote given to only a few alternatives is important since the increment is not given to everyone. The irony of this natural happening, McPhee continues, is that the less people know, the more weight they give to each item they do know or choose. On the contrary, the more involved people, who know more alternatives, dilute their vote among them.

b) "*Natural Monopoly*". This phenomenon is characterised by the fact that the most popular items in a group not only are known by the people who know most items, but also by a disproportionate number of the people who know only a few (because, of the few they know, the most popular are the most likely to be known by them). Popular items therefore have a

[7] The word "natural" is used by McPhee to indicate that, without external intervention by humans, the occurrences described will happen.

"monopoly" of these ill-informed people. This monopoly-like tendency is, according to McPhee, due to two factors: the motivation to seek out unobvious alternatives, and chance events which occur even within an absolutely homogenous population.

c) "*Double Jeopardy*". This derives from the fact that the lesser-known alternative not only is unknown to many people, who therefore cannot choose it, but also the few people who do know it select it less often and like it to a lesser extent. McPhee's explanation for this is that:

> "*the lesser known alternative is known to people who know too many competitive alternatives. It is being judged by people who have a lot to choose from, whereas the favored or 'obvious' alternative is the one that becomes known to the kind of people who, in making their choices, know little else to choose from*".

McPhee's typical example to illustrate the phenomenon of Double Jeopardy is of two restaurants (the only two in town) which don't differ in anything else but their popularity: one is known by many more people than the other. The people who know the less popular restaurant almost certainly will know also the well known one, since everybody does: when asked to indicate which restaurant they prefer some will say the lesser known, but many will say the popular one (since it is the most popular!). However, the less-informed people, who know only of the well known restaurant, will have no other choice.

Hence, the phenomena described by McPhee are the result of a statistical selection procedure that *has* to happen every time two or more items differ in their popularity (or their "*sizes*"), but are otherwise of "equal merit".

In practice, the "equal merit" assumption is much less restrictive than it might sound, and McPhee's Double Jeopardy phenomenon is found to occur with impressive regularity both in Buying Behaviour and in Attitude research (see Chapters 5 and 6). For example Shuchman (1968) describes the phenomenon as one - if not the only one - law of Marketing he could think of at the time.

This is at the basis of the conceptual "statistical" or size effect approach that was introduced at the beginning of this work and that we wish to corroborate in our own research.

d) "*Natural Distribution*". The distribution that McPhee finds occurring "naturally" in human data is therefore an exponential distribution in the ratios between choices of successive alternatives down a ranking of such alternatives by popularity. Each ratio tends to be a constant fraction of the previous one. The same distribution shape is obtained as the product of the two linear

distributions of renown and liking. This result favours the top alternatives, since the frequencies of choice of successively less popular alternatives fall off, not linearly, but rapidly at first.

From this, McPhee derives that linear increments of publicity and advertising, or renown, bring exponential increments in choices, or popularity. He also sees a connection between this exponential shape in popularity data and the j-shaped distribution found, for example, in the number of words used with a certain frequency. From the fact that such phenomena like the frequency of words are relatively permanent, he derives that today's popularity can affect future one. When there is permanency in the alternatives, a j distribution is then possible, with a feedback system from choices to renown. McPhee then concludes that this j-shaped feedback model appears to lead to still more overweighing of the marginal person and more than exponential-like returns from sustained publicity.

A common thread links Bem's Self-Perception, Zajonc's Mere Exposure and McPhee's Natural Exposure Theories.

Not only repetitive *action* would induce a person to justify his behaviour by forming positive attitudes (Bem), but even repetitive *exposure* to a stimulus would enhance affective responses and liking for the object (Zajonc) to such an extent that linear increments of renown would bring exponential increments in choices or popularity (McPhee).

Bem's Self-Perception, Zajonc's Mere Exposure and McPhee's Natural Exposure Theories are consistent with and give theoretical backing to widespread empirical evidence of a direct relationship between the size of a brand (i.e. its "exposure") and both its purchase frequency (see Chapter 5) and the level of attitudinal responses (see Chapter 6 and our own results in Chapters 8 to 11).

Chapter 5: MODELS OF BUYING AND OF CONSUMER BEHAVIOUR

5.1. Models of Buying Behaviour

5.1.1. Models of Stationarity

5.1.2. Models of Change

5.2. Models of Consumer Behaviour

5.2.1. The Howard-Sheth Model

5.2.2. The AIDA Model

5.2.3. The ATR Model

5.2.4. The Behavioural Perspective Model

5. MODELS OF BUYING AND OF CONSUMER BEHAVIOUR.

Lilien et al. (1992) go along with the cognitive consumer behaviour framework that the consumer goes through up to five steps in the purchase cycle: need arousal, information search, evaluation, purchase and post-purchase feelings.

Under these premises, they position models and theories as the ones summarized in Chapters 3 and 4 as corresponding to the information search, evaluation, and post-purchase feelings steps.

On the other hand, *buying behaviour models*, either of purchase incidence or of brand choice, would best describe the need arousal and the purchase stages.

More generally, the broad theories reviewed so far regarding different approaches to attitude formation and change and information processing do not describe behaviour directly, but are the theoretical background and the basis for specific models not only of *buying*, but also of *consumer behaviour*, since they also differ in terms of the emphasis attributed either to previous experience and behaviour or to a conscious pre-purchase search and evaluation process.

Section 5.1. here is concerned with models of buying behaviour in a narrow sense, meaning those theories specifically concerned either with consumers' purchase frequencies or with brand choice. While we do not aim to give a full account of such models here (see Massy et al., 1970; or Lilien et al., 1992 for a review), an understanding of these models is important in attitude studies since most attitudinal research has been motivated by the attempt to predict purchase behaviour. They are also relevant to our empirical work since some extensions and simplifications of these models will be applied to our data (see Chapters 8 and 9 in particular). Hence we deal only with those models either directly pertinent to our work, or which are most commonly encountered in the literature (e.g. Markov model).

Section 5.2. deals more directly with models of consumer behaviour in a wider sense, namely where express allowance is made for both consumers' attitudes and external influences such as advertising. There we will analyze in more details the paradigms of consumer research that were presented in Chapter 2.

5.1. MODELS OF BUYING BEHAVIOUR.

Besides the basic distinction between models of "brand choice" and of "purchase incidence", models of buying behaviour also vary according to their "stochastic" or "deterministic" orientation. While the former consider consumers' buying behaviour as the result of some probabilistic process, the latter attempt to predict behaviour in exact or "causative" terms.

For example, deterministic models of varied behaviour (e.g. switching among product alternatives) would seek to explain the phenomenon by ascribing it to multiple needs (e.g. multiple users, contexts, uses), or to changes in the choice process (e.g. change in taste), or to intrapersonal (e.g. new information) or interpersonal (e.g. the influence of other people) motives (McAlister and Pessemier, 1982).

Most of the models of attitude formation and change described in Chapter 3 and some of the most well-known models of consumer behaviour that will be analyzed in Section 5.2. assume a deterministic choice process. However, as remarked by Bass (1974), empirical testing of individual consumer choice deterministic models has often failed to explain a substantial part of the variance in actual purchases, and in many instances the explained variance was barely visible.

Stochastic models, on the other hand, would assume either that there is a stochastic element in the brain that influences actual consumer choice and that makes such choice unpredictable (e.g. Verbeke, 1992), or that, when looking at a large number of different consumers, their purchases are irregular enough to be summarized by a probability model, i.e. *as if* they were random (e.g. Bass, 1974; Ehrenberg 1972, 1988). Such models consider the factors that determine the outcome of behaviour only implicitly, since they are too complex and numerous to be accounted for individually by a single model.

In the course of this work we will see how a stochastic process as the one described by Ehrenberg (1972, 1988) is able not only to account for most instances of buying behaviour in a very parsimonious way (see Sub-Section 5.1.1. and our own results in Chapter 8), but also to explain some peculiarities arising from the analysis of individual consumers attitudinal responses over time (see Chapters 9 to 11). Our review here will therefore deal with these stochastic models only.

A stochastic process is supported also by empirical evidence from Bass et al. (1972) who found that, despite relatively constant market shares from one choice occasion to the next, individuals were switching brands 55% of the time. The behaviour of individual consumers would then be predictable only up to the limits of stochastic process.

As Bass (1974) remarks, "*the fact that the choice behavior of individual consumers is substantially stochastic does not mean that it is fruitless to study this behavior*". While it is not possible to provide good predictions of the choices of individual consumers on separate choice occasions, attitude studies and the study of the important dimensions of the choice process are managerially relevant with respect to product strategy.

Finally, stochastic models of buying behaviour differ in assuming either heterogeneity or homogeneity among consumers (see discussion later) and in describing steady-state versus dynamic markets. The latter distinction broadly corresponds to the differentiation between stationarity and change that was made in Chapter 2 when discussing the main difference between behavioural and cognitive theories of consumer behaviour.

After an overview of the stochastic models of buying behaviour dealt with in this section (see Table 5.1.), in Sub-section 5.1.1. we will briefly describe those concerned with purchase frequency and brand choice, while in Sub-section 5.1.2. we will discuss some of the many models of dynamic buying behaviour.

TABLE 5.1.
Stochastic Models of Buying Behaviour - Some Examples

MODELS OF STATIONARITY			MODELS OF CHANGE		
Model	**Characteristics**	**Comments**	**Model**	**Characteristics**	**Comments**
NBD (Ehrenberg, 1959; 1972, 1988)	Purchase Incidence Model combining distributions Poisson and Gamma to give a Negative Binomial distribution. Assumes *heterogeneity* of consumers and independence of purchases.	Extensively empirically tested to give accurate predictions of various parameters of buying behaviour, including repeat purchasing, for a brand in a product field.	Markov Chain Models (e.g. Anderson and Goodman, 1957)	The probabilities of switching to a brand depend on the brand lst bought. The probabilities are assumed to be *homogeneous* among consumers and not to change even when market shares change.	Assumptions disproved in practice, results difficult to aggregate because consumers buy at different rates, no consideration for multi-brand buying or multiple purchases of the same brand.
Dirichlet (Ehrenberg, 1988)	Combined Purchase Incidence and Brand Choice Model. Assumes *heterogeneity* of consumers (Gamma and Beta) with stable propensities to buy, zero-order process, independence of purchases incidence and of brand choice, unsegmented and unpartitioned markets.	As above, but *for all brands* in a product field. Parsimonious: only inputs are brands' market shares, category penetration and purchase rate, and switching parameter S.	Linear Learning Model (Kuehn, 1962)	Dichotomous purchasing process (buy - not buy) represented by a purchase and a rejection operator, whose parameters assumed to be *the same for all consumers.* Consecutive purchases of a brand increase the subsequent probability of buying it, but at a decreasing rate. The two operators are a function of time span between purchase and get closer as the time span between purchases approaches one.	Parameters difficult to estimate; no allowance for multiple brand buying. Homogeneity of consumers unrealistic.
Approximations of the above: $w(1-b) = w_0$ $b_{xy} = D\ b_x$ (see Chapter 8) (Ehrenberg, 1972, 1988)	Assumptions similar to the above.	Simple formulas yielding good predictions of specific aspects of buying behaviour, such as the average purchase frequency and the brand duplication of purchase.			

5.1.1. Models of Stationarity.

Models of stationarity are based on the concept that, for frequently bought goods, consumers have a stable propensity towards making a particular purchase. These theories are set to prove that, despite the general belief of marketing practitioners, purchase dispositions towards a particular brand change only quite rarely and, as a consequence, at least in the medium term, there are no radical changes in brands market shares.

Ehrenberg (1959), Ehrenberg (1972, 1988) and Ehrenberg and Goodhardt (1979) devised two of such models (the NBD and the Dirichlet), plus various simplifications, which, based on the stationarity and heterogeneity concepts, predict various parameters of buying behaviour such as, for example, repeat purchasing.

A) The Negative Binomial Distribution (NBD)

The first model devised by Ehrenberg and Goodhardt is the Negative Binomial Distribution (NBD) which, first applied to buying behaviour in 1959 (Ehrenberg, 1959), is a purchase incidence model showing how a chosen brand is bought. It is based on three levels of analysis and three distributions: i) **at the individual level across time periods** individual purchases can be regarded as independent drawings from a Poisson distribution; ii) **at the across individuals across time-periods level** the different consumers long-term average purchase rates (the mean values *m* of the Poisson distribution) follow a Gamma frequency distribution; and iii) **at the time-period level across individuals** the frequency distribution of purchases, if i) and ii) are true, follows a Negative Binomial Distribution (NBD).

For the Poisson distribution to hold two conditions must be met: i) successive time periods must be of equal length and they must be similar to each other (the *stationarity* condition); and ii) the period of analysis must be sufficiently long so that purchases made in one period do not directly affect those in the next (the *minimum time interval* condition).

For the Gamma distribution to hold two requirements must be met: i) that different consumers buy the given brand independently of buying each of the other brands in the market; and ii) that consumer buying of the brand is independent of how much of the total product class the consumer purchases.

These conditions are usually found to hold in practice, except during a new brand launch, until a new equilibrium is reached.

The assumptions of the Gamma part of the NBD relate to consumer heterogeneity: different consumers are heavy, medium, or light buyers of different items (as found in practice), and, because of the unpredictable incidence of endogenous and exogenous influences, the item purchases by each potential buyer are "as if" random over time and independent of each other.

The Poisson-Gamma formulation is found to hold well in practice under many different *stationary* conditions. The mathematic formulation is outlined here in its basic form (for more details see Ehrenberg, 1972, 1988):

$$p_r=(1+\frac{m}{k})^{-k}\frac{\Gamma(k+r)}{\Gamma(r+1)\Gamma(k)}(\frac{m}{m+k})^r$$

where p_r is the probability of making r purchases, m is the mean number of purchases made by all consumers in a given time period and varies in proportion to the unit time periods, and k is the constant (for different time periods) parameter of the Gamma distribution which describes differences in average purchasing rates of different consumers. m is best estimated directly from the panel data, whereas k can be estimated from the purchase frequency and penetration.

The NBD can also be used to provide estimates of penetration and average purchase frequencies, and to calculate the incidence and rate of repeat-buying over time periods.

However, the fundamental property of the NBD is the purchase frequency distribution of light, medium and heavy buying.

A general theory of stochastic preference is presented by Bass (1974) in terms not completely dissimilar to Ehrenberg's NBD, but without subsequent systematic empirical testing and parameter estimation.

B) The Dirichlet Model

The second model, known as the *Dirichlet*, is wider reaching, in that it predicts a range of different aspects of buyer behaviour in steady state conditions for all brands in a product field, rather than for one brand at a time like the NBD.

Like the NBD the Dirichlet is a stochastic model of purchase incidence and brand choice. Its only explicit assumptions are: (i) that consumers have certain stable propensities (or as-if probabilities) to buy, both as regards their brand choice and their purchase frequency; (ii) that they are very heterogeneous in both respects, in ways specified by certain Gamma and Beta probability distributions; (iii) that a zero-order stochastic process regulates the actual purchase incidence and brand choices (and repeat-buying rates) at the individual consumer level; (iv) that the buying-

frequency and brand-choice probabilities are independent; and (v) markets are unsegmented (no identifiable subgroups of relatively homogenous consumers) and unpartitioned (no submarkets of exceptionally substitutable brands) (Ehrenberg 1988; Ehrenberg and Bound, 1993; Goodhardt et al. 1984; Ehrenberg and Uncles, 1995a and 1995b).

Under these assumptions, and given an individual's probability p_x of choosing Brand X at any purchase time, the proportion of the population with probability close to p_x of choosing Brand X will be:

$$proportion = C' p_x^{\alpha_x - 1} (1 - p_x)^{S - \alpha_x - 1}$$

where S is a parameter of the product field, α_x is S times the market share of Brand X and C' is a constant independent of the particular value of p_x.

The formula can be simply changed to include the single probabilities of each Brand in the product field.

One special feature of the brand-choice part of the model is that it can be fully specified by using only the brands' shares within the product field and the single product-field parameter S (which is a measure of the overall amount of multi-brand buying or switching in the product field). Hence the model is very parsimonious.

Furthermore, two or more brands can be excluded from the model or can be combined into a "super-brand" without affecting the model's prediction for the remaining brands.

The Dirichlet model also gives accurate predictions of the interactions between brands, i.e.: i) the incidence of the 100% loyal buyers of each brand; ii) their average purchase frequency; iii) the average annual purchase of the category (*any* brand) per brand buyer; and iv) which other particular brand they also buy.

The picture that consistently emerges is that, although consumers tend to buy *any* brand within a product category much more often than a specific brand, they are largely "faithfully polygamous", in the sense that they choose from a steady repertoire of several brands with steady propensities (e.g. .6, .3 and .1 for three brands), and only occasionally (in the medium term) they try out a new brand or drop an existing one (e.g. Ehrenberg, 1972, 1988; Ehrenberg and Uncles, 1995a and 1995b).

Another specific pattern is that while the penetration of different brands can vary greatly from one to another, the average purchase frequencies tend to be more or less the same, or at least their amount of variation among brands is much smaller than the variation among penetration measures. The Dirichlet model shows, however, a small trend of purchase frequency measure with

the penetration level: for example the buyers of a small brand tend to be somewhat less loyal than the buyers of a large one, and the patrons of a small store chain shop there somewhat less often than patrons of a larger one shop there.

In practice, the Dirichlet model reflects and quantifies the empirical occurrence in buying behaviour of the phenomenon of Double Jeopardy, whose theory was originally developed by McPhee in social psychology (see Section 4.3.). The model is an advanced quantitative theory of the DJ, and replaces McPhee's "equal merit" assumption by, in effect, Luce's Independence of Irrelevant Alternatives (IIA).

Empirical evidence of the Double Jeopardy effect includes again consumer goods (e.g. Ehrenberg, Goodhardt and Barwise, 1990), industrial goods (Uncles and Ehrenberg, 1990), retail distribution (Uncles and Ehrenberg, 1988), TV viewing of programs and of channels (Barwise 1986; Barwise and Ehrenberg 1988; Ehrenberg and Wakshlag 1987), and motor cars (Ehrenberg and Pouilleau 1992).

C) The $w(1-b)=w_0$ approximation

The Dirichlet model described above can predict a number of performance measures for any brand with a specified market share, in any chosen length of analysis period. However, the calculations involved are cumbersome and require the use of computer software.

Fortunately there are some simpler, though approximate, formulae which can be used to calculate specific measures and which also bring out how the measures are interrelated.

One formula is known as the $w(1-b)=w_0$ formulation, where w is the average purchase frequency per buyer of the brand, b is the penetration, i.e. the percentage of consumers buying the brand at all in the initial period (in effect its market share), and w_0 is a constant for the product field. This operates under two of the Dirichlet's assumptions i.e. that: a) the buying of different brands is independent, and b) that brands do not differ in how often their customers on average buy the product category as a whole (Ehrenberg 1972; Ehrenberg et al. 1990; Kahn et al. 1988).

Under these assumptions, the average purchase frequency per buyer multiplied by the proportion of *non-buyers* does not vary greatly from brand to brand (i.e. the constant w_0). There is, however, a small trend of purchase frequency rate w with the brand's penetration b, as for the already mentioned Double Jeopardy sub-pattern.

The Double Jeopardy sub-pattern that the repeat-rate w varies as 1/(1-b) with the brand's penetration b follows directly from the $w(1-b)=w_0$ formulation.

Another simplified formula (the so-called Duplication of Purchase Law) pertains to the percentage of brand X buyers who also buy brand Y, which, in unsegmented markets, is found to be largely a function of the penetration of brand Y (see Chapter 8 for details).

The assumptions of the models just described may seem simplistic, but in practice they hold for the many product fields on which they have been tested, ranging from fast moving consumer goods, to automotive, health and financial products, and to distribution channels (for example, see Ehrenberg, 1972 and 1988; Uncles and Ehrenberg, 1988; Ellis, 1989; Uncles, 1990; Ehrenberg and Uncles, 1995a and 1995b to cite only a few studies).

The importance of both the *NBD* and the *Dirichlet* model (and its approximations) therefore derives from their general applicability and from their ability to successfully predict buying behaviour patterns in stationary environments. Systematic deviations from the predicted values are few and far between, and, more importantly, they have themselves become predictable (e.g. that for items bought very frequently, such as cigarettes and bread, the NBD models does not give good estimates). The knowledge of such systematic deviations allows the researcher to detect the presence of dynamic forces, which can then be further investigated and interpreted (e.g. Ellis, 1989).

The models are relevant to our research here because they describe the general "stochastic" process which also emerges from our results, e.g. that even in steady aggregate market conditions the incidence of individual buying and attitudinal claims is so unpredictable that they can be considered "as if" random (see Chapter 9). Their application to *reported* buying behaviour had not been done before (see Chapter 8).

Furthermore, our results are consistent with the sort of "statistical" selection procedure based on size effects which is at the basis of the Double Jeopardy phenomenon, e.g. that the claimed purchase frequency and attitudinal responses of a brand do not depend on the characteristics of the brand itself, but only on its "size" or market share (see Chapters 8 and 9). This will be confirmed as a broad theoretical orientation applicable to attitudinal responses as well, for which we did not have any previous formal quantitative model as the ones just described for Buying Behaviour (see Chapter 10).

Finally, the NBD type of frequency distribution for light, medium, and heavy buyers is consistent with our results linking the rate of repeat-responses with the buying frequency of the brand (see Chapter 11).

We now compare the above models of stationarity with models of change.

5.1.2. Models of Change.

Most marketing practitioners and researchers have traditionally been interested in models of change, under the assumption that marketing is, to them, by definition concerned with a dynamic environment. Such models of change are, therefore, numerous, although many of them have not been as thoroughly and extensively tested as the two models of stationarity discussed in the previous section.

Only two of such models will be described here, the first because of its widespread use, and the second as an example of what these models are trying to do.

A) Markov Chain Models.

One of the most widely used theories of buyer behaviour is the one that goes under the general term of Markov Chain (after the Russian mathematician A.A.Markov). As a statistical Model the Markov Chain was first developed by Anderson and Goodman in 1957. Several Models can be derived from the basic chain concept of considering the effect of past purchases on the probability of current buying: different "orders" can be assumed, depending on how far the influence of previous purchases is felt on subsequent ones.

For example, the "first order" Markov Model is based on the assumption that, based on the previous purchase, consumers will have the same, fixed probability of purchasing a given brand in the product field at the next occasion. Furthermore, these probabilities are supposed to remain fixed in time, even when market shares change. They form the so called Brand-Switching or Transitional Probabilities Matrix.

Despite these stationary transitional probabilities the Markov theory is a model of change because the market shares will settle down to a steady state configuration only after a few purchases. This will depend on the switching matrix itself and not on the initial market shares.

The main flaws of Markov Theory lie precisely in the two main assumptions of homogeneity of purchase probabilities across consumers, and of their constancy even when market shares change.

The notion of homogeneous consumers is consistent with economic models of buying behaviour (see Chapter 2), but contradicts well-established theory and consistent empirical evidence that purchase probabilities not only vary among consumers in general (i.e. among light, medium and heavy buyers of a brand - see Sub-section 5.1.1.), but even among ideally very homogeneous samples, such as doctors prescribing drugs (Stern, 1994).

Strong theoretical bases (e.g. McPhee, 1963) and extensive empirical application of the heterogeneous models described above are also strong proof that the incidence of repeat-buying and brand-switching by and large does not depend on the specific brand as such (as postulated by Markov's switching matrix), but varies with market share, according to the so-called Double Jeopardy pattern.

In addition, Ehrenberg and Goodhardt (1979) and Engel and Blackwell (1982), identify other problems, mainly associated with the hypothetical, rather than empirically based nature of the model:

(i) since, in practice, different consumers buy at different rates, their purchase sequences are out of phase and it is therefore difficult to aggregate the results, as presupposed by the Markov model. This last point makes it particularly difficult to infer transitional probabilities for the entire population based on sample estimates;

(ii) the model does not offer any solution for the way multi-brand buying or multiple purchases of the same brand should be treated.

B) Linear Learning Model

Engel and Blackwell (1982) also discuss the Learning Model elaborated by Kuehn (1962), from which several others were subsequently derived.

Firstly, according to Kuehn's formulation, past brand choices should affect future behaviour and secondly, pre- and post-purchase probabilities are in a linear relationship.

Since the purchasing process is dichotomous (i.e. buy or not buy), Kuehn defines two linear relationships which he terms purchase operator (P.O.) and rejection operator (R.O.):

purchase operator: $p_{t+1} = \alpha + \beta + \Lambda\, p_t$ if Brand A is purchased at t

rejection operator: $p_{t+1} = \alpha + \Lambda\, p_t$ if Brand A is not purchased at t

The parameters α and β represent the intercepts and Λ the common slope (see Figure 5.1.). They are assumed to be the same for all consumers and they are estimated from panel data.

At time t_0 a consumer will have a purchase probability p_0. If the item is bought, the purchase probability p_1 at the next purchase occasion t_1 will be determined by referring to the purchase operator. p_1 can be read on the X axis with the help of the diagonal line. p_1 will then be the starting point for the determination of the probability at time t_2, with reference to the suitable operator.

The probability has a lower limit p_i corresponding to the continued rejection of the Brand and an upper limit p_u of continuous purchasing. These are two extreme cases that will be rarely achieved.

The model has two characteristics:

a) consecutive purchases of Brand A increase the subsequent probability of buying A, but at a decreasing rate;

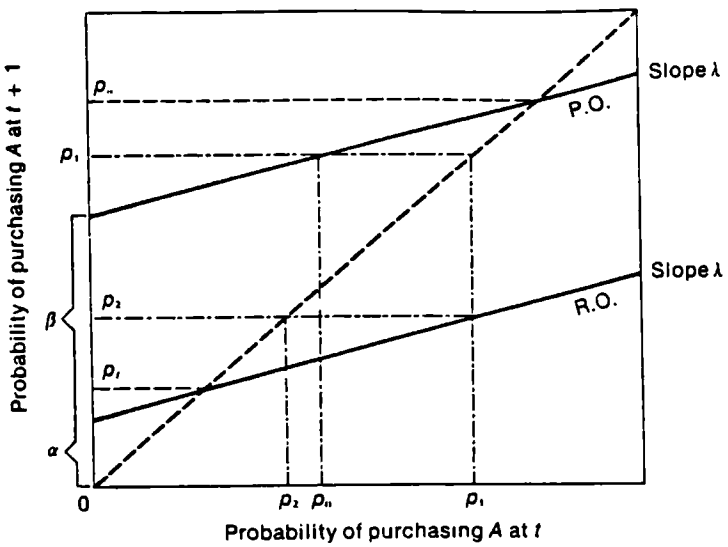
b) the two operators are functions of the time span between purchases. As the time between purchases increases, the two operators decrease in slope and the upper and lower limits get closer. When the frequency of purchase is high and the time between purchases approaches zero, the two operators approach the diagonal; however, when the frequency is low and the interval between purchases approaches one, the operators approach each other and their slope tends to zero.

Despite some extensive testing on many frequently purchased branded goods, this model has not been as popular as the Markov chain theory, mainly because of the difficulty in estimating the parameters.

This model, as the previous one, has the major drawback of not allowing for multiple brand buying, being restricted to a dichotomous choice.

FIGURE 5.1

The Linear Learning Model



Source: Engel and Blackwell (1982)

5.2. MODELS OF CONSUMER BEHAVIOUR.

As Ehrenberg and Goodhardt (1979) underline, "*the study of consumer behaviour goes beyond the act of buying to include subsequent usage of the product, consumers' attitudes, the underlying decision processes, and the various influencing factors. It may be said to be trying to explain, whereas the study of buyer behaviour concentrates more on first trying to describe*".

The models summarised below have the common characteristic of having been devised with brand choice in mind, unlike the general theories discussed in Chapters 3 and 4 which had their origins in either psychology or sociology. However, the models below differ greatly in their approach, in particular in the causal direction of the Attitude-Behaviour consistency and in the amount of cognitive activity that is presumed to take place before purchase.

Before entering into the details of such models, we give a brief overview in Table 5.2. below.

TABLE 5.2.
Models of Consumer Behaviour - Some Examples

Models	Characteristics	Comments
The Howard-Sheth Model (Howard Sheth, 1969)	Highly deterministic and causative, with strong cognitive foundations, attempts to describe all stages of choice process from problem solving search to actual purchase.	Very complex, difficult to operationalize, no consideration for multi-brand purchasing.
The AIDA Model	Awareness →Interest →Desire →Action	Simple, but no consideration of habitual behaviour. Empirical support lacking for the "desire" part in non-routine choices. It does not cover what happens *after* a purchase ("Action"), when most advertising takes place.
The ATR Model (Ehrenberg, 1974)	Awareness →Trial →Reinforcement	Simple, can be applied to both routine and infrequent buying behaviour.
The Behavioural Perspective Model (e.g. Foxall, 1990)	Relativistic perspective: the rate of recurrence of behaviour is a function of the outcome that similar behaviour has had in the past, but it allows for the influence of inner-state variables. Situational variables are also taken into account.	Comprehensive model incorporating both cognitive and behavioural elements. However, empirical verification in different settings is needed.

5.2.1. The Howard-Sheth Model.

This Theory was first outlined by John A. Howard and Jadish N. Sheth in 1969 in their book "The Theory of Buyer Behaviour", and, within its general structure, it was in later years revised (e.g. see the 1974 version in Figure 5.2.).

The purpose of the model is quite ambitious, in its attempt to describe all possible influences on consumer choice and to devise causal relationships. Its foundations are in the Cognitive tradition of consumer behaviour and in various social science theories, rather than in empirical findings.

The model implicitly allows for subsequent stages in the choice process, from initial Extended Problem Solving to Limited Problem Solving, and finally to Routine Response Behaviour through the relative strength of parameters such as Information, Brand Comprehension, and Stimulus Ambiguity.

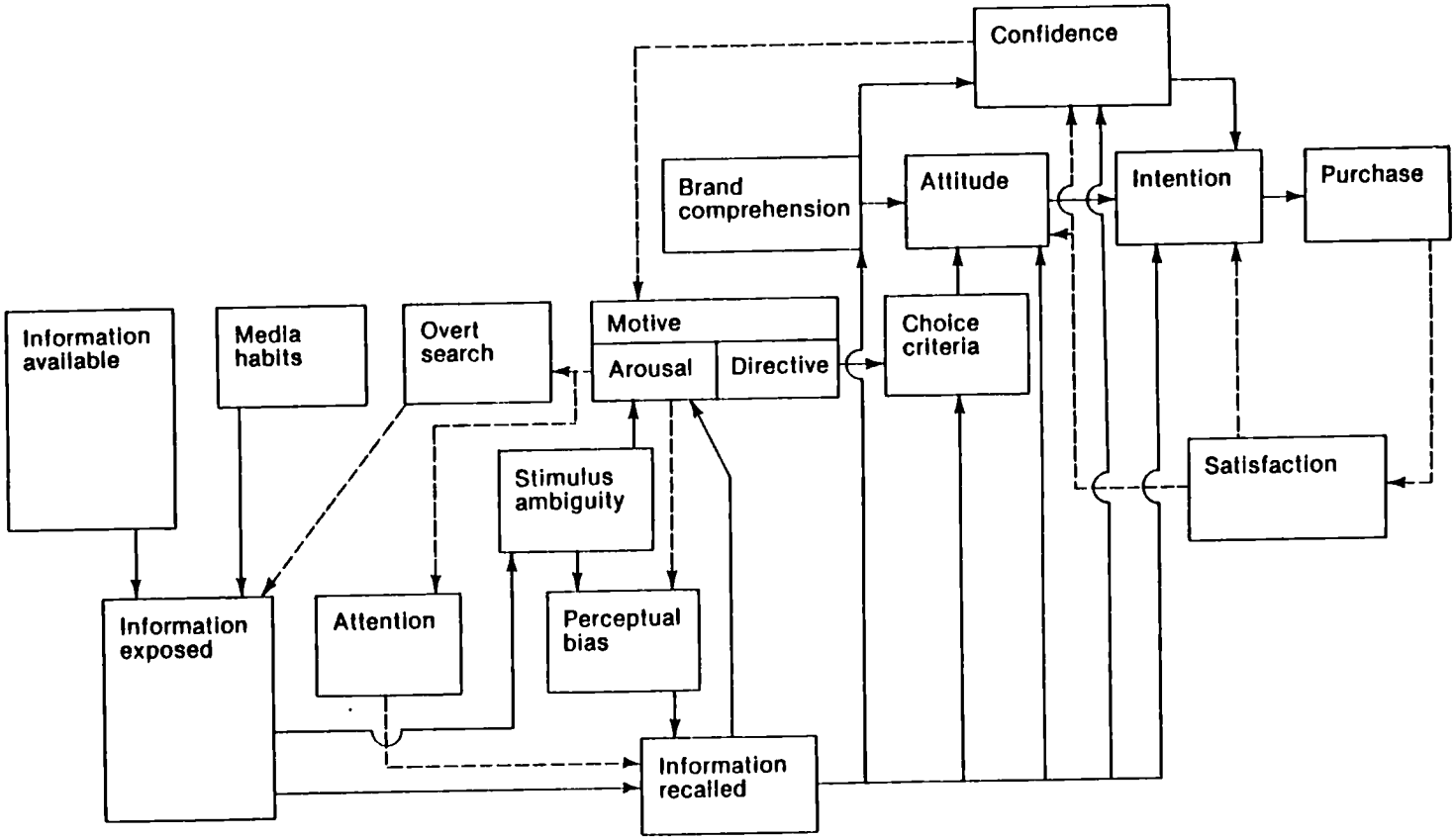
However, its main drawback is its description of a single purchase, with no consideration of underlying mechanisms such as multi-brand purchasing, purchase frequency, etc. For this reason the phenomenon described always appears to be dynamic, and subsequent purchases of different brands are always seen as brand switching rather than possibly part of a steady multi-brand buying pattern. The only link with previous purchases is a feedback link through satisfaction. Moreover, there is no consideration for situational factors.

In their review of this model Engell and Blackwell (1982) report that numerous attempts to empirically test it failed in various degrees to find consistent causal relationships between the variables. This was due to several reasons, including problems in the univocal definition and correct measurement of many of the variables. Furthermore, the model implies a definite causal priority among constructs, which clearly emerges only if all exogenous factors can be controlled for (which is difficult in reality). Besides, causation is often a two way phenomenon. Finally, while the model allows for linear causal relationships between variables, this might not always be so.

In conclusion, although the merit of the model has been the attempt to give a structure to the many factors influencing purchase decision making, it appears to have had little practical use.

FIGURE 5.2.

The Howard - Sheth Model, 1974 Version



Source: Engel and Blackwell,(1982)

The next two models discussed here are of the so-called "Box and Arrow" kind, and they have the common characteristic of being broad models of behaviour, in as far they are concerned with identifying the general decision process sequence. They therefore give a framework for analysis, and describe the overall approach, rather than outlining a detailed serial order as the Howard-Sheth configuration above.

Their importance lies precisely in this broad approach, which can be the starting point for more detail configurations and empirical analysis.

5.2.2. The AIDA Model.

Awareness → Interest → Desire → Action

Much simpler in its structure than the Howard-Sheth, the AIDA model can be positioned in the context of those theories which presuppose a rational consumer making decisions on the basis of the elaboration of available information. It is therefore positioned within a Cognitive approach.

Like many of the theories within a Cognitive tradition, the AIDA choice sequence seems to apply mainly to a first time buyer, with no previous experience, or to turning a non-buyer (of a brand) into a buyer. In this context, therefore, the model misses out on much of the nature of buying behaviour, which is repetitive and involves purchasing a repertoire of brands, and it seems then to be applicable mainly to infrequently bought products or first purchases.

Unfortunately, even in the latter context, empirical support is lacking to the model as far as the "desire" part is concerned. Not only is it unlikely for a consumer to form a strong conviction about the exclusive desirability of a brand at the first purchase occasion but, even for so called high involvement products, where consumers are supposed to be actively searching for information, the actual purchase is always subject to a certain amount of risk and uncertainty (Ehrenberg and Goodhardt, 1979).

When Festinger elaborated his theory of Cognitive Dissonance he was indeed referring to this process of post-purchase rationalisation, which is necessary to compensate the uncertainty stemming from purchase decisions, especially important and non-routine ones.

Olshavsky and Granbois (1979) also remark that empirical evidence gathered by various studies shows that for many purchases a decision process as the one here described never occurs, not even at the first purchase. Even when purchase behaviour is preceded by a choice process, it

is likely to be limited, typically involving the evaluation of few alternatives, little external search, few evaluative criteria, and simple evaluation process models.

Ehrenberg and Goodhardt (1979) note that, contrary to what is generally thought, the concept of the rational consumer seems to apply more to routine choice behaviour typical of frequently purchased goods, than to high-involving, infrequent purchases.

In the former instance, consumers have usually a good knowledge of the characteristics of the available range of brands, and their uncertainty in making a choice will therefore be limited. Housewives making routine choices will be rational, in the sense that they know that, in most product categories, brands vary little, and their choice among a repertoire of brands will be subject to little or no uncertainty and risk.

Moreover, as remarked by Davis (1976), housewives often shop on behalf of other family members, hence we should not expect *their* brand attitudes or personalities to predict household purchases over time, especially if the choice situation involves compromise and other relevant role attitudes (e.g. what a good spouse or parent should do).

Where the risk is higher and previous experience is lacking or remote, like in the case of infrequent consumer (and industrial) purchases, bounded rationality, the difficulty of gathering all available information, and therefore uncertainty will be the dominant factors. As Olshavsky and Granbois (1979) remark, in these circumstances often consumers rely either upon other people's advice, or on general choice heuristics and preference developed through past experience. They might also be guided by the desire to comply with social norms and stereotypes. Studies of shopping activity preceding major durable goods purchases are for example reported to have found a high incidence of purchase occurring after a single store visit, despite the high monetary value, physical complexity and relatively low purchase frequency.

The ATR Model described below is more in line with the interpretation of choice behaviour given by Olshavsky and Granbois and by Ehrenberg and Goodhardt.

5.2.3. The ATR Model.

Awareness → Trial → Reinforcement

This model was devised by Ehrenberg (1974) and has the advantage, over the previous ones, of being applicable to all purchase circumstances, namely:

a) first purchase of a brand in a frequently-bought product class;

b) continuing purchases of frequently-bought brands;

c) purchase of an infrequently bought product.

a) When consumers buy a new brand in a frequently bought product-class, they will already have a knowledge of the basic characteristics of many of the brands in the product field. The risk involved is therefore limited, also because the decision generally does not entail a large amount of money and its consequences are short term.

Although a general awareness of the new brand is necessary for the purchase, this knowledge does not have to be extensive, and a strong conviction on the features of the new brand and its benefits is not necessary to induce the trial. Borrowing from Zajonc's concept of familiarity, awareness does not even have to be explicitly recognised to provoke a vague predisposition and favourability towards the new brand. Consumers, for example, might have been passively subject to some form of advertising, which then causes brand recognition at the time of purchase (see also the concept of learning without involvement developed by Krugman, 1965).

A trial purchase can also be motivated by reasons totally independent from the subject, for example an out of stock situation of the favourite(s) brand(s), a particularly attractive incentive (e.g. a good monetary deal), or just that some awareness has aroused (my neighbour mentioned it in conversation yesterday).

This second phase of trial is the crucial one in determining the general attitude of the consumer towards the new brand, either by reinforcing the desire of trying the brand again (if satisfied) or by reinforcing its positive attitude towards other brands (if dissatisfied).

This either positive or negative reinforcement will develop through a process of rationalisation apt to reduce the dissonance between the act and the original unconvinced, but slightly favourable attitude towards the brand. For example, as noted by Dodson, Tybout and Sternthal (1978), the pre-purchase favourable attitude and the trial might be attributed only to the monetary incentive, or, on the contrary, it could be justified by true liking.

Several purchases and several reinforcement processes might be necessary before the consumer can develop a strong habit towards the new brand. If this happen, the new brand will be included in a wider range of possible brands, but very rarely it will become the only and exclusive brand purchased.

Especially if the new brand does not differ substantially from the existing ones, this process of reinforcement might be lengthy and it might need to be corroborated by external forces such as advertising. This will help reduce the cognitive dissonance or doubt about the purchase.

From this description and from what follows, the importance of behaviour on attitude formation clearly emerges (whereas the AIDA model presupposes the reverse).

b) When the consumer is highly experienced with the brands in the product field through frequent purchasing, he/she will choose from a repertory of brands which, he knows, usually vary little from each other. Because of this limited variance, he will be able to switch among them. His rationality consists in the knowledge of little difference.

Humans, however, are animals of habit and, in order to reduce any kind of effort involved in choosing even among brands of similar features, they will develop preferences towards a selected repertoire. These preferences will also be the justification for the selection among the limited range.

The repeated usage of the brand will be the main reinforcing factor. This is consistent with Bem's (1967) notion of attitudes as self-description of behaviour: I must like it, since I always buy it.

c) For infrequently bought goods, the awareness is often created through overt search for information from trade press, "experts", medias.

Direct previous experience is, however, rare, either because it is really a first purchase, or because the previous purchase is not directly comparable or is remote.

Choices will be made therefore with a limited knowledge of the choices available and with a certain risk undertaking.

Once the purchase is made, experience will be limited to the brand acquired, and the purchaser will need reassurance about his choice. He does not have the certainty that another make would not be better. Advertising, reinforcement from other people, and checks of the unchosen alternatives in the shops, will be sources of reassurance.

A positive reinforcement, while will not have a direct influence on the next purchase, which might be some time away, will itself become a source of reassurance for other people in the same situation, therefore creating an environment equivalent to the development of repeat-buying habits for frequently-bought goods.

The ATR model seems the most convincing of all theories concerned with the consumer choice process, both for its general applicability to different purchase conditions and for its foundations in solid theories of information processing, as described in previous pages (i.e. Festinger's, Bem's, and Zajonc's formulations). There is also strong empirical evidence for it, as evident from Chapter 6 and from our own results.

Consistent with the ATR configuration is also the application to the marketing context of the Behavioral Learning Theory suggested by Rothschild and Gaidis (1981): advertising would stimulate awareness, which in turn would prompt trial. Finally, the reinforcement and satisfaction derived from the product would increase the probability of repeat-behaviour. According to Rothschild and Gaidis:

> *"Since the key to successful marketing is closely tied to repeat purchase behavior, the notion of providing positive reinforcement for desired behavior is crucial; therefore, positive reinforcement must be the ultimate goal of the marketer".*

However, Foxall (1990) criticises Rothschild and Gaidis definition of the concept of 'shaping' which, according to Foxall,

> *"is not a matter of forming a habit, which implies that an existing response is frequently repeated, but of learning a new terminal response through performing a sequence of prior actions that build towards it as a result of differential reinforcement."*

Because of both empirical evidence and strong theoretical backing, we therefore disagree with the common view (expressed for instance by Mittelstaedt, 1990 and Earl, 1990) that the Cognitive choice process is rational, while the Behaviourist one is irrational. The Cognitive notion in fact appears to be normative, rather than empirically based, not taking into consideration either the "irrationality" of choices made under conditions of uncertainty or the effect of previous experience. The Behaviourist approach, on the other hand, is "rational" in the sense of allowing previous experience to reduce the cost of thinking for routine choice behaviour, and choice heuristics from similar experience to guide and reduce the uncertainty of unfamiliar purchase situations.

No single theory, however, might be able on its own to explain such a complex phenomenon as consumer behaviour. This is the view taken by Foxall (1986, 1987, 1990, 1992a, 1992b) who puts forward a "*relativistic perspective on consumer research*" based on the interaction of competing explanations, namely cognitive psychology, with its emphasis on inner causes, and behaviourism, with its consideration for external influences. His approach led him to the development of the Behavioural Perspective Model which is illustrated in the next section.

5.2.4. The Behavioural Perspective Model

Foxall's relativistic approach stems from the critical appraisal of both cognitivism and radical behaviourism (the latter in the form of the Experimental Analysis of Behaviour elaborated by Skinner).

The main problems of cognitive models are identified as: i) the decontextualization of consumer behaviour; ii) the excessive emphasis on the involvement and commitment of consumers, despite the routine nature of many consumer choices; iii) the over-reliance on hypothetical, inner-state constructs or traits (e.g. natural innovativeness) which lack of any hard-core empirical evidence.

While Foxall remarks that Experimental Analysis of Behaviour (EAB) has offered an alternative and viable interpretation of behaviour in terms of its environmental determinants, he perceives three main problems for its direct application to consumer behaviour, namely: i) it refers primarily to relative close situations, whereas consumer situations are often relatively open; ii) it excludes the effect of any inter-verbal behaviour, that may act as discriminative stimuli; iii) is itself often dependent on theoretical terms that relate to the unobservable.

In synthesis, the Behavioural Perspective Models (BPM) advanced by Foxall finds its roots in the EAB's concept of operant behaviour, which sees the rate of recurrence of behaviour (the dependent variable of the model) as a function of the outcome that similar behaviour has had in the past, but allows for the influence of inner-state variables. Operant behaviour is here described in terms of both the relative openness of the setting in which behaviours occur and the *informational* as well as the hedonic reinforcement[8] available in or promised by the setting (this is in essence the consumer's learning history).

The relative openness of the setting is conceived as a function of: i) physical surroundings or physical antecedents; ii) social surroundings or social antecedents; iii) the rules that determine the contingencies among the Antecedents, the Behaviour, and the Consequences. The rules assume particular importance especially where the consequences of behaviour are not immediate (as, for example, with dental flossing or low cholesterol dieting). Behaviour then is assumed to take place at the interaction between setting and consumer's learning history. The latter determine what can act as a discriminative stimuli, but they can affect the consumer's actual behaviour only if elements of the setting prompt purchase or consumption.

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[8] Skinner's EAB configuration included only hedonic reinforcements.

Foxall then distinguishes four broad forms of consumer behaviour:

- *Maintenance* or routine behaviour, e.g. weekly grocery shopping;
- *Accumulation*, e.g. collecting, saving, instalment buying. etc.;
- *Pleasure*, e.g. entertainment in various forms;
- *Accomplishment*, or personal achievement through, for example, conspicuous consumption.

There is variation among the four classes in the ratio at which reinforcement is provided: from Fixed Interval, to Fixed Ratio, Variable Interval, and Variable Ratio respectively.

The four classes of consumer behaviour operate on the continuum of behaviour settings (from relatively open to relatively closed) and can provide either high or low degrees of hedonic and informational reinforcement, hence the Behavioural Perspective Model incorporates eight basic contingencies of behaviour (see Figure 5.3.).

In summary, Foxall believes that the causes of behaviour

> *"...are to be found ultimately in the environment rather than within the individual, though internal events which, through pairing with the reinforcing consequences of behaviour, acquire the status of discriminative stimuli, may act as environmentally-conditioned proximate causes"* (Foxall, 1990, p.162), especially in relatively open settings where environmental factors have a less direct impact on behaviour.

The Behavioural Perspective Model also allows Foxall to define involvement in behavioural terms, and to delineate the means by which marketing managers can influence consumer choice.

Involvement would be determined by the degree of hedonic and informational reinforcements: the most involving behaviour would be characterized by high levels of both hedonic and informational reinforcements, whereas behaviour maintained mainly by situational factors would be of the least involving kind. In between these two extremes greater or lesser involvement would be determined by the prevalence of either informational or hedonic reinforcement. The definition of involvement in these terms has the advantage of being independent of specific products, decisions, communications, and contexts. It also avoids the vague definition of involvement as perceived or felt relevance.

Under the BPM marketing managers have different options in trying to influence buying or consuming. The first kind of action involves the closure of purchase settings, to make the environment more controllable (e.g. by encouraging specific purchase and consumption approaches). The second option involves the manipulation of the hedonic and informational reinforcers, by increasing either their effectiveness, or their quality and quantity, or by controlling their schedules.

FIGURE 5.3.
The Behavioural Perspective Model

BEHAVIOR SETTING

relatively open ↔ relatively closed

	ACCOMPLISHMENT			
	CONTINGENCY 1	CONTINGENCY 2		
apparent schedule: VARIABLE RATIO	Extended Consumer Behavior - search & evaluation for status symbols (innovations, luxuries) - reading literary novels - watching TV documentaries, etc.	Excitement & Fulfillment - casino gambling - personal development training (e.g. est) - religious training - (e.g. Scientology auditing etc.)	high informational reinforcement	high hedonic reinforcement
	PLEASURE			
	CONTINGENCY 3	CONTINGENCY 4		
apparent schedule: VARIABLE INTERVAL	Popular Entertainment - watching TV game/variety show or 'happy news' - listening to popular music - watching pop music video etc.	Inescapable entertainment/ Alleviation of Personal Pain - watching in-flight movie - taking headache remedy - having hospital treatment etc.	high informational reinforcement	
	ACCUMULATION			
	CONTINGENCY 5	CONTINGENCY 6		
apparent schedule: FIXED RATIO	Collecting - installment buying - Christmas club saving - collection of coupons or other tokens in connection with promotional deal, etc.	Token Economy-Based Buying - accumulation of 'airmiles' - purchasing products which confer entitlement to prizes, etc.	high informational reinforcement	low hedonic reinforcement
	MAINTENANCE			
	CONTINGENCY 7	CONTINGENCY 8		
apparent schedule: FIXED INTERVAL	Routine Purchasing of Socialized Economic Necessities - supermarket grocery shopping - having dental checkup - hairdressing, etc.	Regular Mandatory Purchase/Consumption - paying taxes - buying TV license or passport - paying road/vehicle tax, motor insurance premiums, etc.	low informational reinforcement	

SOURCE: Foxall (1992)

The BPM seems to make sense, both in terms of being able to explain and interpret various contingencies of consumer behaviour, and as a comprehensive model incorporating both cognitive and behavioural elements.

There are some conceptual similarities between Foxall's BPM and the interpretation of social behaviour given by Triandis (1977):

> *"Behavior is a function of behavioral intentions and habits. Habits are a function of the frequency, intensity, and immediacy of reinforcements that follow particular acts. Intentions are a function of social, affective, and cognitive influences. Social influences are a function of norms, roles, social contracts and the person's self-concept. Norms and roles reflect social situations, such as the kind of interdependence, the resource allocation, and the age of the relationship."*

However, empirical support for the models has so far been available mainly in the context of social demarketing (of which Foxall gives several examples), while empirical verification on broader consumer behaviour setting is still missing.

More recently the BPM has been used by Foxall (1995) as a theoretical framework to interpret the findings of behavior analysts on resource conservation and pollution control, and to originate possible marketing mix strategies compatible with the four classes of environmentally-impacting consumer behaviour identified and described by the BPM.

CHAPTER 6: ATTITUDE BEHAVIOUR CONSISTENCY

6.1. Brand Awareness

6.2. Advertising

6.3. Purchase Intentions

6.4. Previous Brand Usage

6.5. Summary Remarks

6. ATTITUDE-BEHAVIOUR CONSISTENCY.

Brand Awareness, Advertising, previous Brand Usage, and Purchase Intentions have been to various degrees associated with the ability to predict or to explain consumer behaviour, in the attempt to establish the existence and the direction of Attitude-Behaviour consistency. These concepts will be examined here in more detail. Most of the research described below falls into the general framework of one of the theories outlined in the previous Chapter.

The review in the next sections is not meant to be an exhaustive account of research on those topics, but gives an overview of typical results. We should stress, however, the difficulty that we have encountered in trying to compare and integrate the results of a body of research characterised by many isolated studies, which have put their emphasis on the creation of new models and on the postulation of new theories, rather than on consolidating previous results.

TABLE 6.1.
Attitude-Behaviour Consistency - Main Findings

BRAND AWARENESS	ADVERTISING	PURCHASE INTENTIONS	PREVIOUS BRAND USAGE
* Relationship between Awareness and Usage. Awareness a function of Usage? (Bird and Ehrenberg, 1966a) * Attitude and Awareness → Market Share (Assael and Day, 1968) * Awareness as a choice heuristic at 1st choice occasion. Subsequent choices based on outcome of trial and evaluation process (Ehrenberg, 1974; Hoyer and Brown, 1990; Smith and Swinyard, 1983)	* "*Learning without involvement*" (Krugman, 1965) * *"Peripheral Cues"* used for choice of low-involvement products or when low information about brand (e.g. Petty, Cacioppo & Schumann, 1983) * "*Framing*" vs. "*Usage Dominance*" effects of advertising (e.g. Deighton et al., 1994; D'Souza and Rao, 1995) * Mutual relationship between advertising and attitudes, and advertising and purchase behaviour (Joyce, 1971a) * Users of a brand more sensitive to its advertising than non-users? (Adams, 196a, Ehrlich et al., 1957; Mills et al., 1959; Joyce, 1971a) * Reinforcement effect of advertising (e.g. Ehrenberg, 1974; Tellis, 1988) * Impact of advertising vs. impact of experience (Smith and Swinyard, 1983) * Advertising does not manipulate consumers (Achenbaum, 1972; Verbeke, 1992) * Advertising maintains the salience of the mental connections that consitute a brand (Brown et al., 1992)	* Behavioural Intentions closely approximate Behaviour (Fishbein and Ajzen, 1975) * Theory of Self-Regulation (Bagozzi, 1992) * Morrison's (1979) Stated vs. True Intentions * Intentions to Buy in the future as a function of current Usage (Bird and Ehrenberg, 1966b)	* Post-choice cognitive process of brand re-evaluation (Cohen and Houston, 1972) * Attitude based prediction of choice must be probabilistic, since individual choice behaviour is not constant, even when attitudes are unchanging (Bass et al., 1972) * "Evaluative" vs "Descriptive" attributes (e.g. Ehrenberg and Goodhardt, 1980; Barwise and Ehrenberg, 1985)

6.1. BRAND AWARENESS.

The basic theories behind the concept of familiarity and awareness were reviewed in Chapter 4.

A substantial amount of subsequent research has focused on the measurement of brand awareness, in the attempt to establish if a higher degree of familiarity could be a predictor of future brand usage.

A well defined and strong brand identity is, to many marketing practitioners, the only way they can produce the illusion of difference in many markets where brands objectively differ very little (and consumers usually know it). Brand awareness is also a commonly used measure in commercial marketing research to estimate the effect of advertising or other marketing activities. It can be measured in the form of either unaided brand recall (e.g. "which brands can you think of" - generally or for a specific product category) or aided brand recall (e.g. "which ones of these brands have you heard of").

General, unaided brand recall has been found to vary by product type, and to be linked to the frequency of purchase and/or the advertising support (but since often the two are correlated, it has been difficult to differentiate their effect). Brands that include a large number of items under the same name umbrella have also been found to achieve a substantially higher number of mentions. Finally, new brand names (i.e. less than five years old) were almost absent from any mention list in a study by Bogart and Lehman (1973).

Bird and Ehrenberg (1966a) established that the proportion of consumers who are spontaneously aware of a brand and the proportion claiming to use it, vary together from brand to brand, in an almost linear manner for brands with a low market share and in a non-linear manner for brands with a high market share. For the latter, the proportion of informants being aware of the brand appears disproportionably higher than the proportion using it (this was also found by Bogart and Lehman, 1973). Bird and Ehrenberg suggested the following relationship between awareness and usage:

$$\log(1 - A) = q \log(1 - U)$$

or:

$$(1 - A) = (1 - U)^q$$

where (1-A) and (1-U) correspond, respectively, to the proportion of informants not aware of the brand and to the proportion not using it, with q being a parameter characteristic of each product field. From the second relationship one can derive the level of awareness to be expected for a given usage level.

The same form of relationship was found to apply to different product categories (within a mean deviation of about .03). Deviations larger than 3% seemed to arise either from technical reasons of question wording, difficulty over product field definition or, to a larger extent, from the level of past advertising expenditure, especially when periods longer than five years were considered.

There seemed to be a general tendency for brands with an above-normal advertising expenditure to have higher awareness than usage shares, and vice-versa for below-normal levels (deviations from normal were determined in terms of the equivalent of one percentage point of usership). Possibly, certain brands might need an above normal advertising expenditure to reach or stay at their sales level, and this could lead to an abnormally high level of brand awareness. Also the definition of usage could have, they claimed, an effect.

A more in depth study of the extent of the deviations from the proposed equation might be helpful in achieving a better understanding of response bias due to wording and of the effects of advertising on brand awareness for different product categories and/or brands.

Finally, for brands where the usage level was falling, the trend of relative awareness was upwards, while for brands whose usage level was rising, the relative awareness moved from high to low. Although the question of causality was not directly tackled in this paper, the inverse relationship between changes in awareness and changes in usage is in the direction of awareness being a function of usage, where declining old brands still enjoy a high level of popularity, while new rising brands are not yet known by the majority of the people.

The issue of attitudes and awareness as predictors of market shares was instead the object of other studies, such as the one by Assael and Day (1968). Starting from the acceptance of a predictive relationship at the individual level, they set to study the strength and nature of the relationship at the aggregate level, through the use of time series regression analysis. They tested both the direction of the relationship and the predictive power of attitudes, awareness and previous brand usage for different products (analgesics, deodorants, and instant coffee), in order to establish if the product field had any influence on the predictive power of the variables.

They interpreted their regression results as indicative of a causal relationship, whereby attitude and awareness would be determinants of markets share, although the size of the explained variance varied substantially among product categories and even among brands in the same product, and at best still left half or more of the variance unexplained.

This study is representative of an unfortunate tendency in much academic research to rely on results based on the mere size of statistical coefficients, without much attention to explanation and interpretation coming also from other kinds of evidence and from replication.

The finding that the results for the inverse relationship (market share causing awareness and attitudes) were even lower does not really help us in establishing the direction of the causality, but might mean that either the measurement or the technique employed were inappropriate.

The use of correlation coefficients only reveals that a relationship exists, but is not in itself proof that causation is involved. Furthermore, the mere comparison of the size of correlation coefficients should not be used to make inferences of the direction of causation. The slope and the scatter of the relationship between brand awareness and market share and viceversa should be compared before we can draw inferences on the reasons behind the differences in correlation levels.

Finally, other studies have assessed the effect of brand awareness on brand choice.

Awareness would function as a sort of simplifying choice heuristic, where the brand known through advertising is chosen by the majority of the subjects at the first choice occasion (Hoyer and Brown, 1990). Consistently with the ATR model (see chapter 5) and with findings by Smith and Swinyard (1983), subsequent choices would be based on the outcome of the trial and evaluation process (taste and no longer awareness were given as motivation of subsequent choices).

On the other hand, subjects with no previous awareness, would use other selection criteria, like the attractiveness of the package, and they would sample more brands than the first group before making their final choice. Their final choice would be more likely to be the best quality brand.

This stream of research underlines the importance of trial for the reinforcement and/or formation of attitudes and subsequent repeat choice.

However, all the above mentioned studies are in need of replication on other sets of data in an extensive way, before their results can be thoroughly assessed and generalized.

6.2. ADVERTISING.

In the attempt, by many researchers, to establish a causal link between attitudes and behaviour, advertising has often been identified as the tool through which marketing managers could manipulate consumers' attitudes and their subsequent behaviour. However, both academic and "commercial" marketing research have recognized the difficulty in proving a direct effect of advertising on sales.

As D'Souza and Rao (1995) remark "*in a mature product market, most marketing researchers would declare the role of advertising to be limited, especially if product attributes were integral to the brand choice process and preferences were well formed*". Since most markets are now mature, the incessant practice of advertising "*would be explained as resulting from competition, signalling and the creation of barriers to entry or justified in terms of reminder advertising*". Moreover, they continue, "*in many cases advertising may be working simply to maintain the status quo, and the only way to detect the impact of advertising would be to eliminate it entirely and see if sales decline*".

On these premises, this section briefly reviews the large amount of research concerning three main questions: A) the process through which advertising operates; B) the effect of previous experience with the brand vs. the effect of advertising alone; and C) the extent to which advertising does "manipulate" consumers and affects sales.

A) The Advertising Process.

Researchers usually agree that, at least for low-involvement products, consumers are not very much involved with advertising. "*Learning without involvement*" (Krugman, 1965) and "*memory without evaluation*" (Hawkins and Hoch, 1992) are two concepts commonly expressed in this stream of research.

Krugman (1965, 1967), for example, believes that for high involvement products involvement with advertising tends to be higher for magazines than for television, but is no different with low-involvement products. While the consumer is not thinking very deeply about the product or the brand when exposure to advertising occurs, the *repetition* of the message would shift his ways of perceiving products and brands.

Repetition of the message, by increasing the familiarity with the message itself, would also increase the truth ratings of advertising claims concerning the brand, by means of an "*it rings a*

bell" reaction (Hawkins and Hoch, 1992). Repetition of the message would also be particularly effective for "refutational" appeals directed to non-users of the brand (Sawyer, 1973).

The purchase situation would then act as " *the catalyst that reassembles or brings out all the potential for shifts in salience that have accumulated up to that point*" (Krugman, 1965). A real change in attitude would not occur until after purchase, not as a "rationalisation" process, but as an effect of the previously changed perception (Krugman, 1965; Fletcher 1987; and references later), or as a reassurance of doing the right thing (Brown et al., 1992).

Communication strategies would be more effective at changing the consumers' *perceptions* of brand attributes possession rather than the *values* consumers attach to attributes, according to Lutz (1975).

"*One surprising result*" to Aaker and Day (1974) "*was that the influence of advertising seems to go from awareness directly to behavior and does not operate through the attitude construct*". Their rather confusing study on the relationships among advertising, consumer awareness, attitudes and behaviour also found support for both the hypothesis that attitude change preceded behaviour change and for reverse effect. The latter, however, was relatively less "significant" in the aggregate.

For low-involvement products or when there is no or little information about the characteristics of each brand, consumers would make their choices on the basis of "*peripheral cues*", such as the endorsement of a famous person or the humour in the advertisement, rather than through a diligent evaluation process (Petty, Cacioppo and Schumann, 1983; Miniard, Sidershmukh and Innis, 1992). The concept of peripheral cues is consistent with person-perception and object-perception theories reviewed in Chapter 4.

According to Petty, Cacioppo and Schumann, after exposure to advertising attitude change would precede behaviour change for both low and high-involvement products, whereas Krugman (1965) had postulated that this would happen only for high involvement products and Ginter (1974) had found that attitudes change both before and after choice, although the attitude change following choice would be greater and more significantly correlated with the choice. For high involvement products the argument and information quality in the advertisement would be more important than "peripheral cues" in affecting consumer choice, since people would be more prone to carefully evaluate the merits of a product when involvement is high (Petty, Cacioppo and Schumann, 1983).

A similar kind of argument is advanced by Fletcher (1987), who claims that, in the instance of high involvement goods, mass media communication has the effect of increasing the salience of brands or their attributes. If a "hierarchy of effects" model of the kind devised by

Howard and Sheth is adopted for this kind of purchase situations, communication would make consumers move more quickly through the steps required in order to reach the purchase threshold.

B) Previous Experience versus Advertising.

An extensive stream of research has dealt with this issue, including recent studies by Deighton, Henderson and Neslin (1994) and by D'Souza and Rao (1995) who have investigated the "*framing*" versus the "*usage dominance*" effects of advertising.

Framing postulates an interaction between advertising and brand usage whereby advertising ascribes a meaning to the brand usage experience. If advertising precedes the experience, the framing effect is called "*predictive*", if it follows it is called "*diagnostic*". According to framing theory advertising can enhance repeat purchase probabilities by influencing what consumers learn from product usage experience.

The notion of diagnostic framing is consistent with Ehrenberg (1974), according to whom advertising could work to increase awareness, induce trial, or reinforce feelings of satisfaction for brands already been used (see Chapter 5). The latter effect would be the most important and only occasionally advertising would help to create new customers or extra sales.

The studies by Sawyer (1973) mentioned earlier and by Tellis (1988) (see below) yield results consistent with a diagnostic framing effect.

On the other hand, *usage dominance* occurs when advertising's effects can be negated by the consumer's personal experience in using the product. Hence advertising would have little or no effect on repeat purchasing since personal usage experience would dominate external information as an input into the brand choice decision.

This is consistent with Smith and Swinyard's (1983) view (see below) that higher order beliefs are more likely to be produced by experience than by advertising.

In their experiment involving preference for a hotel, D'Souza and Rao (1995) found support for the notion of reinforcement and framing. Their conclusion was that "*one of the roles of advertising in mature product categories is to maintain the accessibility of brand associations in the consumer product knowledge structure*". In this respect see also Brown et al. (1992).

On the other hand Deighton, Henderson and Neslin (1994) found a significant brand switching effect of current advertising and no repeat purchase effects of either current or lagged advertising for two out of three fmcg products. In particular, the consumers who had just purchased a brand had the same probability of repurchasing it whether or not they were

subsequently exposed to advertising. They interpreted the latter finding as suggestive of usage dominance rather than of diagnostic or predictive framing effects.

While they expected a switching effect, they considered the complete lack of repeat purchase effects "*a bit surprising in that there is strong conceptual as well as empirical evidence that positive framing effects can exist*". However, since they examined mature brands in mature categories, they state that "*it may not be surprising that usage appears to dominate advertising as an information source for purchase decisions in the future*".

Deighton et al.'s overall conclusion is that advertising works by attracting switchers, while it appears to do little to change the repeat purchase probabilities of those who have just purchased the brand.

While we agree that, especially in mature markets, usage experience, rather than advertising, is the dominant information source, we believe one should not interpret the lack of increase in purchase probability for the previously bought brand as a sign that the reinforcement effect of advertising is lacking.

Firstly, established models of buying behaviour such as the Dirichlet (see Chapter 5) work very well on the assumption that (at least in the medium term) consumers have stable propensities to buy a brand. Hence, the expectation that advertising should increase repeat-buying probabilities is unrealistic. Rather, in our view, we should interpret the framing reinforcement effect of advertising as maintaining such purchase probabilities, not just for the most frequently bought brand, but also for the other brands which may be purchased from time to time. Switching within a "repertoire" of brands is common practice (e.g. Ehrenberg, 1972, 1988; Bass, 1974) and advertising might help maintaining the brands within the consumer's repertoire by keeping them alive in memory. We believe that Ehrenberg (1974) should be interpreted in this way, and not in terms of increased probabilities of repeat-buying.

On these premises, the literature reviewed below could be positioned either within a framing or a usage dominance framework.

Involvement with and prior knowledge of the product category would influence the degree of advertising recall and evaluation, according to Okechuku (1992). Specifically, advertising evaluation would be affected more by the subjects' involvement with the product category than by their prior knowledge of it.

While the level of knowledge with the product category would not make any difference in the kind of information processing (central or peripheral), total advertising recall would appear "*to be more a function of subjects' prior knowledge about the product category than of their level of involvement with it, with the total recall increasing as the level of prior knowledge increased*".

This is consistent with earlier theories and research findings that once consumers buy a brand they become more sensitive to the brand's advertising, often as a means to reduce cognitive dissonance (e.g. Joyce, 1971a; Ehrlich, Guttman and Schönbach, 1957; Mills, Aronson and Robinson, 1959; Adams, 1961).

For example Joyce (1971a) hypothesises a mutual relationship between advertising and attitudes, and advertising and purchase behaviour, analogous to the two-way relationship between attitudes and behaviour which follows from Festinger's Dissonance Theory. Dissonance Theory states that in situations where attitudes and behaviour are dissonant, one or the other may change (see Chapter 3). Similarly, in Joyce's configuration not only advertising changes or reinforces attitudes by investing the product with favourable associations, but the impact of advertising on the consumer is very much affected by preconceived attitudes: both attention and perception are selective and this selectivity is affected by them.

A two-way relationship would also exist between advertising and purchasing. While advertising might be successful in persuading the consumer to buy a brand, by means of suggesting which brand to purchase, or by recalling it to the mind, once the purchase is made, the drive to reduce dissonance would heighten the attention to advertisements for that brand.

Favourable attitudes would lead to interest in the product being aroused when there is an opportunity to buy it or to a reinforcement of the purchasing habit. On the other hand, purchasing may influence attitudes, partly as straightforward reflection of product experience and partly because of the need to reduce dissonance and to justify one's choice with favourable attitudes.

There would be also two self-reinforcing loops: the tendency of attitudes to be consistent among themselves and the element of purchase habit, which is apparently unaffected by advertising or by attitude changes.

Although not empirically tested, Joyce's model and configuration follows from the review of empirical findings of other researchers and practitioners, and seem to make sense in the light of the theories of information processing reviewed in previous Chapters, and of what is known in buying behaviour about consistent purchasing patterns. We will partially pursue this issue in the analysis of our data.

However, the notion, derived from cognitive dissonance theory, that advertising would be noticed more than the buyers than by the non-buyers of the brand has found so far only limited support (e.g. Ehrlich et al., 1957 for the buying of cars). Outside the field of buying behaviour, Mills et al. (1959), and Adams (1961) have also shown that people would be selective in the kind of information they seek in order to reduce their dissonance.

Because of the methodological and conceptual limitations of the relevant studies Cummings and Venkatesan (1976) have remarked that "*it appears questionable that magnitude of dissonance has any effect on the consumer's information seeking behavior*". Rather, they believe that "*the manipulation of magnitude of dissonance can be expected to influence postpurchase attitude or behavior change.*"

For example, the idea that through post-purchase communication companies could reduce consumers' cognitive dissonance and therefore ensure customers loyalty is supported by Donnelly and Ivancevich (1970) and by Hunt (1970).

Tellis (1988) quotes a number of studies (e.g. McDonald, 1971; Raj, 1982; Sawyer, 1973; etc.) positively linking consumers' familiarity with the brand and loyalty with advertising effectiveness. In his own study he found the effect of ad exposure on volume purchased to be non linear and to be mediated by brand loyalty. Specifically, advertising seemed to reinforce preference for the currently bought brands rather than stimulate brand-switching. From these results Tellis infers that "*to the extent large brands have more loyal buyers, advertising works more to their advantage than to that of small share brands. Indeed the correlation between brand loyalty and brand share [...] is relatively very high (.44), lending support to such a hypothesis*".

On the subject of the impact of advertising versus the impact of experience with the product, Smith and Swinyard (1983) postulated that the acceptance of advertising claims would often be suppressed by consumer responses such as source derogation, counterarguing and discounting. Uncertain attitudes, rather than strongly held ones would be more likely to be generated by advertising claims. To reduce uncertainty, consumers may engage in trial behaviour including purchase (if the price or risk is low) or demonstrations (when the price or risk is high). Trial purchase would therefore be an information gathering technique and would not be preceded by much attitudinal development.

Direct product trial would generate high levels of message acceptance, because people rarely derogate themselves as sources. Strong (higher order) attitudinal development would arise from trial and would correlate with behavioural measures.

The strength of the attitude would then influence the type of subsequent behaviour. When the amount of attitudinal strength is of a lower order (i.e. is generated by advertising), consumers might or might not engage in trial (moderate consistency at trial level), but they will be unlikely to commit themselves to purchase (low consistency at commitment level). On the other hand, consumers with higher order positive affect should be ready to perform a low-risk behaviour such as trial, while those with negative attitudes will be less likely to do so (hence a high level of Attitude-Behaviour consistency at trial level). Attitude-Behaviour consistency at the commitment

level, however, should be moderate (most consumers with a strongly held attitude will not purchase, while not all consumers with a strongly held favourable attitude will).

Their model was validated in an experiment involving a new brand of a frequently purchased product (a snack food item).

The process by which trial produces higher order affect is consistent, in the two researchers' view, with the "primary affect" or emotional response described by Zajonc and Markus (1982). They also believe that the factors of clarity, persistence, accessibility, resistance and salience considered by Fazio and Zanna (1981) may also be involved in the process.

Smith and Swinyard therefore conclude that the attitude concept as predictor of behaviour has value when attitudes are originated from direct experience with the brand. They note, though, that the effect of previous direct experience might be dependent on the kind of product under analysis, since some products, like motor oil, might be less conducive to evaluation by trial. For products with similar characteristics to the one tested here, however, advertising does not seem likely to originate strong enough attitudes to influence committed purchase intentions, but, at best, only trial intentions.

Despite the consideration of the effect of direct experience on attitude formation, the main weakness of this paper is the insistence on the power of attitude to predict behaviour, even when the overall explanatory power of the relationship is, at best (i.e. when attitudes are formed after trial), still rather weak (r^2 = .36). It would be probably more effective to link future behaviour more directly with current and past experience, rather than through attitudes, however originated.

In contrast with the findings by Smith and Swinyard just reported, Wright and Lynch (1995) found that claims about "search" attributes (which can be learnt from secondhand sources, such as the ingredients of a product) were better recognized, and beliefs about "search" attributes were more accessible and more confidently held after exposure to ads in comparison with direct experience of two inexpensive packaged products. They also showed that "search" attributes were more frequently mentioned and were rated as more important after exposure to advertising than after direct experience. The opposite was found for "experience" attributes (which are a matter of subjective experience).

Finally, Givon and Horsky (1990) have found that purchase reinforcement dominates carryover of advertising in affecting the evolution of market share. However their methodology, namely the application of a first-order Markov model, is highly questionable, for the reasons expressed in Chapter 5.

C) Does Advertising Manipulate Consumers?

Does advertising manipulate consumers then, making them buy what they do not want, as the economic literature prevailing during the '50s had proclaimed?

Achenbaum (1972) believes not and that the concept of consumers as "automatons" in the hand of the advertisers is misleading, since individuals do not seem to be acting against their best interest. If consumers were totally manipulated by advertising, he argues, we should expect their attitudes towards brands to be stable, there would be no brand switching on the basis of attitude change, the attitudes held would not be deliberate, but random, and lower classes' behaviour would be consistently different from the upper classes.

On the contrary, Achenbaum continues, the evidence shows that advertising affects purchase behaviour only through attitudes, and through the involvement of other market elements, so that there is in fact no direct correlation between transmission of information through advertising and either attitudes and behaviour. Consumers know what they want and they will act upon an advertising communication only if persuaded.

To substantiate his claims, Achenbaum looked at attitudes and purchase behaviour over a six month period for 19 brands in seven packaged-good categories where advertising played a major role.

One of his most important findings was that, while at the aggregate level overall brand ratings were extremely stable from one period to the next, at the individual level about 50% of respondents had altered their opinion in between measurements. Although consumers who had bought the brand consistently through the six month period changed their attitudes less often than consumers who had been switching brands, there were always more changers than non-changers no matter what the usage.

The same pattern (stability at the aggregate and change at the individual level), applied to purchase behaviour, although at a lower rate, since usually purchasing is less frequent than exposure to those forces that affect attitudes[9].

The data in Achenbaum's study also indicated the existence of a correlation between attitudes and behaviour even at the dynamic level, whereby an increase in consumers' rating was linked to an increase in the proportion of respondents who remained users and vice-versa. If people had lowered their attitudes between the first two waves of the study, they were found to

[9] Apart from the context of advertising, these findings of stable aggregate responses and "volatile" individual ratings are relevant to much of our work and will be discussed in more detail in Chapter 9.

be less likely to be users in the third period and vice-versa. This was found to be true for users and non-users alike.

Achenbaum then showed the existence of causal correlation also in the direction from usage to attitudes, since users consistently rated the brand more highly than non-users.

Hence, he argued, advertising could not manipulate consumer behaviour, firstly because consumers are quite prone to change their feelings frequently and modify their behaviour accordingly, and secondly because product trial and experience in many highly advertised categories is high.

Finally, there did not seem to be any correlation between the amount of information recalled and either attitudes or usage, showing that consumers do not react to information alone.

Achenbaum's overall conclusion is that the effectiveness of communication relies on the product attributes that are salient to the consumers in order to change overall attitudes and subsequent behaviour. The more salient the attribute, the more correlated a change in attitude would be with the change in overall brand evaluation and the larger the effect on future brand share. What is salient to the consumers should therefore be catered for by the advertisers and there is no manipulation in this process.

However, there seem to be a few problems with Achenbaum's reasoning. In a marketplace where, in the majority of product fields, there is little difference among brands, an advertising message based on salient attributes of the *product* would benefit all brands at the same time. A second problem with the reference by advertisers to salient attributes is that different consumers might value the same attribute in different ways, and it is possible that the same attribute could be for some people an incentive to purchase the brand, while for others it could be a disincentive. What advertising should focus on is therefore a problem not solved by Achenbaum.

Despite the many strengths of his findings, Achenbaum's argument that advertising does not manipulate the consumer since individuals appear to change their overall evaluation of the brand quite often seems a little weak: one might argue just the reverse i.e. that the outcome of successful manipulative advertising would indeed be a constant change in attitudes to influence subsequent change in behaviour through brand switching. How these changes should be interpreted will be discussed in Chapter 9.

The same opinion that advertising does not persuade consumers is expressed by Verbeke (1992), although his argument derives from a completely different perspective, namely a "coupling" process between the behaviour of the trade and the behaviour of the consumer.

Verbeke believes that one of the most important effects of advertising is to make the brand more salient in the mind of the consumers. Increased saliency stimulates consumers to compare

the price of brands. This triggers intra-store competition, since retailers become careful about the price of the salient brand and lower it as a result. A lower retail price generates more sales, which in turn cause the trade to allocate more shelf-space to the brand. This will cause even more people to buy the brand.

A "virtuous" circle would then come into effect, whereby the trade uses well-known brands as traffic-builders or as instruments to promote the store, and these promotional activities also increase the saliency of the brand. As recognition for a brand is increased, consumers are likely to become more sensitive to communication campaigns for the brand. Then intra-store competition is generated (see above), sales increase, and the resultant profits allow the manufacturer to generate new communication campaigns.

Although this process seems logical, it is not empirically verified by Verbeke. Moreover, in a market where most leading brands are heavily advertised the "coupling" might not be so straightforward, since for the described system to work one of the brands will have to be privileged. For example, Verbeke does not specify if the trade will lower the price of the brand with the highest market share, or of the one with the highest margin, or just the one that seems to be advertised the most.

Highly empirical is instead the evidence reported by Brown and his associates, based on advertising tracking studies (Brown, 1985, 1988, 1991 and Brown et al., 1992). For established brands the main role of advertising would be to maintain the *salience* of the mental connections that constitute the brand. This would keep the brand at the top of the mind of the consumers, increase the "familiarity" with the brand when it is seen on the supermarket shelf, and act as a confirmation that buying the brand is the right thing to do. As a matter of fact tracking studies show that attitudes are very closely related to usage (see also Barwise and Ehrenberg, 1985; Castleberry and Ehrenberg, 1990), and hence attitude movements are closely related to sales movements.

On the other hand, sales (and attitudes towards a brand) appear to be directly influenced by advertising only if the message contains something new (e.g. a new feature of an established brand or a new brand altogether). However, even for new brands, these effects would be short-lived unless confirmed by the actual experience with the brand itself, since repeat-buying largely depends from the satisfaction generated by the brand.

The measures that tracking studies show as consistently responding to advertising are awareness of advertising claims and advertising memories associated with brands. Advertising awareness would be mainly an immediate indication of the quality of the ad. However, after the commercial is discontinued the advertising recall does not decay down to zero, but reaches a

"base" level which is a function of long term advertising recall. Brands with a long history of memorable advertising have high base levels and vice-versa. This does not seem to be related to brand size.

Brown's (and associates) conclusion is therefore "*that much of the time advertising must be about communicating things memorably to the consumers, which influences them later*" (i.e. when the brand is seen on the supermarket shelf or after it has been bought).

We now turn to purchase intentions.

6.3. PURCHASE INTENTIONS.

As Warshaw (1980a, 1980b) remarks, in most formal consumer behaviour models, such as the one designed by Howard and Sheth, purchase intent is seen as an intervening variable between attitudes and brand choice behaviour, implying that intentions outperform attitudes, beliefs or other cognitive measures as behavioural correlates.

Fishbein and Ajzen extended this correlation even further by elaborating a model which assumes that Behavioural Intention closely approximates to Behaviour (see Chapter 3).

Warshaw, however, notes that research aimed to test the applicability of the Fishbein and Ajzen configuration has often brought to light many inconsistencies about the correlation between Behavioural Intention (BI) and Behaviour (B). These inconsistencies are due mainly to:

(1) the correlation between BI and B depends on the time contiguity of the two measures and decreases with the length of the gap between measurements, mainly because of situational changes;

(2) Intentions are usually better predictors of behaviour for activities central to the individual's sphere of interest (unless we also relate them to previous brand experience);

(3) Purchase behaviour vary in a stochastic rather than deterministic way, i.e. it is not only a function of intentions, but it is also influenced by external components which vary across products, market segments, and individuals;

(4) The ability or the opportunity to carry out the intention might be lacking;

(5) The measures of Intention and Behaviour are often non-corresponding;

(6) The model is too general for purchase behaviour.

To the above points we should be adding that the Fishbein model does not seem to take into consideration the possibility of multi-brand buying.

Warshaw suggests that conditional purchase probabilities (i.e. conditional to the purchase of the product category in a particular situation) should be used instead of purchase intentions[10] (e.g. probability of buying a brand X of soft drinks, conditional to the probability of buying a soft drink at all from a vending machine between now and next Monday).

The wording of the Social Norm measure should also be changed, to avoid multicollinearity with the measurement of attitudes, since often Social Norms are internalised by the individual and expressed through his attitudes.

Tests of this revised model under experimental conditions, showed an improvement of this revised model on the original, both in terms of reducing the correlation between the measure of

[10]The use of purchase probability is in line with economic theory of buying behaviour.

social norm and the belief measure (from .495 to .299) and from the point of view of increasing the predictive power of the model (from an adjusted R^2 = .364 to R^2 = .506).

Still about 50% of the variance is, however, left unexplained in Warshaw's model.

Bagozzi (1981) believes that many failures to significantly relate attitude to behaviour may be partly due to the use of the wrong methodology in the measurement of attitudes. He also tests the impact of previous behaviour on the model. In his empirical study about blood donation he finds that multidimensional expectancy-value attitudes explain more variation in intentions that unidimensional semantic differential attitudes. However, both operationalization of attitudes are not found to provide much of a contribution to the explained variation in behaviour.

Bagozzi's explanation is dual. Firstly attitudes have only an indirect impact on behaviour through intentions, which, in turn relate to behaviour strongly only for periods no longer than a week. Secondly, when the extent of past behaviour is taken into account, the influence of attitudes (though still statistically significant) is reduced even further. The extent of past behaviour also tends to reduce the impact of intentions on behaviour.

This is consistent to what had been proposed, in the context of social psychology, by Triandis (1977) and Landis, Triandis, and Adamopoulos (1978) who had stated:

> *"The model assumes that a behavior that has never occurred in the history of the organism is under the control of behavioral intentions. As a particular behavior repeatedly occurs, the importance of the habit component increases; while that of the behavioral intention component decreases. Finally, for well established overlearned behavior, habit is a very powerful determinant of behavior".*

Triandis (1977) also maintained that "*the consequences of an act can serve as feedback, modifying the components that determine behavior. Thus, behavior can change attitudes.*"

Foxall (1984a) presents a critique of the Fishbein behavioural intentions model and related work on the predictability of behaviour through intention measures.

He thinks that marketing researchers seem to have, by and large, overlooked the limitations of the model recognised by Fishbein and Ajzen themselves. These limitations, he reckons, imply that "*the theory of reasoned action (...) can make only trivial contributions to the understanding and prediction of managerially-relevant aspects of consumer choice*".

The most limiting feature of the model is, according to Foxall, its highly situation-specific applicability, i.e. accurate prediction and strong correlations between BI and B are achievable only when the measures of both variables are corresponding in terms of the action, the target the context, and the time to which they refer (see Chapter 3).

In Foxall's view the requirement of time contiguity is the main reason for the model's inapplicability to new product testings, where the time between market test and actual launch is

long and many intervening factors are at play. Similar consideration would apply to existing products.

Although Foxall is right in pointing out the difficulties in applying Multi Attribute Models to brand choice behaviour, we believe that the issue of predictability should be seen in a wider context, which takes into consideration the stochastic, but, on the aggregate, steady state nature of repeat-buying behaviour. Chapter 9 will discuss such issue and the reader should refer to that point.

A further critique to the theories of reasoned action and planned behaviour is made by Bagozzi (1992), who labels them as "reductionistic" (many beliefs and evaluations are translated into a global, unidimensional attitude), and "noncontingent", since "*attitude, subjective norms and intentions are presumed to function in all contexts, and no conditions are specified within the theories to explain when the components do or do not apply*".

Instead Bagozzi advances the Theory of Self-Regulation, which operationalizes previous theories of attitudes by including specific motivational, social, and decision processes. While maintaining the attitude-intention, subjective norm-intention, and intention-behaviour relationships, Bagozzi postulates that a sequence of self-regulatory processes in the form of *appraisal processes* → *emotional reactions* → *coping responses* are required in order to define classes of contingencies for action. The specific appraisals (and the relative conations) are, in turn, supposed to be functions of unique generating conditions.

Specifically, with respect to attitude-intentions relationship, the theory postulates that self-regulation is accomplished through conative processes and emotional responses deriving from outcome-desire interactions of four kinds: conflict, fulfilment, avoidance, or pursuit. Appraisal of outcome-desire units arouse specific emotions, which in turn stimulate coping responses of intentions directed toward specific actions.

Cognitive and emotional self-regulatory processes are also supposed to direct the subjective-norm intentions relationship. This would take place through the integration of one's own and significant others' expectations and feelings with respect to shared moral and social meaning of a focal act.

Finally, decisions with regards to means, instrumental acts, motivation, and conditions specific to the actor or to the situation are proposed as determinant of the intention-behaviour relationship.

Bagozzi's Theory of Self-Regulation has the main advantage of contextualizing previous theories of the Attitude-Behaviour relationship, in line with the work of Foxall described in Chapter 5. However, the complexity of Bagozzi's theory poses the question of the

operationalisation of many of the variables in empirical work, since so far empirical support exists only for particular aspects of his approach. Furthermore, the model might still be too general to apply to consumer behaviour, especially when routine buying behaviour is concerned. On the other hand, Foxall's Behavioural Perspective Model had been developed around contingencies more attuned to describe different instances of consumer behaviour, from routine to more involving purchases.

A further model concerning the relationship between intentions and behaviour and the difficulty to predict behaviour from stated intentions was elaborated by Morrison (1979), who distinguishes among four stages: (i) Stated Intentions (I_s); (ii) True Intentions (I_t)(Stated Intention = True Intentions + Error); (iii) Unadjusted Purchase Probability[11] (p_u); (iv) Purchase Probability[12] (p).

It can be summarised as follows: at the individual level the Stated Intention is a random variable, with a mean at or near to the True Intention. At the individual level, Stated Intentions can be considered as following a Binomial Distribution with parameters n and I_t . Since true intentions vary across the population of respondents, the aggregate distribution of I_s will be a mixed binomial. However, all respondents have the same probability to switch to a new "true" (unobserved) purchase intent level after the survey[13]. The first n moments of the unobservable distribution $g(I_t)$ can be estimated from the first n moments of the observable distribution on I_s . An estimate of I_t from I_s can be obtained from this general mixture model, which takes the form of a beta binomial model.

From the above it is possible to derive the measures for the Unadjusted Purchase Probability and Purchase Probability. The former is the weighted average of the I_t model, since when a change occurs it is as if the individual was being replaced by a randomly chosen, new individual from a population with I_t distributed according to a beta distribution. Finally, the Purchase Probability is obtained by subtracting from p_u a bias element b, defined as the difference between the average stated intention and the proportion that actually purchase.

The fit of the model was then tested by Morrison on data for automobiles and household appliances.

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[11] Changes in circumstances may change the True Intention and the consequent purchase probability.

[12] The average stated purchase intention will often not equal the proportion that actually buy the product for all products and all time frames.

[13] Recently Bemmaor (1995) relaxed this assumption of homogeneity in switching probabilities to a new purchase intent level.

A few years later Kalwani and Silk (1982) applied Morrison's model to several sets of data including both durable goods and branded packaged goods. They found that, while the model was generally supported in the case of durable goods, for packaged goods it would apply only beyond a certain "threshold" level of intentions, below which stated intentions did not appear to be beta binomially distributed. Response style and judgement heuristics were suggested as likely explanations of the threshold effect.

Kalwani's and Silk's work underlines the difficulty in elaborating prediction models of general applicability to different kinds of product fields in different circumstances.

Further work on the predictive validity of intention was conducted by Morwitz (1992), by Morwitz and Schmittlein (1992).

Morwitz (1992) showed that, at the aggregate level, the distribution of when people intend to buy is predictive of short term purchase timing. For example, the proportion of respondents who intend to buy a durable such as a personal computer in time periods up to 24 months closely approximates the overall proportion of respondents who buy a personal computer in the same time period. However, the same does not hold for time periods longer than 24 months nor stated intent is predictive of the number of people who will or will not buy. At the individual level the stated time of intent is correlated with the average time until purchase, i.e. "0 to 6 months" intenders usually purchase sooner than the "7-12 month intenders" who buy. Nonetheless, the likelihood to ever buy does not differ for different groups of intenders, and in the long run, respondents stating that they "never intend to buy" are as likely to eventually buy as those who stated an intent to buy in the next six month.

However, Morwitz and Schmittlein (1992) declare that the accuracy of sales forecasts based on purchase intent can be improved by segmenting the respondents. Specifically, the same demographic/product usage characteristics that correlate with propensity to buy also correlate with propensity to fulfil the intent.

There seems to be a certain circularity in this argument, namely why bother measuring purchase intention to predict behaviour if we already know which respondents are most likely to purchase. Moreover, the two studies just reviewed refer to the purchase of a "high involving" *product category*: we would expect their limitations in predicting future behaviour to be even greater in the case of the purchase of a specific brand.

From a broader perspective, if the correlation between intentions and behaviour is low (as shown by most papers reviewed so far), and if intentions are, at best, predictive only of the time of purchase, what is the use of intention surveys, in particular as a guide for managers? Do these

models make a significant incremental contribution on top and above the judgement of market experts?

This is the question posed by Sewall (1981) in examining the relationship between aggregate intentions and relative sales within a product line of fashion products. His overall conclusion is that consumer data (including purchase intentions) can make a contribution to the judgement of an experienced product or brand manager especially post-hoc, namely to help the manager understand why past estimates erred. In Sewall's view "*using consumer data for diagnostic purposes rather than as a direct input to a forecasting model could be a more cost effective use of information*".

This is indeed the approach adopted by Bird and Ehrenberg (1966b, 1967) who, for frequently bought, non-durable consumer goods, describe the relationship between the percentage I of informants expressing an Intention to Buy a brand and the percentage U claiming current usage of the brand as:

$$I=K\sqrt{U}$$

where K is a constant that can vary by product field (between the limits of 5 and 15, but is generally around 10[14]), by country, by form of Usage question, by form of Intention question, but not otherwise. The fact that different forms of Intention and Usage questions only affect the size of K, but not the form of the relationship, are claimed to be proof of the general validity of the correlation between Intentions and current Usage.

The relationship applies to stationary markets, where, if the level of today's Intentions is supposed to be associated with the level of tomorrow's buying, it must necessarily be related to the current level, which will be identical to the future one. In stationary conditions, therefore, the relationship described above between Intentions and current usage level is supported by logic. In this instance, therefore, any attempt to utilize intentions in a predictive manner only reflects the current situation and nothing else.

Hence the diagnostic power of the relationship, since major deviation will be a reflection of something unusual going on.

The above equation was found to hold, within a mean deviation of 3 percentage points, under a varying range of empirical conditions (including product fields ranging from fmcg to voluntary chains of grocers). Discrepancies larger than 3% were attributed to either product-field

[14] For more extreme values of K, systematic deviations from the described relationship tend to occur. With values of K near 5, for example, the deviations from the relationship tend to be consistently positive for large brands and negative for smaller ones.

definition problems or to the particular form of the usage question employed[15]. We will be testing this relationship on our own data here (see Chapter 8).

Finally, on a more methodological note, Morwitz, Johnson, and Schmittlein (1993) find that, for a durable product such as a personal computer, asking about purchase intentions might increase the subsequent purchase rate of respondents with a high intent. On the other hand, repeated intention questions might reduce the propensity to buy of respondents with a low intent.

Since both effects appear to be mitigated by previous experience with the product, we question the applicability of these findings to purchasing a brand of a frequently purchased good.

In the next section we then review the literature concerned with the effect of current and past purchase behaviour on attitudes.

[15]The effects of wording the questions and of different types of measurements of attitudes, intentions, and behaviour will be dealt with in the methodology section.

6.4. PREVIOUS BRAND USAGE.

As seen in previous Chapters concerning the theories of attitude formation and change, and when describing general models of consumer behaviour, "cognitive" researchers have sought to establish consistency between attitudes and behaviour in terms of the ability to "predict" future brand choice from present attitudes. The development of Multi-Attribute Attitude Models, as the one designed by Fishbein in 1963, have been pivotal to the development of this stream of research (see Chapter 3).

Because of this emphasis on prediction, many of the studies reviewed so far have been experiments on the effects of advertising, brand awareness and, more generally, attitudes and purchase intentions either on the choice of fictitious brands, or in the context of a single purchasing act. Previous experience and formed attitudes have been taken into account only by few researchers (e.g. Bagozzi, 1981; and Bird and Ehrenberg, 1966b).

Studies which have began to consider the effect of repeated choice behaviour on attitude formation, have been again experiments involving new brands. For example, the papers by Ginter (1974), Smith and Swinyard (1983), and Hoyer and Brown (1990) reviewed in previous Chapters are all concerned with the effect of repeated usage on the development of attitudes toward new brands.

Few studies have, however, dealt with the relationship between current brand usage (in terms of purchase recency and frequency) and attitudes. We previously reported Bogart and Lehmann (1973) as linking brand awareness with purchase frequency, and Achenbaum (1972) as observing both a lower degree of individual opinion change for consistent users of a brand, and higher ratings of the brand by users than by non users. Haley and Case (1979) very significantly observe correspondence between brand shares and attitudes (see the Methodology Chapter for a review of their work). Previous purchase, use, or experience have also been found to be a dominant factor in choice behaviour, so that, for example, larger price differences are necessary to shift brand preference (Monroe, 1976). In a different context (i.e. attitude towards participating in psychological research) previous direct experience is found by Fazio and Zanna (1978) as being significantly related with attitude-behaviour consistency.

Cohen and Houston (1972) have examined the effects of repeated brand choice on attitude formation, in the light of cognitive dissonance theory.

They hypothesize that a consumer receiving the expected amount of satisfaction from a brand would see little incentive in switching to another brand. Dissatisfaction, on the other hand, would increase the value of additional learning. However, if the expected value of additional

learning is low and/or the chosen brand offers reasonable satisfaction, the consumer would tend to evaluate the chosen brand more favourably than the unchosen one, and would change the act of buying from a problem solving decision to one of habit, gaining therefore extra time for other more important decisions.

Instead than on a pre-choice information gathering activity, the consumer would rely on a post-choice cognitive process of brand re-evaluation, which would involve mainly the dominant product attributes, and would be extended to less salient attributes only later, and over a gradient corresponding to either their relative importance or their interconnectedness. Only when conflictual evidence over the dominant attributes exists, less salient ones would be specifically re-evaluated.

Their hypothesis was empirically tested for different brands of toothpaste. For example, results showed that people who purchased one of two brands "most of the times" perceived that brand as superior in terms of the most important attribute (i.e. decay/cavity prevention), while the respondents who were not purchasers of either brand saw virtually no difference between the two. The same applied to other attributes (taste, breath freshness, appearance and witness) which were rated by the regular purchasers of one or the other in the direction that would justify their choice. Even "low price" (a less subjective attribute) followed this pattern, although to a lesser degree.

Cohen and Houston concluded that, whenever the incremental value of objective product evaluation is low, as in the case where there is little difference between alternatives, a routinized decision justification process would not be more irrational than a pre-choice processing of the available information.

In investigating the applicability of Fishbein's model to a brand evaluation and choice context, an experimental study by Bass, Pessemier, and Lehmann (1972) is of particular interest in as far it links attitudes with the relative frequency of choice of brands and with the nature of brand switching.

The authors distinguish between a deterministic and a stochastic application of the Fishbein model to the prediction of brand preference.

In a deterministic application, the rank order of a consumer's attitudes toward the brands would predict the rank order of the brand preferences. This interpretation implies that the consumer would choose his/her most preferred brand, and changes in choice would be necessarily associated with changes in attitudes.

In the instance of a stochastic interpretation, however, a consumer's attitude toward the brand would govern the *probability* of his choice of that brand. Attitudes would then be related to the relative frequency of choice and brand switching mechanism.

An experiment involving buying of eight brands of soft drinks was used to test the two applications on a variation of the Fishbein model involving the calculation of the distance of each brand from an ideal point. The first finding of interest is the overall stability of the mean distances from the ideal point over four interview waves one week apart.

The test of the deterministic application involved comparing the brands' preference rank order predicted by the Fishbein model with the actual rank order. The most and the least preferred brands were the ones with the highest percentages of successful rank order predictions, amounting to 62.5% and 52.7% respectively. Bass et al. consider these to be "fairly good predictions" of the preference order for brands, although for mid-ranking brands the percentages reach a low of 24%!

The authors however recognise the greater difficulty in predicting actual choice of the most preferred brand for both the derived preferences obtained from the model (about 40% accurate predictions) and for the stated preferences (50% correct).

Bass et al. explain this difficulty in stochastic terms, whereby although the probability of choosing the most preferred brand is greatest, there is a random (stochastic) component of choice which arises because of variety seeking (only a small fraction of subjects confine their choice to a single brand). Since the switching to a brand other than the favourite one arises at random intervals, it is very difficult to predict.

Because no marked changes in attitudes were found between interviewing waves, the authors conclude that brand switching is "*a more or less normal behaviour pattern*". Finally, from the finding that switching to similar brands was predominant, Bass et al. inferred that choice is influenced by attitudes which derive from beliefs and values for product specific attributes.

Their final conclusion was that attitude-based prediction of choice must be probabilistic, since individual choice behaviour is not constant even when attitudes are unchanging.

Despite the tendency to still insist on the prediction element of attitudes, this paper marks a substantial shift in emphasis toward the consideration of the reality of repeat-buying behaviour and of multi-brand purchase activity. As stated Chapter 2, this approach is emerging as one of the key elements for the correct interpretation of attitudinal measures.

A shift in emphasis from a predictive to a diagnostic approach to the study of the relationship between attitudes and usage is one of the main features of the studies reviewed below.

Bird and Ehrenberg (1970) criticised previous attitude research for too much concern with the definition of attitude measures rather than systematic analysis of the subsequent results, and for the widespread tendency to interpret cross-sectional data in dynamic, predictive terms.

Because of the lack of longitudinal data from which to infer the relation between change in attitude and change in behaviour, in this and in subsequent studies Bird and Ehrenberg

examined the question of what determines the differing proportions of consumers stating a belief for various brands.

Their findings (along with the findings of a paper by Bird, Channon and Ehrenberg, 1970) are summarised by Ehrenberg and Goodhardt (1980) as follows (with examples taken from a London Business School database):

(a) the percentage of respondents claiming a brand possesses a given attribute is correlated with the percentage of people buying the brand regularly, but there are some major exceptions to the pattern. This is exemplified in Table 6.2. below, for Breakfast Cereals in the UK in 1973.

TABLE 6.2.
Attitudinal Beliefs and Usage Level

Brands in market share order	Buy Regularly	Tastes Nice	Fun for children to eat
	%	%	%
Corn Flakes	47	64	17
Weetabix	29	40	12
Rice Krispies	12	34	57
Shredded Wheat	12	23	5
Frosties	10	22	43
Sugar Puffs	9	29	50
All Bran	8	11	0
Special K	7	17	5

Source: LBS

Attributes that behave like "Tastes Nice" above, mostly reflect whether consumers like the brand. Frequently bought brands have higher scores than infrequently bought brands not only on one particular attribute, but generally on all. Such attitude measures are defined by Bird and Ehrenberg (1970) as "evaluative". Subsequent research (Castleberry and Ehrenberg, 1990) showed high correlations (usually .7 or higher) between buying frequency and attitudinal responses for this kind of attributes.

On the other hand, attributes that behave like "Fun for children to eat" relate to some special features of a specific brand or sub-groups of brands (for example that Frosties and Sugar Puffs are children's brands, while All Bran and Special K are not), or to a particularly effective advertising message. For these attributes, the correlations with buying frequency is either very low (e.g. less than .4) or even negative (Castleberry and Ehrenberg, 1990)[16].

[16] Few attributes have correlations falling in between .4 and .6, according to Castleberry and Ehrenberg (1990).

(b) The explanation of the main pattern described above is that consumers' attitudinal responses differ markedly by whether or not they use the brand (or more generically by their recency or frequency of use), as exemplified in Table 6.3. below, again for Breakfast Cereals in the UK.

TABLE 6.3.
Attitudes amongst Users and Non-Users

Brands in market share order	Tastes Nice		Fun for children to eat	
	"Users"	"Non Users"	"Users"	"Non Users"
	%	%	%	%
Corn Flakes	77	55	21	14
Weetabix	67	30	20	9
Rice Krispies	65	30	76	55
Shredded Wheat	77	16	14	4
Frosties	62	18	74	40
Sugar Puffs	68	25	68	48
All Bran	52	8	0	0
Special K	64	13	9	5
Average	67	24	35	22

NOTE: "Users" are defined as "Use Brand Regularly"
Source: LBS

Again the difference between two kinds of attributes is shown. For mainly "evaluative" attributes (e.g. "Tastes nice") the users' scores are considerably higher than those for non-users. The pattern is much the same from brand to brand and the average scores differ substantially (67% for Users and 24% for Non-Users). This kind of attribute seems to be associated with general characteristics of the product category.

Where a mainly "descriptive" characteristic of a brand is being assessed, however, the gradient between regular users of the brand and the non regular users is less steep (for the average brand of cereals in the table above is from 35% to 22%).

Further research has also shown that, for "evaluative" and, to a lesser extent, for "descriptive" beliefs there is also a gradient for various degrees of usage frequencies, from "once a month or more often", to "every 3, 6, or 12 months", "less than once a year", and "never" (Barwise and Ehrenberg, 1985; Castleberry and Ehrenberg, 1990). The results illustrated in Table 6.1. are therefore even better explained by this downward gradient with frequency and recency of purchase. Large brands have a greater percentage of frequent and recent users than small brands, and a higher proportion of these frequent users tend to express their attitudes towards the brand (Barnard, Barwise and Ehrenberg, 1989; Ehrenberg, Goodhardt, and Barwise, 1990).

The patterns illustrated above have been replicated and generalized to various product categories (including TV Programmes), in different countries (UK and US), in different years (Ehrenberg and Goodhardt, 1981; Barwise and Ehrenberg, 1985; Barwise and Ehrenberg, 1988; and Castleberry and Ehrenberg, 1990).

Barwise and Ehrenberg (1985) and Castleberry and Ehrenberg (1990) observe that this relationship between attitudes and usage is very rarely acknowledged by both academics and practitioners. This is, in their view, the major cause for the often simplistic claims of attitudes' being precursors of behaviour.

However, in terms of causality, neither the level of "evaluative" nor of "descriptive" beliefs can explain why consumers buy or use a brand. Whilst the level of "evaluative" beliefs seems to be mainly a "halo effect" of present and past usage of the brand, "descriptive" beliefs, which are more closely related to specific characteristics of the different brands, could equally be the reason for buying as the motivation for not buying (Barwise and Ehrenberg, 1985).

This is in contrast with the attempt by other researchers (e.g. Myers and Alpert, 1968; Alpert, 1971; Woodside and Trappey, 1992; Armacost and Hosseini, 1994) to identify the "determinant" attributes for brand choice, without due consideration to the relative buying frequency and recency of each brand (and ultimately their market shares).

Rossiter (1987) criticised the distinction between "evaluative" and "descriptive" beliefs made above by Ehrenberg and associates, which he called: *"a post hoc theorisation"*. According to him there would be *"patent circularity in theoretically defining types of beliefs based on the data rather than defining them independently"*.

Barwise and Ehrenberg (1987) replied that a priori definition of "evaluative" and "descriptive" consumers beliefs (related to their relationship with usage) had been given in the late 1960's by Michael Bird. In practice the application of a kind of "regression diagnostic" would seem to be legitimate, where very systematic correlations between the measures of usage and beliefs and some large deviations are proof of what had been hypothesised by Bird. Moreover, since these patterns had consistently emerged over the past twenty years, it was no longer possible to speak of "post-hoc theorisation".

Other criticisms by Rossiter of the work described above included the use of cross-sectional rather than longitudinal data, and aggregate measures (or at least the averaging of individual measures). Barwise and Ehrenberg noted that, while their paper did not aim to explain any sort of causality, the consistency of the findings across brands and the steep gradient for some attributes between users and non-users should be a convincing enough evidence of the reliability of the data.

A further, major finding concerning attitudinal responses and their relationship with brand usage is the occurrence of the phenomenon of Double Jeopardy (McPhee, 1963): within the usage categories for each brand (e.g. the "once a month or more often" buyers), there is a downward trend of attitudinal responses with usership level (or market share). Hence attitudinal responses for a brand with few frequent buyers (e.g. "once a month or more often" buyers) tend to be lower, *among* its few frequent buyers, than the attitudinal responses among the many buyers of a large brand (Barwise and Ehrenberg, 1985; and Ehrenberg, Goodhardt, and Barwise, 1990).

Double Jeopardy is found to occur for the more "evaluative" attributes such as "Tastes Nice" in Table 6.1., whereas for attributes such as "Fun for Children to Eat" there are major exceptions, corresponding to the highly brand-specific factors. Double Jeopardy effects apply not only to a wide range of fast moving consumer goods (Barwise and Ehrenberg, 1985; Castleberry and Ehrenberg, 1990), but also to Television Programmes, with the only exception of the more "demanding" types of programmes (Barwise and Ehrenberg, 1988). This might be explained partially as a "status reaction" (Ehrenberg and Goodhardt, 1981).

These results concerning the occurrence of Double Jeopardy not only in Buying Behaviour (see Chapter 5), but also for attitudinal responses is at the basis of the "statistical" orientation of our work that was discussed earlier on in the thesis. The study of the phenomenon of Double Jeopardy is therefore a very important part of our empirical analysis, and specific examples will be given then.

Finally, the finding that the Double Jeopardy pattern seems less marked with forced-choice than with free-choice questioning (Barnard and Ehrenberg, 1990), is in line with the statistical selection procedure which makes its occurrence possible (see Chapter 4).

This concludes the review of the most important pieces of work concerning the consistency between attitudes and behaviour, except for those studying the attitudes of the same individuals over time which will be reviewed and compared to our own findings in Chapter 9.

Before describing the methodology for our work and dealing with the issue of measuring attitudes (see Chapter 7), we end our review of literature with a few summary remarks.

6.5. SUMMARY REMARKS

In Chapter 2 we remarked that theories developed in psychology and in sociology have been popular among consumer behaviour researchers seeking to determine the process by which consumers make their purchasing decisions.

Often, however, such general theories of attitude formation and change (see Chapter 3), which had been developed for complex and/or highly involving social or psychological issues, have failed to generalize not only to routine brand choice situations, but also to instances of first purchase of more involving products.

One general problem with such theories has been their uncompromising cognitivism, whereby consumers are supposed to evaluate the advantages and disadvantages of all alternatives before making even simple choices. Consideration for the influence of external variables and of previous experience has been largely lacking, with an emphasis instead on trying to predict future behaviour and changes in it.

However, the review of research in the previous pages should have highlighted the difficulties in predicting the buying behaviour of individual consumers from measures of their attitudes or their stated purchase intentions. This mainly because of the unpredictable influence of external (e.g. out of stock situation) or internal (e.g. I fancy something different today) factors which make the occurrence of individual purchases of a brand instead of another "as if" random.

On the other hand, as also evident from the review of the literature in Chapters 5 and 6, the influence and the reinforcement of previous usage has yielded more and more consistent empirical results.

Hence it seems appropriate a shift in emphasis from a deterministic and predictive Attitudes → Behaviour causality to a "stochastic" and diagnostic Behaviour/Experience → Post hoc Evaluation, whereby the "as if random" exposure to a stimulus (i.e. a purchase) and the ratio at which reinforcement is provided influence and increase the affective response towards it.

This shift from prediction to diagnostic also implies that it is first necessary to understand the consistent patterns (and deviations) between usage and attitudes, before it will be possible to explain them and predict if they might occur again.

This is very much the emphasis adopted in our data analysis (see Chapters 8 to 11), which aims to establish, understand and explain consistent relationships between the usage of the brand and attitudinal results. If we are successful in establishing generalizable patterns and in explaining why they occur, we might be better able to predict if and when the same patterns will arise again in similar kinds of data.

PART II: METHODOLOGY

Chapter 7: METHODOLOGY

CHAPTER 7: METHODOLOGY

7.1.: The Data

- 7.1.1. Subjects
- 7.1.2. Test Products
- 7.1.3. Variables

7.2. The Importance of Replication for Building Marketing Theories

7.3. Questionnaire Biases

- 7.3.1. Biases Originating from Questions Concerning Attitudes
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7. METHODOLOGY.

In this Chapter first we describe the data used in our research (Section 7.1. and its sub-sections), then we discuss relevant methodological issues (Sections 7.2 to 7.3.)

7.1. THE DATA.

As mentioned in the Introduction to the thesis, two main sets of behavioural and attitudinal data were available for this research, collected through interviews of some 200 consumers in the US and 500 consumers in the UK. In each country the respondents were interviewed twice.

Although our thesis work has been primarily on the US database, we will often refer to the results (mainly unpublished) that a group of researchers at the London Business School, led by Professor Ehrenberg, had obtained from the British data. They will be used as a comparison and as a bench-mark for our own results.

In this section we describe both sets of data, although a more detailed account of the American database is given. Where no distinction is made between the two data sets, the format is exactly the same.

7.1.1. Subjects.

The American sample was drawn from selected neighbourhoods in Athens County, Georgia, avoiding depressed areas and apartment complexes. 461 consumers were first interviewed at their homes in June 1986, and 219 were successfully re-interviewed about 18 months later. Students of the University of Georgia were employed in the administration of questionnaires, trained and supervised by Professor Stephen Castleberry of the University of Georgia (now at the University of Minnesota). In this work we report results only for those subjects who were interviewed twice. The result of checks on attrition between the two interviews will be described in Chapter 9.

The British sample was selected by the British Market Research Bureau among the universe of 25 to 59-year-old housewives who claimed to buy at least three of the five selected

product categories and who were on the telephone. Four matched sub-samples from different locations throughout Great Britain were selected in 1984, totalling 784 respondents. They were re-interviewed after 1, 3, 6, and 12 months, respectively, for a total of 527 respondents (67% of the initial number). Checks on the respondents who were interviewed only once showed no marked effects of attrition.

The British sample was therefore not only broader in scope, but also had been selected and interviewed by professional market researchers.

7.1.2. Test Products.

In the US, data were collected for two frequently purchased product categories (Breakfast Cereals and Laundry Detergents), and for two services: Fast Food Restaurant Chains and TV News. The latter were chosen to extend the scope of the research beyond frequently purchased goods, including a field (non-cable TV) where usage did not require any immediate and direct expenditure.

The brands of Breakfast Cereals (11) and Laundry Detergents (10) used in the US study consisted of leading and minor brands as reported by Simmons Market Research Bureau. Individual Fast Food Restaurant Chains were chosen because each sold hamburgers (possibly in addition to other menu items). National chains (Burger King, Hardees, McDonalds, Wendys), regional chains (Dairy Queen, D-'Lites, Krystal), and a strong local chain (The Varsity of Athens) were included. Finally, TV News Programmes were chosen to comprise: three major local nightly news shows (Channel 2 Action News, TV 5 Eyewitness News, 11 Alive News), three major national network nightly news shows (ABC World News Tonight, CBS Evening News, NBC Nightly News), the Public Television Network nightly news (The MacNeil-Lehrer News Hour), and two of the most popular national network weekly news "magazines" (60 minutes, 20/20).

Breakfast Cereals and Laundry Detergents plus Toothpastes, Canned Soups, and Carbonated Soft Drinks were analyzed in the UK. Eight to ten brands (large, medium and small) in each product category were covered.

7.1.3. Variables.

In both countries a (mainly) free-choice, associative questionnaire (see below) was employed for collecting the data, as originally used by the British Market Research Bureau in their Advertising Planning Index. This is method is also widely used in tracking studies (e.g. Brown, 1985).

In the US the questionnaire was pretested on representative households and subsequently revised and shortened. The format of the questionnaire and the range of questions asked were kept unchanged at each interview and were essentially the same in the two countries (see below). A copy of the US questionnaire is enclosed under Appendix A.

Prior to the main stages of the survey, a small scale pilot exercise was undertaken in the UK to develop the first draft of the questionnaire and to test it for content and length. The pilot was done in the London area by two BMRB interviewers, each accompanied by a BMRB executive. At the end of this pilot phase, the questionnaire was redrafted in conjunction with the London Business School.

In the UK a split run experiment was also conducted on the form of introduction of the re-interview, which in all other respects was identical to the initial phase. Half of the re-interviews within each sample were introduced to the respondent as being the same as the initial interview, but for the other half no indication of the identical nature of the interview was given. This was not found to influence response rates.

In both countries the questioning was free-choice for Beliefs (a set of about eleven or so attributes for each brand within the product category - hereafter called "Attribute Beliefs"), Likelihood to Buy, and Advertising Recall, and forced-choice for Buying Recency and Frequency, after a free-choice filter question concerning the brands ever bought. Comparison with forced-choice questioning for Attribute Beliefs in the UK had shown broadly similar results (Barnard and Ehrenberg, 1990).

Respondents were questioned about one product field at a time.

Claimed Purchase Behaviour.

First respondents were questioned about the recency of the last purchase of the product category as a whole, with seven possible responses ranging from "In the last 7 days" to "More than a year ago" (plus "Don't Know"). The British questionnaire included a recency question also for each brand.

The frequency of purchase of the product category as a whole and of each brand was then assessed through the forced-choice question "And from this card how often do you buy [brand x,y,z,...] nowadays?". The possible responses were: (1) "Once a week or more often", (2) "About every other week", (3) About once a month", (4) About once every 3 months, (5) About once every 6 months", (6) "Only about once a year", (7) "Less than once a year", (8) "Don't Know". Non respondents to this question were coded as a 9th "Never Buyers" category.

A filter question, where respondents were asked to indicate, out of the list of brands involved in the survey, which one they had ever bought, preceded all questions concerning the brands.

The buying behaviour variables used in this study are therefore for *claimed* purchase recency or frequency, rather than *actual* specific purchases (as recorded through Diaries or Scanners or similar means). Issues concerning the use of reported versus recorded buying behaviour will be discussed in Section 7.4..

Purchase Intentions, Attribute Beliefs, and Advertising Recall.

Respondents were then presented with the list of brands in each product category and asked to indicate which one(s) they were likely to buy in the future, then which one(s) they believed were characterized by each of the eleven or so attributes read out by the interviewer, and finally which brands they could remember seeing advertising for on Television in the last three months.

For example, for Breakfast Cereals the questioning was: "Which of the brands on this list do you think would... - 'taste nice', - 'be good value for money'", etc., and for Fast Food Restaurant Chains "Which of the fast food restaurants on this list do you think would... - 'have quick service', - 'appeal to children'", etc.. Respondents were asked to give their impressions on brands they had tried and also on brands they had just heard about. For each attribute, they were free to list as many or as few brands they wanted, including none at all. Therefore the questioning was done attribute by attribute (for all brands). The full list of attributes for each product category in the US can be seen in Appendix A (question 6 of the questionnaire for each product field).

The criteria followed by Castleberry in the US for the selection of the attributes to be included in the research are reported below (as per his own notes).

The attributes were chosen by asking University of Georgia students and faculty "judges" to list what they thought were important attributes for each product category. Then,

manufacturers, distributors and providers of the products and services chosen were asked to supply lists of attributes for their own product category that they had studied in private research. Finally, attributes used in prior academic research (e.g. Barwise and Ehrenberg, 1985) were added to the pool of attributes to consider. From this list, attributes were chosen that seemed important to consumers deciding whether or not to use the product or service with an attempt to include both seemingly "descriptive" and "evaluative" attributes (see Castleberry and Ehrenberg, 1990 and Chapter 8 here).

The list of attributes for Breakfast Cereals and Laundry Detergents turned out to be substantially the same ones which had been selected in the UK on the basis of previous research conducted by the London Business School in these two product fields. Leading manufacturers in each of the five fast-moving consumer goods markets considered in the UK were also consulted; these manufacturers were able to provide a list of the relevant dimensions for each market.

This process led to the selection of 11 or so attributes for each product field in either country.

The concept of attitudinal beliefs about brand attributes follows Joyce's (1971a) definition of attitudes which was discussed in previous chapters, whereby a clear distinction is made between the concept of "attitude" and the concept of "purchase intention" or "purchase propensity", which are therefore analyzed as completely separate variables.

East (1990) criticised the BMRB method of selecting and measuring attributes used by Ehrenberg and his associates mainly on three accounts: (i) attributes with negative connotations are excluded from the list, while they could be important for determining the reasons for choosing or not choosing a brand; (ii) the distinction between "evaluative" and "descriptive" attributes is often ambiguous; and (iii) a yes/no choice is a too crude measure, since it does not leave any room for the degree to which the attribute is thought to be possessed by the brand and for the overall evaluation of the importance attached by the consumer to the particular attribute.

He believes that a scale measure of the kind used in the application of Fishbein's theory of attitude would be more appropriate to discriminate among brands.

Negative attributes were purposefully not included, since previous research (e.g. Barwise, 1985) had shown that response rates for this kind of attributes tend to be lower (a politeness bias?), and therefore they do not help very much towards the end of discriminating among brands.

The criticism concerning the exclusion of explicit ratings and evaluation of the attribute does not take into consideration the fact that results show a clear difference (for "evaluative" attributes) between responses by "Users" (with a gradient for different frequencies) and by "Non-

Users", which, per se, already implies a certain degree of evaluation of the brand/attribute combination (see Sub-section 7.3.2. for previous research concerning free-choice questions).

Moreover, as East himself notes, the application of Fishbein's theory would not be of much use in the case of little perceived difference between brands, as it is certainly the case for Laundry Detergents.

Finally, the issue of discrimination between "evaluative" and "descriptive" attributes will be dealt with in Chapter 8.

Respondents were also asked: "Which [of these] brands can you remember seeing advertising for on TV in the last 3 months?". This question is similar to the one commonly used in tracking studies (e.g. Brown, 1988) which reads "Which of these brands have you seen advertised recently?".

According to Brown the question "*measures the strength of brand advertising associations*", but "*the number who claim to have seen a brand advertised 'recently' depends on historic advertising as well as the current campaign*". The substitution of "in the last 3 months" for "recently" might help the consumers focus on recent advertising, although this is not the main aim of our measure, since, unlike tracking studies, our goal here is not to measure the effect of particular campaigns on sales.

For each of the four variables just described, data were analyzed across brands, beliefs about attributes, and products. The approach was analytic in the sense of aiming to explore associations between variables and then seeking to explain the relationships.

Firstly, however, we are going to describe and discuss the main issues concerned with the methodology adopted in the analysis of the data. Since part of our study is a replication with extension (to a different country and to services) of previous British results on fast moving consumer goods (see Bird and Ehrenberg, 1966 and 1970; Barwise and Ehrenberg, 1985; Barnard et al., 1986; Barnard and Ehrenberg, 1990) in Section 7.2. we will discuss the usefulness of replication studies on many sets of data for theory building in marketing.

Then, in Section 7.3. we will deal with specific issues connected with the choice of measurement scales and with the use of self-reported purchase data. The potential problems of attrition and conditioning in re-interview studies will be discussed in Chapter 9.

7.2. THE IMPORTANCE OF REPLICATION FOR BUILDING MARKETING THEORIES.

Popper (1968) argued that guesses or hypotheses are intrinsic to the nature of theories. What makes a "good" theory is therefore its empirically observable base, its ability to explain a large set of events and, most important, the fact that it can be disproved or *falsified.*

Empirical replication under varied conditions should therefore be at the base of any good marketing theory, as it is in physics and other "natural sciences", where results must be proven to be repeatable before they can be accepted as science.

The need to know *what* behaviours people perform before explaining *why* they perform them is stressed by several authors, including Peter (1981) and Jacoby (1978). They both remark that many theories concerning information processing and decision making have been developed with little attention to the real processes behind consumer behaviour (see also Olshavsky and Granbois, 1979).

Jacoby (1978) also criticises what he calls "a shot-gun approach to theory" instead of pursuing a sequential and integrated investigation on the same issue, a procedure that would yield a greater contribution of substance. Too often, he reckons, conclusions are accepted on the basis of a single measure of a dependent or criterion variable, rather than establishing the credibility of the result by the use of multiple measures of the same variables, and by examining the interactions with other variables. The same kind of criticism had been put forward by Engel, Kollat and Blackwell (1968), regarding what they defined as a "Bewildering array of definitions" in the marketing literature, since every author tends to rely on his own definition of a construct, rather than trying to integrate results of different studies by the use of common definitions.

Jacoby's conclusion is that in marketing there is a strong necessity to establish confidence in our findings, also through replication over different subject populations, test products, etc.. He also regards convergent validity as the basis for comparing and generalising findings across different studies.

Despite an apparent shift in editorial policies towards greater appreciation of replication research (e.g. Monroe, 1991; 1992a and 1992b), the situation does not seem to have changed much since Hubbard and Amstrong (1993) reported that only 1.8% of papers published in the major marketing journals between 1974 and 1989 was of the "replication" or "replication with extension" kind.

Most research in marketing still appears to be based on the strict application of statistical techniques to a Single Set of Data. This, however, only gives an ad hoc predictor (i.e. a best fit over one set of data), but not necessarily one that can be generalized (i.e. a good fit over different

conditions)[17]. New "theories", rather than confirmation of existing ones through replication, are generated on a regular basis.

Furthermore, results from these uncorroborated single studies are often accepted as "norms" in marketing books, although they might, in reality, be incorrect. This might be one of the reasons why a recent investigation by Amstrong (1991) showed how researchers familiar with consumer behaviour theories could not make more accurate predictions about phenomena in this field than naive subjects.

On the other hand replication is fundamental in making an outcome predictable, since, in order to achieve predictability, the same model has to hold despite differences in a wide range of conditions. Furthermore, a relationship becomes predictable when not only the rule, but the *exceptions* as well can be predicted. This is possible only through the analysis of many sets of data. Theoretical explanations then follow, adding confidence to the predictability of the result, and in as far they are linked to other results which are themselves already empirically well-grounded (Ehrenberg and Bound, 1993).

This was the rationale for basing part of this thesis on replicating and extending previous research, especially on the subject of attitudinal measures over time (Barnard et al., 1986) where very little was known or understood and theoretical explanations clashed (see Chapter 9).

In practice we undertook a differentiated replication, namely while still investigating the relationship between attitudinal and behavioural measures at one and at subsequent points in time, we changed the conditions concerning: (i) the population sample (American versus British); (ii) the criteria for its selection (see Sub-section 7.1.1); (iii) the interviewers' training (professional interviewers in the UK versus trained students in the US); (iv) the time-lag between interviews (18 months, rather than several lags up to 12 months); (v) the kind of products (two services and two fast moving consumer goods instead of all frequently purchased goods); and (vi) the time of the interviews (1986 through 1988 in the US versus 1984 through 1985 in the UK).

We thought that two of the conditions changed (i.e. services and the longer time-lag between interviews) could possibly affect the results. On the other hand, we did not expected any of the other conditions (with the possible exception of some "learning" having occurred in the US) to have any substantial impact.

The extent to which the findings did or did not replicate across this range of varied conditions, and the discussion of why it could be so, allowed ample scope for originality, especially since some of the issue tested (e.g. the relationship of attitudinal responses with past and future behavioural changes), were repeated for the first time on a different set of data. If the

[17] See also Chapter 10 for further discussion concerning this issue.

results held again, we knew they could be possibly repeated on other sets of data, and hence they would be worth explaining and interpreting, with the final aim of building a "theory".

Several researchers (e.g. Ehrenberg, 1969,1975; Channon and Bullen, 1975; and Jacoby, 1978) also warn against the straightforward application of statistical techniques and the construction of mathematical models before the observed data are actually understood.

The rationale behind the importance of replication for rendering a model predictable, is also behind the methodological decision in this work to employ formal statistical techniques such as Tests of Significance, Correlation Coefficients and Analysis of Variance mainly in a supportive role, and after the general patterns had been established and evaluated.

The extent to which the same results held in a different population, different conditions and product categories (as was mostly the case), constituted an even stronger test than statistical significance, showing not only that the results were real, but also that they were generalisable.

Had we found any substantial discrepancies with previous findings or among product categories, the question of how significant or real these differences were would have been tackled, also in terms of reliability of the measurement instrument. Further observations would have had to be made to see if they were repeatable and systematic or one off occurrences.

Having spelled out the general methodological outline of the thesis, the following Section will be dedicated to the review of: (i) some of the potential biases connected with questions concerning attitudes (Sub-section 7.3.1.) and the choice of scales (Sub-section 7.3.2.); and (ii) possible distortions arising from reported behaviour (Sub-section 7.3.3.).

The extent to which we should be concerned with such biases in the current work is also going to be discussed.

7.3. QUESTIONNAIRE BIASES

A general problem with attitude measurement is the fact that attitudes cannot be directly observed, but they can only be elicited through interviews, where potential biases arising from wording of questionnaires have been concerning researchers for a long time (e.g. see Oppenheim, 1966, 1992; Bridge et al., 1977; Kalton and Schuman, 1982; Feldman and Lynch, 1988; Dabholkar, 1994). We summarize researchers' opinions and findings in this area in Sub-section 7.3.1..

Kalton and Schuman (1982) have pointed out that "*a failure of data to fit a theory is usually as likely to cast doubt on the theory as on the measuring instrument*". Vice-versa, agreement with theoretical predictions "*is not a clear confirmation that the responses are valid*", but it may be "*an artifact of measuring instruments employed - a 'methods effect'*".

Hence a substantial stream of research has focused on the problem of evaluating different types of scales and on their power of discrimination between brands (e.g. Abrams, 1966; Albaum, Best and Hawkins, 1977; Clancy and Garsen, 1970; Holmes, 1974; Haley and Case, 1979; Joyce, 1971b; Barnard and Ehrenberg, 1990; etc.).

Because of the emphasis on replication the same types of scale (attribute-by-attribute free-choice for measuring beliefs, and brand-by-brand forced-choice for measuring purchase behaviour and intentions) were adopted in both the UK and the US study. They had been widely tested and used in the past by the British Market Research Bureau in the UK. In Sub-section 7.3.2. we report in detail on the research concerning these techniques, and only very briefly on the extensive research on other kinds of scales.

Finally, in Sub-section 7.3.3. we discuss potential problems associated with factual questions, such as over- or under-reporting.

7.3.1. Biases Originating from Questions Concerning Attitudes.

Some academics (e.g. Bridge et al., 1977) have pointed out the possibility that the mere act of interviewing might induce the respondent to form opinions previously absent, or to change the direction and intensity of existing attitudes.

According to Feldman and Lynch (1988) the measures themselves may create cognitions if none exist, or if they are not easily retrieved. In these instances, subjects might use memories of their past behaviour and the external circumstances in which it occurred as inputs (this is also consistent with Bem's (1968) viewpoint). Even if prior cognitions exist, subjects may draw on earlier responses in the questionnaire instead of on long-term memory. Pretesting to determine some of the constructs naturally used by respondents may help mitigating this potential problems (Dabholkar, 1994).

Measuring all the variables in the study at a given point in time may overstate the strength of some relationships. In particular, the order of measuring variables, e.g. first beliefs, then attitudes, and finally intentions, may also strengthen the relationships between these variables (Feldman and Lynch, 1988). One possible way to avoid this bias would be to randomize the order of questions among respondents (Oppenheim, 1966, 1992).

Order effects may also occur when one of the questions is a general one on one issue and the other is more specific on the same issue. Kalton and Schuman (1982) report evidence that the distribution of answers to the general questions may be affected by *preceding* specific questions. This may be due to the fact that after answering the specific question some respondents might assume that the general question excludes the specific part.

However, according to Dabholkar (1994), order effects may not occur when respondents are not asked to think of similarities or differences between options but are asked to respond to a common set of beliefs, as done in our questionnaire.

A further possible bias in attitude questioning is the respondents' "*tendency to reply to attitude-scale items in a particular way, almost irrespective of content*", because of a "*social desirability*" or "*acquiescence*" response sets (Oppenheim, 1966,1992).

This is discussed in the next Sub-section in connection with different types of scales.

7.3.2. Biases Originating from Different Scales.

On the issue of scales' power of discrimination, Joyce (1971b) compared attribute-by-attribute, brand-by-brand free-choice questionnaires, and attribute-by-attribute and brand-by-brand forced-choice techniques. The free-choice, attribute-by-attribute method was found to be the best able to discriminate between images of similar brands. Forced-choice techniques were shown to have a tendency to over-report favourable responses, particularly among non-users of the brand, because of the inclination to give "polite" responses. The free-choice, brand-by-brand method tended to have the same bias, apparently because of the difficulty of taking in the whole list at a glance (activity that seemed to be easier in the attribute-by-attribute questionnaires). The attribute-by-attribute free-choice questionnaire was also found to be the easiest to administer.

Scaling techniques, however, would be superior in collecting more information from each respondent about each brand.

Barnard and Ehrenberg (1990) confronted free-choice and forced-choice (scaling and ranking in particular) techniques of attitude measurement. While free-choice questioning is subject to a variable non-response effect (it is up to the respondents to indicate their beliefs about a brand or not) and it could therefore under-report the beliefs, forced-choice procedures always require an answer, which, in the case of respondents unfamiliar with a brand might result in pseudo-beliefs. This kind of problem with forced-choice techniques can subsist even when scales make allowance for a 0 mid-point neutral score for "No Opinion", since any under-utilization of this option would make the choice more forced.

The techniques were applied on three separate quota samples of housewives matched on their demographic characteristics. The use of separate samples avoided the danger of conditioning, but made it impossible to make comparisons at the level of the individual consumer. The scores obtained with the three different techniques were standardized, for the sake of comparison, so that they had the same means and standard deviations as the free-choice percentages.

The three techniques achieved generally large correlations in placing brands in the same relative positions for each attribute. The correlations of the belief measures with claimed brand usage or purchasing were also very similar for the three methods. The higher responses obtained with scaling and ranking did not generally affect the brand level data compared with free-choice, although the latter appeared to be more sensitive to brand differences, especially in relation to market share. In particular, "Double Jeopardy" effects were less evident for ranking and scaling than for the free-choice technique (the tendency for the latter to under-reporting applies perhaps

more to smaller brands, and this is the basis for the statistical selection explanation of the Double Jeopardy effect).

The evidence that the same brand rank order is obtained by employing different measurement techniques, is proof that the results given by free-choice questionnaires are not only the outcome of response styles (e.g. the degree to which each respondent has to agree with each statement before answering yes), but that consumers have in their minds a rough rank order for the brands (this interpretation is consistent with Barwise, 1985).

Clancy and Garsen (1970) compared the predictive power (in terms of future behaviour) of "Monadic Preference Scales" with that of "Comparative Preference Scales". Monadic Scales would be less able to discriminate among brands, because of the tendency of some consumers to rate all marketing stimuli either very positively ("yeasaying") or very negatively ("naysaying") regardless of content. The respondents' style of using the scale, rather than the marketing stimuli themselves, would then account for much of the variance in purchase probability scale data.

"Yeasaying" and "naysaying" response determinants could cause serious response biases in one direction or another particularly if they did not affect all individuals in the same way and therefore they generated different amount of error across different groups in the population.

Comparative scales, on the other hand, would "force" respondents to express their preferences in a discriminative manner. These methods too, however, would suffer from other kinds of problems, such as the absence of an absolute score that can be compared at another point in time with another. For example one stimulus might be rated higher than another, although they are both disliked by the subject. Other biases connected with comparative scales would be of the so-called spurious context order, i.e. they would maximize differences between brands unrealistically.

Clancy and Garsen believe that biases connected with Comparative scales would however be of a lower order of magnitude, and therefore of less concern than those entailed by the employment of Monadic preference scales.

Checks across brands and individuals in our data did not show any evidence of response bias or "response styles" (see Chapter 8), although the attribute-by-attribute free-choice measure employed in our work is comparable in nature to the Monadic Scales discussed by Clancy and Garsen. As already mentioned, attribute-by-attribute free-choice measures were found in the past to discriminate just as well, if not better, than forced choice and comparative scales (e.g. Joyce, 1971b; Barnard and Ehrenberg, 1990).

Gold and Salkind (1974) also warn that the top box scores commonly used to evaluate stimuli might be a result of response styles instead than true evaluation. The paper attempts to

prove
~~proof~~ that, on an 11-point scale, "yeasayers" who do not discriminate among brands would concentrate their responses more heavily on the two higher scores. Their findings, however, are not clear cut, since a higher than normal concentration of "non-discriminators" in the "top box" is significant only in one out of four instances.

Finally, a study by Arndt and Crane (1975) contradicts Clancy and Garsen's findings by reporting no significant "yeasaying", response or wording biases among groups of people of different education levels interviewed on their opinions about several statements.

Because of the rather inconclusive research concerning "yeasaying" and "naysaying" tendencies and of the evidence just quoted, we were not greatly concerned about this kind of bias in our results.

However, worth mentioning is Haley and Case's (1979) very comprehensive research on the characteristics of various scales from the points of view of: (i) their convergent validity; (ii) their ability to discriminate between the objects being rated; (iii) response biases (i.e. "yeasaying" versus "naysaying"); and (iv) reliability issues.

In general terms Monadic-type scales are considered superior to Paired Comparison scales which would force a preference where, in fact, there is none (see also Joyce, 1971b reviewed above). This is in line with the suggestion that, in "real life", people do not compare brands directly, except, maybe, over time (in this respect, see the work on the effects of price changes undertaken by Ehrenberg and England, 1990).

Overall, however, the comparison between brand ratings (in terms of each brand relative position with respect to the product mean) showed a great deal of agreement among scales (but when brands were preferred about equally as, for example, for detergents, there was less agreement).

Despite this general consensus concerning brand ratings, some scales seemed to measure certain things better than others. For example, scales of Awareness and Brand Choice would be the two most associated with salience of the brand (or brand awareness), while Constant Sum scales would load more heavily on the evaluation (or brand liking) factor, but would come third on salience.

When testing how the ratings related to current brand usage, Haley and Case found that, on the majority of the scales, the brand share remained relatively small and constant among the less favourable ratings, until it reached a point toward the favourable end where it began to rise sharply. The point at which it began to rise varied by scale. The five scales that were found to discriminate best among brands were also the ones for which the brand share began to rise both early and steeply. On the other hand, for measures which accumulated many positive ratings and

therefore were less effective in discriminating among brands, brand shares appeared to remain constant along a greater proportion of the scale.

The finding by Haley and Case of a strict relationship, at least for some of the scales, between brand ratings and market share is very much in line with Barwise and Ehrenberg (1985), Barnard and Ehrenberg (1990), and with the results of our work here (see Chapter 8).

Finally, additional studies on the topic of measurement scales include: (i) Abrams (1966) on selecting scales based on the criteria of achieving the best predictions of consumer behaviour and of sensitivity to real changes in behaviour; (ii) Albaum, Best and Hawkins (1977) on semantic differential scales such as the Stapel having the same interval properties as the Thurstone, and being applicable in its place, thus avoiding a two-step, quite lengthy measurement technique; and (iii) Holmes (1974) who warns that a simplistic application and interpretation of statistical testing and of descriptive statistic, without taking into consideration the form of the distribution arising from the particular scaling technique, might entice misleading information. Although this is quite an obvious point, it is often disregarded in practice.

7.3.3. Distortions Arising from Reported Behaviour.

Oppenheim (1966, 1992 page 147) questions the factual validity of reported information, especially in the case of low salience to the respondents, such as routine purchasing decisions, which are unlikely to be well remembered.

In this context, a few researchers have confronted the issue of the content validity of responses to survey questions, mainly with the concern to establish if there are any differences between reported and recorded purchase data.

Parry and Crossley (1950) report how a common method to test the validity of the responses from surveys has been by means of comparisons of aggregate results from the survey with actual or percentage figures from an outside source. Nevertheless, since aggregate comparisons might not reveal dangerous compensating errors, an independent check on the worth of individual responses should be carried out. The latter, however, is often difficult to accomplish in commercial research, although there are examples of "pantry inventories" being carried out to check whether what is on the shelves corresponds to what had been reported.

In a more recent paper Wind and Lerner (1979) studied the relationship between the purchase measures obtained from diary panels (in which respondents *recorded* their purchases) and those subsequently obtained through survey methods (where respondents *reported* their purchases) on the same set of respondents.

They found that at the *aggregate* level, despite a relatively high discrepancy ratio[18], survey data collected at the end of a six months recording period reproduced the brands' recorded rank orders satisfactorily. On the other hand, at the *individual* level, slightly less than 50% of the respondents were classified correctly as purchasers on the basis of their responses to the survey question concerning the brand(s) they bought most often and the other brands bought. These findings should be interpreted in the light of our own finding in Chapter 9 comparing aggregate and individual statements over time.

Previous research is reported by Wind and Lerner to have shown a general degree of accuracy (in surveys) in estimating relative magnitude and rank order statistics, but also a tendency to either over- or underestimate the "true" (national aggregate) purchase data. Overestimation would be more common for frequently purchased goods or for homeowners' expenditures for expensive alterations and repairs. On the other hand, underreporting would be characteristic of sensitive expenditures such as liquor and cigarettes (the so called *threat* bias -

[18] The discrepancy ratio was calculated as the ratio of brand share (% of households) recalled to brand share (% of households) recorded.

see Buchanan and Morrison, 1987 and also Parfitt, 1967), as well for expenditures that are used primarily by individuals rather than households, such as meals eaten outside the home.

Typical biases of survey questions are identified as being caused by: forgetting, ambiguous questioning, reporting errors, deliberate falsification, interview bias, lack of awareness of purchases made by other household members, mistaken identity of a brand, or low awareness and importance of a brand name.

On the last point, previous research by Sudman (1964) had shown that surveys appeared to overstate shares of "best known" nationally advertised brands (e.g. a ratio of 1.5 or more between recalled and recorded purchase shares), whereas the opposite seemed to happen for local brands, leading chain brands and other chain brands. The latter is consistent with more recent findings by Gordon (1994).

On the contrary empirical research by Wind and Lerner on margarine purchases showed a positive correlation between the brand's penetration (i.e. the percentage of households buying the given brand) and the degree of consensus between recorded and reported data. The same result was subsequently found to hold with respect to market share. Moreover, the number of recorded diary purchases of a brand was found to be inversely proportional to the discrepancy between the survey and the diary data (i.e. the higher the number of recorded purchases, the lower the percentage not reporting at least one purchase). However, the study revealed a strong tendency for the number of brands bought to be inflated in the survey, compared to the diary (92% of the cases were overestimated).

Consistently with Wind and Lerner, the accuracy with which housewives can equate their purchasing claims with actual recent behaviour was found by Parfitt (1967) to be primarily a function of the *frequency* of purchase. Light and medium buyers in a product field would be more prone to exaggeration than the heavy buyers. Similarly Menon (1993) found some support for the hypothesis that the accuracy of frequency reports would increase with the regularity of the behaviour.

On the other hand Sudman (1964) found recall accuracy either to decline or to remain stable as purchase frequency *declined*. Hence the more durable the good, the less subject it would be to memory error. Ehrenberg and Goodhardt (1981) also showed over-reporting of claimed versus recorded behaviour in the context of watching of television programmes, and more so for programmes with more than one episode per week (e.g. News and Soap Operas).

A further possible bias in reported behaviour is *telescoping*, where subjects include in the recall period (e.g. the last month) events preceding it. Telescoping is sometimes interpreted as

"border bias" where the border is the time limit of the recall period (Buchanan and Morrison, 1987).

Despite the criticism that surveys might not accurately reproduce "real" buying behaviour because of the possible biases described above, we believe that this should not be a major concern in studies like ours, since we are more interested in the relationship between perceived attitudes and usage/non-usage than in the precise number of purchases or market share of brands.

For example, attitudes measured alongside reported and recorded viewing were found by Ehrenberg and Goodhardt (1981) to follow the same kind of pattern with watching frequency. This supports the validity of the measures.

Furthermore, there seems to be general agreement among researchers that the "real" rank order of brands is respected in purchase behaviour surveys of this kind, and this is a major aspect of our kind of analysis. The extent to which different brands tend to be ordered in the same way by different beliefs for "Users" and "Non-Users", and the degree to which these kinds of patterns are reproduced for different product categories is reassuring.

However, some authors (e.g. Heeler and Ray, 1972 and Feldman and Lynch, 1988 reviewed above) have questioned the measure validity of the criterion behaviour measures, if both attitudes and purchase measures are collected through the same interview. We don't see how this can be avoided, if we want to collect information at the individual level as well.

Relevant to this issue is the research of Manfredo and Selby (1988), who examined the accuracy of self-reports and their effect on tests of attitude-behaviour relationships. They found a correlation of .78 between self-reported and actual behaviour, but the former produced results different from actual behaviour in attitude-behaviour tests: self-reports had effects on attitude and behavioural intention measures independent of actual behaviour.

In particular they found greater consistency between people's reported behaviour and attitudes than between their actual behaviour and their attitudes. Manfredo and Selby's interpretation is that self-report of behaviour is at the interface between actual past behaviour and attitudes. It would be a *belief* about one's behaviour and, to an extent, it would appear to reflect how people perceive themselves and their actions.

Although this interpretation is plausible, it should be noted that Manfredo and Selby's research was on the topic of nongame tax-fund donations, which is a higher involvement issue than grocery purchases and the like.

Fears of consumers wanting to appear consistent in their responses about attitude/purchase behaviour should be mitigated by the low-involving nature of the questions asked and by the scale and variety of the data collected (across eleven or so attributes for each of ten or so brands in

each of four products) and by the attribute-by-attribute, free-choice technique (see the findings reported above by Joyce, 1971b and Barnard and Ehrenberg, 1990).

PART III: DATA ANALYSIS

INTRODUCTION

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INTRODUCTION

We now start discussing the results of our data analysis. Thanks to the nature of the data, i.e. responses of the same consumers at two points in time we could conduct our analysis not only at the cross-sectional but also at the longitudinal level, both in the aggregate and in individual terms.

At the cross-sectional level we have looked both at overall responses, e.g. at the overall percentage of our panel mentioning an attribute for a brand, and at the responses of sub-groups of respondents, i.e. we compared the responses of the people affirming to buy a brand regularly, with the responses of those claiming to buy a brand irregularly or not at all. Because we had data at two separate points in time, we could check if the same relationships between the variables obtained at the first interview could be replicated at the second interview. This was usually found to be the case, as the data reported in Chapter 8 and in the Appendixes B to D attest.

By comparing the results at the two interviews with those obtained in the UK we could give a generalizable interpretation to consistent patterns across countries, product categories, and attitude measures.

We then proceeded to compare the levels of responses at the two interviews, in order to ascertain if there had been any changes in the responses concerning specific brands either at the aggregate or at the individual level. For example, we first compared if the overall percentage of respondents mentioning an attribute for a brand at the first interview was the same at the second interview. Having found that the aggregate results for all our measures were pretty much stable over time, we then looked at the individual level, e.g. at how many *individual* respondents actually mentioned the same attribute for the same brand at both interviews. Here we found that, despite steady overall results, a considerable number of individual consumers had changed their responses in the eighteen months between the two interviews. In Chapter 9 we describe these findings and suggest possible ways of reconciling and interpreting these seemingly contradictory results. In particular, we discuss the occurrence of a strong relationship (of a Double Jeopardy kind) between the initial responses and the repeat response rates.

In Chapter 10 we go one step further by establishing the generalizable form of the relationship between the initial responses and the repeat response rates across product categories, variables, and countries.

Finally, in Chapter 11 we analyze how aggregate and individual responses vary over time in connection with changes in usage claims. The usage stated at the time of the interview emerges

as the dominant factor here, and attitudinal responses appear to be no more predictive of future than of past usage changes.

CHAPTER 8: RESPONSES AT SEPARATE POINTS IN TIME

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8. RESPONSES AT SEPARATE POINTS IN TIME

Our data analysis in this Chapter will focus on the findings concerning the relationship between the variables at separate points in time.

Castleberry and Ehrenberg (1990) undertook a limited analysis of the US data set in terms of the relationship between Usage and Beliefs at the first interview. The results substantially confirmed the UK findings, with high correlation with current brand usage occurring for certain belief variables and low correlations occurring for others (see Chapter 6).

The correlation between the percent mentioning a belief about a brand and the frequency of buying it was also confirmed, and so was a "Double Jeopardy" effect, whereby even among frequent buyers of each brand, fewer gave a favourable response for a small than for a large brand. Their paper also stressed the importance for practitioners to take this "usage factor" into consideration when interpreting market research results.

However, the analysis of the US data undertook by Castleberry and Ehrenberg did not take full advantage of the richness of the data collected. For example, no analysis was ever conducted concerning Intentions to Buy and Advertising Recall, nor about the relationship between the variables over time.

Therefore part of our work involves replicating and extending on the American data the previous British analysis by Ehrenberg and his associates (e.g. Bird and Ehrenberg, 1966 and Barwise and Ehrenberg, 1985), before carrying out any other of the objectives discussed in Chapter 1. Extensions were to a different sample and another country, to services and a different data collection method.

Wherever the results (as expected) replicate in the two countries, our special contribution will be one of interpretation and quantification of the relationships so established. This has been so far largely missing for most of the British data set, which had only been tabulated and mostly not published (e.g. Barnard, Barwise and Ehrenberg, 1986; Barnard and Ehrenberg, 1990).

We also expand the analysis to include aspects not covered by previous attitudinal research anywhere, such as, for example, multi-brand buying issues and "clusters" of brands (see Sub-sections 8.1.2. and 8.1.3.), the application of the Double Jeopardy effect to Intentions to Buy (Sub-section 8.2.2.), and an extensive discussion of ways to discriminate between different types of attributes (Sub-sections 8.4.1. to 8.4.4.).

As reviewed in previous chapters, most attitudinal research has been motivated by the attempt to predict purchase behaviour. Therefore the latter has been the real and ultimate focus of analysis of "attitudinal" research.

Because of this strong motivation to understand behaviour and since previous attempts to predict purchases from attitudes have been mainly unsuccessful, we actually started our analysis from Buying Behaviour.

Our first purpose was to see if previously known patterns of *recorded* Buying Behaviour (e.g. Ehrenberg, 1972, 1988) would replicate for our *claimed* Buying Behaviour measures. This had not been done before and represent a major contribution in terms of understanding and validating the use of claimed Buying Behaviour in attitudinal research.

Having found very close similarities between recorded and reported Buying Behaviour, we adopted our Purchase Behaviour measures as the common criterion for analysing Beliefs about Attributes, Intentions to Buy, and Advertising Recall. This is a diagnostic (rather than predictive) approach, consistent with previous attitudinal research (e.g. Bird and Ehrenberg 1966b; Barwise and Ehrenberg, 1985; Castleberry and Ehrenberg, 1990) which had successfully employed the criterion of claimed buying behaviour in establishing comparable patterns of results across variables in different product fields.

By adopting the criterion of claimed buying behaviour as a bench-mark we will be able, for example, to interpret findings such as why as many as 81% of the buyers of Tide say it "Gets Stains Out", while only 50% say so for Cold Power. Does this necessarily mean that Cold Power is not doing its job as well as Tide? And if so why do some people still buy it?

Throughout the analysis we will summarize, compare, and interpret hundreds of results across attributes, brands, and product categories against the common criterion of claimed buying behaviour.

Finally, in Section 8.5. we will put our kind of analysis in the wider context of conventional statistical techniques such as correlation and factor analysis.

8.1. BUYING BEHAVIOUR.

8.1.1. Buying Frequencies Adopted in the Analysis.

As also mentioned in the previous chapter, there were eight possible answers to the forced-choice buying question "And from this card how often do you buy [brand x, y, z, ...] nowadays?", ranging from: (1) "Once a week or more often", through (4) "About once every 3 months", to (7) "Less than once a year", plus (8) "Don't know", and a presumed (9) "Never Buyers" group of non respondents to this question.

Since we intended to adopt the claimed buying behaviour as the main criterion, we excluded from the analysis all the "Don't know" respondents to this question[19], and mainly classified the panellists into two groupings, the most Frequent Buyers, labelled *"Users"* of each brand, and the Infrequent Buyers or *"Non-Users"*.

We varied the grouping criterion from product to product, in order to reflect their average frequencies of buying, unlike the initial analysis by Castleberry and Ehrenberg in the US and the UK research which had almost all adopted the "Once a month or more often" criterion.

We knew from previous research the average purchase frequencies of Detergents and Breakfast Cereals (e.g. Uncles, Hammond, Ehrenberg, and Davies, 1992). Accordingly the *"Users"* of Laundry Detergents were respondents claiming to buy up to once every three months (i.e. the first four buying frequency categories above), and the *"Users"* of Breakfast Cereals included the first three buying frequency categories up to "About once a month".

For Fast Food Restaurant Chains (hereafter F.F. Chains, or simply Fast Food) we adopted the same "Once a month or more often" definition as for Cereals, as in previous research (the relative size or "market share" of the chains remained the same up to the "About once a month" frequency, but not beyond where especially the smaller chains were visited relatively less frequently - see for example Castleberry and Ehrenberg, 1990).

For TV News (both daily and weekly), we classified as "Users" those claiming to watch each programme "Once a week or more often", and "About every other week", which gave good numbers in each category.

Pilot work showed that including in the "Non-Users" category the remainders not counted as "Users" could blur the attitudinal results, depending on the numbers in the intermediate

[19]The "Don't know" respondents were few anyway (e.g. 4% for the average brand in Table 8.1.), hence their exclusion should not have altered the results in any significant way (e.g. see Gilljam and Granberg, 1993).

"border" categories (exacerbated by the so-called phenomenon of "telescoping" or "border bias" noted in the previous chapter).

We reduced this problem by excluding from the "Non-Users" groupings the "border" category. This gave two more distinct groupings of "Users" and "Non-Users", although at the expense of sample size, as for example in Table 8.1. below.

TABLE 8.1.
Sample Sizes at the First Interview

Laundry Detergents (n = 218)				
			Excluded	
Brands by No. of "Users"	"Users"	"Non-Users"	Border Categ.	Don't Knows
Tide	113	86	10	9
Woolite	68	102	40	8
Cheer	48	136	20	14
Bold 3	48	150	8	12
Wisk	47	138	24	9
Gain	33	161	13	11
Oxydol	17	185	7	9
Era	14	191	8	5
Cold Power	4	206	3	5
Duz	5	206	2	5

NOTE: The numbers for other products at both interviews are very similar.

The buying frequency splits used to define the "Users" and "Non-Users" groupings in each product field are summarized below:

	Detergents	Cereals	Fast Food Chains	TV News
"Users"	Once every quarter or more often	Once a month or more often	Once a month or more often	Once a fortnight or more often
"Non-Users"	Once a year or less often, or never	Once every 6 months or less often, or never	Once every 6 months or less often, or never	Once a quarter or less often, or never
"Border" Category (excluded)	About once every six months	About once every three months	About once every three months	About once a month

The corresponding percentages of respondents claiming to be "Users" of each brand are reported in Table 8.2. below. They are a measure of the relative size or "market share" of each brand.

TABLE 8.2.
Claimed Brand Usage % at the Two Interviews
(sample size: 219)

Laundry Detergents			Cereals			Fast Food Chains			TV News		
	"Users"			"Users"			"Users"			"Users"	
Brands by Usage	1st Int	2nd Int	Brands by Usage	1st Int	2nd Int	Brands by Usage	1st Int	2nd Int	Brands by Usage	1st Int	2nd Int
	%	%		%	%		%	%		%	%
Tide	54	59	Raisin Bran	34	30	McDonald	61	67	11 Alive	80	84
Woolite	32	35	Cheerios	34	36	B.King	59	56	Chnl. 2 News	75	70
Cheer	24	40	K.CornFlak.	25	24	Wendy	48	54	EyeWitness	74	72
Bold 3	23	29	Frost.Flak.	15	20	Hardee	28	27	CBS	66	58
Wisk	22	30	All Bran	17	17	D-Lites	20	4	NBC	62	69
Gain	16	20	NutCheer	15	17	D.Queen	20	21	60 Minutes	56	60
Oxydol	8	8	Frt Loops	15	12	Varsity	18	24	ABC	48	51
Era	7	10	Rice Chex	10	12	Krystal	7	12	20/20	37	46
Cold Power	2	5	Wts.Rais.	8	11				McNeilLehrer	13	16
Duz	2	1	CocaPuffs	5	5						
			BooBerry	1	1						
Average	19	23	**Average**	16	17	**Average**	32	33	**Average**	57	59

NOTE: About 10 people or so did not respond at all for a given product

With a few major exceptions (e.g. the Laundry Detergent Cheer), there were no sizable changes in the claimed buying frequencies in the eighteen months elapsed between the two interviews. The average deviation (2nd - 1st) is about 5 points (see Chapter 9). The four markets therefore are pretty much steady. (In Fast Foods, the chain D-Lites closed between the interviews and is therefore excluded from all subsequent analysis). We comment on the interpretation of these results in Chapter 9.

From time to time we will exclude the two weekly TV Programmes "60 Minutes" and "20/20" from the analysis of TV News, in order to compare a more homogeneous group of programmes (i.e. Daily News Programmes).

The relatively high claimed brand usage for the two services is noteworthy. For TV News apart from the very high potential viewing frequency (seven out of the nine programmes are nightly ones, which their viewers might see several times a week), this is consistent with previous research highlighting a specific form of overclaiming for regular TV programmes: peoples viewing claims tend to ignore evenings when they are out or not viewing TV at all - "I always watch it [when I am at home and watching television]" (Barwise and Ehrenberg 1988, p.42).

8.1.2. Multi-Brand Buying Patterns.

As already mentioned in the literature review, previous research in this area lacked consideration for multi-brand buying patterns. We start by examining multi-brand buying patterns in each product field here and any brand "clustering" or sub-markets in Section 8.1.3..

We also compare our results with known patterns of *recorded* buying behaviour.

With the "Usage" criteria described above we calculated the average number of brands claimed as bought in the time period, for instance "Once a quarter or more often" for Laundry Detergents (see Table 8.3.).

TABLE 8.3.
Number of Brands Claimed.

	Laundry Detergents		Cereals		Fast Food Chains		TV News (daily)		Average	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
No. of Brands Claimed	2.4	2.7	2.4	2.6	2.6	3.0	4.1	4.3	2.9	3.1

The results in Table 8.3. show that "Users" (of at least one brand) claimed to buy (or eat at or watch), on an overall average, about three brands out of the 10 or so itemized for each product. This is consistent with what is found in recorded buying behaviour, from diary or scanner panels (e.g. Ehrenberg, 1972, 1988; Bass 1972).

There are differences between the four product fields reflecting the different purchase cycles: from over two brands of Laundry Detergents and Cereals (or over 20% of available brands bought "once a quarter" or "once a month") to four for *daily* News Programmes (representing 60% of programmes being watched "every two weeks"). This will help to explain some of the later results.

There are wide differences among respondents in the number of brands claimed, with on average one in six claiming to buy only one brand, as shown in Table 8.4..

TABLE 8.4
Percentage of Respondents by Number of Brands Claimed.

No. of Brands Claimed	Laundry Detergents		Cereals		Fast Food Chains		TV News (daily)		Average	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
	%	%	%	%	%	%	%	%	%	%
0	23	17	28	33	11	15	2	5	16	18
1	26	22	24	21	25	16	6	5	20	16
2	24	24	16	18	21	20	15	17	19	20
3	12	16	16	11	22	20	18	10	17	14
4	7	6	13	6	12	15	14	16	12	11
5	4	9	3	5	5	7	16	13	7	9
6	1	5	0	4	2	2	24	24	7	9
7	1	1	0	1	2	5	5	10	2	4
8	1	0	0	0	-	-	-	-	0	0
9	0	0	0	0	-	-	-	-	0	0
10	0	0	0	0	-	-	-	-	0	0
11	-	-	0	0	-	-	-	-	0	0

We could detect no "response style" biases affecting the results across product fields, e.g. any significant tendency to mention at least one brand out of politeness to the interviewer. (The blips for seeing *six* daily news programmes a week seem sensible).

Although the number of brands claimed ~~are~~ is pretty much the same at both interviews, at the level of the individual respondent the correlations between the number of brands at the two interviews was only about .3. For example, a respondent might have claimed to be buying two brands of Detergents "Once a quarter or more often" at the first interview, but four at the second. Table 8.5. shows similarly low correlations for another usage group.

TABLE 8.5.
Correlations Between the Number of Brands Mentioned at the Two Interviews

Buying Frequency	Laundry Detergents	Cereals	Fast Food Chains	TV News (daily)	Average
"Users"	.34	.38	.22	.27	.30
"Infrequent Users"	.21	.47	.31	.22	.30

NOTE: "Infrequent Users" = bought less frequently than "Users" (excluding "Never Users")

A likely explanation is that the smaller brands are bought less frequently than the larger brands (Table 8.2.), and therefore only occasionally (e.g. to satisfy a specific requirement or because of a special promotion).

Low or no correlations were also found concerning the number of brands claimed by individuals to be used across the different product fields, indicating the lack of any individual "response style " (e.g. see Clancy and Garsen, 1970).

But a variety of further analyses showed no special "propensity" by certain consumers towards exclusive brand loyalty no matter what the product category (e.g. Jacoby and Chestnut, 1978

and previous references there). There was little or no overlap between sole buyers in the four product fields at either interview. For example, of the respondents who claimed to use only one brand (46 for Laundry Detergents, 10 for Breakfast Cereals and 7 for Fast Food Restaurants) only one claimed to be a sole buyer in all three product fields.

More generally, Table 8.6. highlights that, within each product field, the incidence of such "sole buyers" is low and varies little from brand to brand, except that for the larger brands more respondents claim to be a "sole buyer" than for a smaller brand, consistently with the phenomenon of Double Jeopardy.

The low incidence of "sole buyers" among "Users" is not surprising since, by and large, they will tend to be heavier users of the category and hence multi-brand buyers.

TABLE 8.6.
Proportion of Sole Buyers at the Two Interviews

Laundry Detergents			Cereals			Fast Food Chains			TV News		
Brands by Usage	% of Sole Buyers 1st	2nd	Brands by Usage	% of Sole Buyers 1st	2nd	Brands by Usage	% of Sole Buyers 1st	2nd	Brands by Usage	% of Sole Buyers 1st	2nd
Tide	16	12	Raisin Bran	10	4	McDonald	8	6	11 Alive	1	1
Woolite	5	3	Cheerios	7	7	B.King	10	2	Chnl. 2 News	2	1
Cheer	2	3	K.CornFlak.	5	4	Wendy	5	8	EyeWitness	1	1
Bold 3	4	3	Frost.Flak.	3	5	Hardee	1	0	CBS	.5	0
Wisk	3	2	All Bran	3	7	D.Queen	2	0	NBC	0	0
Gain	1	.5	NutCheer	.7	1	Varsity	.5	2	60 Minutes	-	-
Oxydol	2	.5	Frt Loops	1	.7	Krystal	0	.5	ABC	0	.5
Era	0	.5	Rice Chex	2	2				20/20	-	-
Cold Power	.5	.5	Wts.Rais.	.7	0				McNeilLehrer	.5	0
Duz	0	0	CocaPuffs	0	0						
			BooBerry	0	0						
Average	3	3	Average	3	3	Average	4	3	Average	.8	.7

The results so far for claimed buying patterns are consistent with those for *recorded* buying behaviour (e.g. Ehrenberg 1972, 1988).

The correspondence between our findings here and those for recorded buying behaviour is a sign, broadly at least, of the validity of the claimed buying measure, despite the biases discussed in Chapter 7.

8.1.3. Brand-Duplication of Purchase.

We now analyze in more detail, i.e. brand by brand, the extent to which buyers of one brand also buy other brands. This will be done by means of the so-called brand "duplication" analysis, as described below.

In this section we analyze for each pair of brands in each product field the percentage of respondents claiming to buy both at each interview. In doing so we follow the approach devised by Ehrenberg (1972, 1988), who, for recorded buying behaviour had found that *"the popularity of any brand X amongst the buyers of any other Brand Y or Z does not depend on which other brand - Y or Z - one is considering."* Rather, the tendency for buyers of brand Y also to buy brand X depends only on the penetration (or market share) of brand X, i.e.:

$$b_{x.y} = D\, b_x$$

where $b_{x.y}$ is the proportion of buyers of Brand Y who also bought Brands X, b_x is the penetration of Brand X, and D is a number which is the same for all pairs of brands in the product-field, as long as the different brands are broadly similar in product-formulation and marketing background. The parameter D is usually calculated by taking the ratio of the averages of $b_{x.y}$ and of b_x across all pairs of brands, i.e.: $D = \Sigma b_{xy}/\Sigma b_x$.

The so-called "duplication law" above described was found by Ehrenberg to apply to a wide range of product fields and for time-periods of different lengths.

We are now going to test the application of the above relationship to our data for two reasons: (1) if the "duplication law" is found to hold to reported buying behaviour this would add to the validity of this kind of buying measure; and (2) we will be able to identify any clusters of brands, which will help us to explain other results from our data.

Table 8.7. illustrates the results for one product field, Breakfast Cereals, at the first interview (excluding the two very small brands Coca Puffs and Boo Berry).

Summary results for all product fields are reported in Appendix B.

TABLE 8.7.
Brand-Duplication of Claimed Purchases - Breakfast Cereals - 1st Interview.

% Buyers of	Who also Bought									Average
	Raisin Bran	Cheerios	K. Corn Flakes	Frosted Flakes	All Bran	Nut Cheer	Fruit Loops	Rice Chex	Wheat Raisins	
Raisin Bran	-	46	34	13	21	22	15	12	13	22
Cheerios	46	-	33	19	18	31	22	12	9	24
K.CornFlakes	46	44	-	20	22	14	24	8	18	24
Frosted Flakes	30	43	33	-	10	20	33	17	3	24
All Bran	41	35	32	9	-	18	12	12	18	22
NutCheer	52	72	24	21	21	-	24	17	7	30
Fruit Loops	35	52	41	35	14	24	-	7	7	27
Rice Chex	42	42	21	26	21	26	11	-	5	24
Wheat Raisins	53	35	53	6	35	12	12	6	-	27
Avg. Duplication	43	46	34	19	20	21	19	11	10	25
1.3 * Penetration	**44**	**44**	**32**	**19**	**22**	**19**	**19**	**13**	**10**	**25**
Penetration (Table 8.3)	34	34	25	15	17	15	15	10	8	19
Avg.Dupl. - 1.3*Pen.	-1	2	2	-1	-2	2	0	-2	0	0
MAD	6	7	6	7	5	5	7	4	5	6

The data follow the Duplication Law pattern. Thus the duplication figures in the *rows* of the Duplication table decrease from left to right with the size of the brand: only 13% of the claimed "Users" of Raisin Bran also claimed to "Use" Wheat Raisins, while as many as 46% did so for the larger brand Cheerios. The duplication-coefficient D of 1.3 yields a good fit with the average duplication levels (r=.99) and a correlation of .85 even between the individual observed duplication figures $b_{x.y}$, $b_{y.z}$ etc. and the predicted Db_x, Db_y, etc.. However, the average variation (ignoring sign) of about +/- 6 percentage points is not negligible.

This is partly because there is some "segmentation" in this market for three main brand groupings: a) sugar coated/children's brands (such as Frosted Flakes and Fruit Loops); b) "health" brands with high fibre content (Raisin Bran, All Bran and Wheat Raisins); and c) all other brands (Cheerios, Kellogg Cornflakes, Nut Cheer and Rice Chex).

In Table 8.8. we therefore rearranged the duplication figures and the corresponding Db_x type of estimate for each group of brands. The duplication tendencies (D values) for more substitutable brands within each diagonal block are higher (average D=1.7) than between differentiated brands (average D=1.1). This is in line with the market partitioning for cereals found in consumer panel data (i.e. Ehrenberg 1972, 1988; Hammond et al., 1995).

TABLE 8.8.
Segmentation Between Breakfast Cereals Brands - 1st Interview.

% Buyers of		Who also Bought									
		Frosted Flakes	Fruit Loops		Raisin Bran	All Bran	Wheat Raisin		Cheerios	K.Corn Flakes	Nut Cheer	Rice Chex
Frosted Flakes		-	33		30	10	3		43	33	20	17
Fruit Loops		35	-		35	14	7		52	41	24	7
Average		35	33		32	12	5		48	37	22	12
D*Penetration	**2.3b**	**34**	**34**	**0.8b**	**28**	**14**	**7**	**1.4b**	**48**	**35**	**21**	**14**
Raisin Bran		13	15		-	21	13		46	34	22	12
All Bran		9	12		41	-	18		35	32	18	12
Wheat Raisin		6	12		53	35	-		35	53	12	6
Average		9	13		47	28	15		39	40	17	10
D*Penetration	**0.7b**	**11**	**11**	**1.5b**	**52**	**26**	**12**	**1.3b**	**43**	**32**	**19**	**13**
Cheerios		19	22		46	18	9		-	33	31	12
K.CornFlakes		20	24		46	22	18		44	-	14	8
Nut Cheer		21	24		52	21	7		72	24	-	17
Rice Chex		26	11		42	21	5		42	21	26	-
Average		22	20		47	20	10		53	26	24	12
D*Penetration	**1.4b**	**21**	**21**	**1.3b**	**44**	**22**	**10**	**1.4b**	**47**	**34**	**21**	**14**
Penetration (b)		15	15		34	17	8		34	25	15	10

In particular, Table 8.8. highlights a higher duplication of purchase *within* the sugar coated/children's brands, and less duplication of purchase *between* the sugar coated/children's brands and the other two groups, and especially, as we might have expected, with the "health" brands, for which the coefficient D is less than 1. The partitioning are less distinct for the other two groups, as also found in consumer panel data (e.g. Hammond et al., 1995). An additional factor here, making any clustering amongst brands less clear-cut, might be the tendency of respondents to generally overstate their claimed brand usage (Wind and Lerner, 1979).

The fairly small but systematic partitioning in Table 8.8. has reduced the average size of the residuals $|b_{x.y} - Db_x|$ from +/- 6 to +/- 4 percentage points, with a correlation of .9 with the penetration levels. The results for Cereals at the second interview (see Appendix B) closely replicate the ones reported here.

Within each sub-group the size of the brand is still the dominant factor for the degree of inclusion of a brand within a respondent's "consideration set". Within each grouping smaller brands are less likely to be bought by the buyers of other brands than their larger substitutes. This is so throughout the data, irrespective of the specific characteristics of each brand.

Some (even smaller) degrees of partitioning of brands were found also for the other product categories, with average D of only 1.6 *within* individual sub-groups and of 1.3 *between* groups (details are summarized in Appendix B). The finding that the Duplication Law holds again for TV News here is in line with the results by Barwise and Ehrenberg (1988) on meter panels.

In summary, our main results so far for reported buying behaviour confirm that:

* the markets for the four product categories were steady over the 18 months period considered;
* only few "Users" were exclusively loyal to one brand, and most consumers appeared to buy more than one brand on a regular basis, probably within a given "repertoire". Switching from one brand to the another was therefore part of a buying routine;
* apart from some sub-groupings or clusters of brands, switching from one brand to another appeared to be determined not so much by the characteristics of the brands themselves, but by their relative size (or penetration);
* the Duplication Law applies to *reported* as well as to *recorded* Buying Behaviour, (with familiar sub-patterns).

We have considered the claimed buying data in some detail because it is the criterion against which we analyze Likelihood to Buy, Advertising Recall and Attribute Beliefs mentions first at separate points in time, and then over time in Chapters 9 to 11.

8.2. LIKELIHOOD TO BUY

As mentioned in Chapter 7, respondents' Likelihood to Buy a brand was measured with a free-choice question of the form: "Which of the brands on this card are you likely to buy in the future?". This measure is often named "Intentions to Buy" (e.g. Bird and Ehrenberg, 1966b), and we will use the notation "I" to indicate "Intentions to Buy" or "Likelihood to Buy" a brand in the future, which will be used as synonyms throughout our work.

Our contribution here is to extend previous research relating Intentions to Buy to current and past Usage (e.g. Bird and Ehrenberg, 1966b) to services and to investigate the application of the Double Jeopardy phenomenon to the Likelihood to Buy measure. Additionally, we will analyze repeat-patterns between the two interviews (see Chapter 9).

8.2.1. Likelihood to Buy and Current Brand Usage.

The relationship between the Likelihood to Buy measure and current brand Usage is illustrated in Table 8.9. for Fast Food Restaurants, where we ordered the brands by their claimed Usage (i.e. relative "size").

TABLE 8.9.
The Relationship Between Intentions and Usage - 1st Interview.

Fast Food Chains			
Brands by Usage	Usage	Intentions	
		Obs.	Pred.
	%	%	$I=9.7\sqrt{U}$
McDonald	61	70	75
B.King	59	72	74
Wendy	48	74	67
Hardee	28	44	51
D.Queen	20	48	43
Varsity	28	43	41
Krystal	7	26	26
Average	34	54	54
MAD			4
r with Usage		.95	
r with Obs.			.96

NOTES: Obs. = Observed; Pred. = Predicted
MAD = Mean Average Deviation

The results in the first two columns of Table 8.9. highlight that for services, as well as for frequently purchased goods (see Bird and Ehrenberg, 1966b), considerably fewer respondents say are likely to buy a smaller than a larger brand. The results for all four product fields are similar to the ones for Fast Food Chains, with correlations between Likelihood to Buy and claimed Usage close to one.

Bird and Ehrenberg had also established the form of the relationship between Intentions to Buy and Usage in terms of: $I = K \sqrt{U}$. This relationship is now confirmed for Fast Food Restaurants (last column in Table 8.9.). The fit is between +/- 4 percentage points, with a correlation of .96 between Observed and Predicted values. The size of the coefficient K is about 10, as generally obtained by Bird and Ehrenberg in their 1966 study. Similar results apply to TV News.

However, a simple linear relationship of the form: $I = L*U$ gives better predictions of Intentions for Laundry Detergents (and for Breakfast Cereals), as illustrated in Table 8.10.. The fit is between +/- 3 percentage points, with a correlation between Predicted and Observed values of .96. The relationship $I = K \sqrt{U}$ for Laundry Detergents would have fitted only between +/- 6 percentage points. Equivalent results are obtained at the second interview and for Breakfast Cereals.

On the other hand, the linear relationship $I = L*U$ would have yielded a very bad fit for Fast Food Chains, i.e. between +/- 13 points. Similar results would apply to the second interview and to TV News.

TABLE 8.10.
The Relationship Between Intentions and Usage - 1st Interview.

Laundry Detergents				Fast Food Chains			
Brands by Usage	Usage	Intentions		Brands by Usage	Usage	Intentions	
		Obs.	Pred.			Obs.	Pred.
	%	%	I=1.1U		%	%	I=9.7√U
Tide	54	53	59	McDonald	61	70	75
Woolite	32	46	35	B.King	59	72	74
Cheer	24	23	26	Wendy	48	74	67
Bold 3	23	20	25	Hardee	28	44	51
Wisk	22	24	24	D.Queen	20	48	43
Gain	16	16	18	Varsity	28	43	41
Oxydol	8	10	9	Krystal	7	26	26
Era	7	8	8				
ColdPower	2	5	2				
Duz	2	4	2				
Average	19	21	21	Average	34	54	54
MAD			3	MAD			4
r with Usage		.96		r with Usage		.95	
r with Obs.			.96	r with Obs.			.96

NOTES: Obs. = Observed; Pred. = Predicted
MAD = Mean Average Deviation

The curvilinear relationship devised by Bird and Ehrenberg almost 30 years ago is found here to apply when the numerical values of Intentions and Usage differ substantially (e.g. for the Fast Food Chains in Table 8.9.), or when the Usage definition employed is fairly narrow as in the case of "Once every fortnight or more often" for TV News.

On the other hand, when the Usage definition employed is broad as "Once every quarter or more often" for Laundry Detergents in Table 8.10. and/or the numerical values of Intentions and Usage are close, as for Breakfast Cereals, a simple linear relationship of the form: $I = L*U$ gives better predictions of Intentions.

The UK results followed the same general rule, with no very large differences between Likelihood to Buy and Claimed Usage percentages and a linear relationship between the two variables. The fit there was within an average of 3 percentage points and the slope-coefficients varied from 1.2 to 1.5 between products.

Table 8.10. also highlights that for product fields with generally high usage claims (such as Fast Food Chains) the stated Intentions are also high, compared with product fields (such as Laundry Detergents) with lower usage claims throughout.

8.2.2. The Relationship with Past Usage.

The results of the previous section (and also of the UK and of the 1966 data) highlight that the percentage of respondents stating a Likelihood to Buy (watch, eat at) in the future is typically larger than the percentage of users. Depending on the usage definition adopted, the difference between Intentions and Usage percentages can be quite large. Likely explanations are: (i) that our likely-to-buy question is open ended, i.e. "likely to buy in the future", rather than forced-choice as for the buying claims, and (ii) that some past as well as some current users express a likelihood-to-buy, as documented in Table 8.11. below, for the average brand in each product category.

TABLE 8.11.
Likelihood-to-Buy % by Claimed Usage Frequency - 1st Interview.

	FREQUENT USERS	INFREQUENT USERS	NEVER USED
	%	%	%
Laundry Detergents	65	10	2
Cereals	82	31	3
Fast Food Chains	81	46	5
TV News	82	23	4
Average product	78	28	4

NOTE: Frequent Users = "Users" as defined in Section 8.1.1.
Infrequent Users = "Less Often than Once a Month"[20]

Table 8.11. summarizes a steep downward gradient of the likelihood-to-buy % with decreasing frequency of buying the brand. For example, for Fast Food Chains 81% of Frequent Users said that they were likely to make a purchase there in the future, versus 46% of Infrequent Users and only 5% of Never Users. The results at the second interview closely replicate the pattern above.

The finding that some (though few) non- or past users intend to buy the brand in the future explains the relationship between the Likelihood to Buy percentages and the current brand usage reported in Tables 8.9. and 8.10.. A large brand has relatively many "Users" (Table 8.2.), many of which say they are likely to buy the brand in the future (Table 8.11.), and it has few Non "Users", few of which intend to buy it in the future. The opposite is true for a small brand, which has relatively few "Users" (see Table 8.2.) and many "Non-Users". This, combined with the multi-brand buying patterns discussed above, explains also the higher Likelihood to Buy

[20] For Laundry Detergents Infrequent Users are the "Less Often than Once a Quarter" buyers.

percentages for the two services, since, as already noted, their Usage shares were generally higher, even for small brands, compared with the two frequently purchased goods categories.

This leads us to the topic of Double Jeopardy, which is discussed in detail in the next sub-section.

8.2.3. Double Jeopardy.

The phenomenon of Double Jeopardy, which was described as a general theory in Chapter 4 and more specifically for attribute beliefs in Chapter 6, also occurs to some extent for the Likelihood to Buy responses *amongst* the "Users" of each brand, as illustrated in Table 8.12. for the results at the first interview.

TABLE 8.12.
Likelihood to Buy *Amongst* the "Users" of Each Brand - 1st Interview

Laundry Detergents		Cereals		Fast Food Chains		TV News	
Brands by Usage	Intentions among "Users"	Brands by Usage	Intentions among "Users"	Brands by Usage	Intentions among "Users"	Brands by Usage	Intentions among "Users"
	%		%		%	Daily Prog.	%
Tide	88	Raisin Bran	88	McDonald	90	11 Alive	86
Woolite	71	Cheerios	87	B.King	89	Chnl. 2 News	80
Cheer	65	K.CornFlak.	84	Wendy	89	EyeWitness	82
Bold 3	73	Frost.Flak.	77	Hardee	82	CBS	83
Wisk	68	All Bran	76	D.Queen	69	NBC	76
Gain	58	NutCheer.	93	Varsity	83	ABC	80
Oxydol	65	Frt Loops	66	Krystal	62	McNeilLehrer	71
Era	71	Rice Chex	89				
Cold Power	75	Wts.Rais.	82			Weekly Prog.	
Duz	20	CocaPuffs	84			60 Minutes	89
		BooBerry	100			20/20	87
Average	65	**Average**	82	**Average**	81	**Average**	82
r with Use	.58	**r with Use**	.20	**r with Use**	.85	**r with Use** Daily Prog.	.44 .85

Table 8.12. shows that for all product categories except for Cereals there is a small gradient (sometimes obscured because of the small number of "Users" for the smallest brands) of the Likelihood to Buy responses with Usage. The emerging trend is that a small brand not only has fewer "Users" than a large brand, but also fewer of them tend to say they are likely to buy it in the future (hence the Double Jeopardy for a small brand). The correlations between purchase intentions and usage vary from almost .6 for Laundry Detergents to .85 for Fast Food Chains and Daily TV News Programmes.

The low correlations for Cereals can be attributed to the strong sub-grouping highlighted in Section 8.1.3. between sugar coated/children's brands (i.e. Frosted Flakes and Fruit Loops) and "health" brands (i.e. Raisin Bran, All Bran, and Wheat Raisins). As we saw earlier there is a "negative" duplication between the buyers of sugar coated and "health" brands: the buyers of brands in one group are less likely to buy any of the brands in the other category. The two kinds of cereals are therefore not considered by their buyers as of "equal merit", a condition that McPhee had postulated as necessary for Double Jeopardy to occur. However we were surprised not to find much evidence of DJ even *within* the sugar coated/children's brands and the "health" brands sub-groups.

Not so strong sub-groupings, as between Liquid and Powder detergents, do not seem to prevent the occurrence of the Double Jeopardy pattern. As a matter of fact, and in spite of some differences between brands in all product fields, previous research in both buying and consumer behaviour (e.g. Ehrenberg et al., 1990) has shown that exceptions to the occurrence of Double Jeopardy are few and far between (Ellis, 1989; Uncles and Ehrenberg, 1988).

In the UK the correlations between the expressed Likelihood to Buy the brands in the future amongst "Users" and the claimed Usage ("Once a month or more often") vary from .4 for Canned Soups (with strong sub-groupings between the brands) to about .7 for Fizzy Soft Drinks and Toothpastes.

Double Jeopardy is therefore established as an often fairly weak trend, and with the noted "exceptions", for Likelihood to Buy. Its occurrence had not been noticed before by other writers, including Bird and Ehrenberg in 1966. The phenomenon will be further discussed below for advertising recall and beliefs about attributes.

In summary, in this section we have:

* confirmed and extended to services the knowledge that the percentage of expressed Likelihood to Buy a brand in the future is strictly related to the current and past usage of the brand, with higher purchase intentions relating to the brands more frequently used;
* identified that the *form* of the relationship between Intentions and Usage tends to be linear for broader usage definitions and when the percentages of stated intentions and of claimed usage are similar. Otherwise the relationship tends to be curvilinear, as previously found by Bird and Ehrenberg (1966b);
* established that a Double Jeopardy trend generally occurs between Likelihood to Buy amongst "Users" and Usage. The instances of low correlations are due, at least in part, to unusually strong sub-clusterings of brands.

The above findings have managerial relevance in as far they offer a guide-line to managers for the interpretation of similar kinds of data concerning their brands.

Firstly and foremost managers should be aware that Intentions reflect current and past usage, rather than any changes in future usage, as it will emerge also from the results discussed in Chapter 11.

Secondly managers should take into account the relative sizes (or market shares) of brands when making comparisons between the Intentions to Buy of different brands. For example, the relationships with U discussed in Section 8.2.1. give benchmarks for assessing the "normal" Intentions to Buy for brands of different sizes.

Finally managers should be conscious that Double Jeopardy might be a factor regulating the Intentions to Buy levels within their product field. For example, in many cases it would be unrealistic to expect a small, established brand to achieve higher and long lasting Intentions to Buy than a larger brand, even after substantial promotional activity.

We now turn our attention to Advertising Recall.

8.3. ADVERTISING RECALL.

Our aim here was to establish the degree to which advertising recall behaves like other attitudinal and intentions measures and is related to the current and past usage of the brand.

Our main hypothesis was that advertising for a brand will be noticed more by the current users than by the non-users. As we discussed in Chapter 6, strong empirical evidence of this is still lacking, although several researchers have supported this idea on the theoretical basis of Cognitive Dissonance reduction. Only limited support to this hypothesis comes so far from empirical research such as tracking studies, according to which "*users are not that much more likely to notice advertising than non-users*" (Brown et al., 1992).

Although the original questionnaire was not designed with the purpose of validating the above hypothesis, we will seek answer to this question, as far as our measures will allow us, partially here and partially in Chapter 11 when examining the relationship between advertising recall and changes in usage over time.

8.3.1. The relationship with Current and Past Brand Usage.

We start by looking at the general relationship between Advertising Recall and Usage of the brand. Results for the four product fields at the first interview are illustrated in Table 8.13.. The results at the second interview closely replicate the ones reported below.

TABLE 8.13.
Advertising Recall - 1st Interview.

Laundry Detergents		Cereals		Fast Food Chains		TV News	
Brands by Usage	Advert. Recall	Brands by Usage	Advert. Recall	Brands by Usage	Advert. Recall	Brands by Usage	Advert. Recall
	%		%		%		%
Tide	67	Raisin Bran	35	McDonald	88	11 Alive	75
Woolite	48	Cheerios	42	B.King	76	Chnl. 2 News	70
Cheer	57	K.CornFlak.	30	Wendy	68	EyeWitness	66
Bold 3	42	Frost.Flak.	39	Hardee	43	CBS	43
Wisk	29	All Bran	24	D.Queen	33	NBC	46
Gain	36	NutCheer	34	Varsity	5	60 Minutes	51
Oxydol	27	Frt Loops	22	Krystal	28	ABC	39
Era	21	Rice Chex	22			20/20	49
Cold Power	11	Wts.Rais.	22			McNeilLehrer	16
Duz	5	CocaPuffs	21				
		BooBerry	10				
Average	34	**Average**	27	**Average**	49	**Average**	51
r with Usage	.91	**r with Usage**	.79	**r with Usage**	.92	**r with Usage**	.84

One would expect larger brands (e.g. the Fast Food Chain McDonald) to receive larger advertising support than smaller brands (e.g. the local chain Varsity). Hence the strong correlation (.8 or higher) between Advertising Recall and Usage in Table 8.13. is not surprising.

However, there is an additional factor, namely that more current than past Users of a brand remember seeing it advertised, as documented in Table 8.14. below for the average brand in each product field.

TABLE 8.14.
Advertising Recall % by Claimed Usage Frequency - 1st Interview.

	"USERS"	"NON-USERS"	ALL RESPONDENTS
	%	%	%
Laundry Detergents	44	30	34
Cereals	39	23	27
Fast Food Chains	55	40	49
TV News	58	37	51
Average product	49	33	40

Table 8.14. shows a small downward gradient of the Advertising Recall % with decreasing frequency of buying the brand. For example, 55% of the "Users" of Fast Food Chains remembered seeing advertising for the average brand, while 40% of "Non-Users" did so.

This further explains the results of Table 8.13., since a large brand not only is generally supported by a high advertising budget, but many of its numerous "Users" recall seeing an advertisement, as well as some of its few "Non Users". The opposite is true for a small brand, with its relatively few "Users" and its many "Non-Users" (see Table 8.2.). This also justifies the higher advertising recall for the two services in Table 8.13., for the same reasons outlined in the previous section.

However, the gradient of advertising recall with the frequency of using the brand is not very large, as had been remarked by Brown et al. (1992). For example, they had found that "*500 GRPs to users are noticed about as much as 800 GRPs to non-users*", which they reckoned, was not a big difference in relation to the differences commonly found between different ads.

A finer breakdown between usage groups than the one illustrated in Table 8.14. might, we reckon, give a somewhat steeper gradient in Advertising Recall.

We will be able to further study this relationship when dealing with changes in usage and in advertising recall over time (see Chapter 11).

We now investigate if the phenomenon of Double Jeopardy applies to advertising recall as well.

8.3.2. Double Jeopardy for Advertising Recall.

In Table 8.15. we report the Advertising Recall responses among the "Users" of each brand in each product field.

TABLE 8.15.
Advertising Recall *Amongst* the "Users" of Each Brand - 1st Interview.

Laundry Detergents		Cereals		Fast Food Chains		TV News	
Brands by Usage	Adv. Recall among "Users"	Brands by Usage	Adv. Recall among "Users"	Brands by Usage	Adv. Recall among "Users"	Brands by Usage	Adv. Recall among "Users"
	%		%		%	Daily Prog.	%
Tide	80	Raisin Bran	41	McDonald	93	11 Alive	80
Woolite	53	Cheerios	61	B.King	83	Chnl. 2 News	78
Cheer	63	K.CornFlak.	48	Wendy	74	EyeWitness	70
Bold 3	50	Frost.Flak.	47	Hardee	45	CBS	49
Wisk	30	All Bran	24	D.Queen	38	NBC	54
Gain	48	NutCheer.	55	Varsity	6	ABC	42
Oxydol	65	Frt Loops	24	Krystal	46	McNeilLehrer	32
Era	29	Rice Chex	26				
Cold Power	25	Wts.Rais.	41			Weekly Prog.	
Duz	0	CocaPuffs	27			60 Minutes	54
		BooBerry	0			20/20	65
Average	44	**Average**	39	**Average**	55	**Average**	58
r with Use	.73	**r with Use**	.58	**r with Use**	.85	**r with Use**	.76
						Daily Prog.	.88

NOTE: The Average and the r with Use for Detergents and for Cereals are calculated without the smallest brand

Table 8.15. shows a Double Jeopardy pattern for Advertising Recall, whereby smaller brands have fewer "Users", fewer of which remember the advertising for the brand. The gradient of responses from the larger to the smaller brands is wider here than it was for Intentions, probably reflecting the differences in advertising spend between brands.

The correlations between advertising recall and usage are .7 or higher except, once again, for Cereals. The correlation of "only" about .6 for Cereals is conceivably caused by the already noted sub-groups in the brands listed: if a brand (e.g. a children's brand) is bought but actually is not consumed by the respondent, the advertising for it might not be recalled as much ~~than~~ as for a brand actually eaten. This seems to confirm earlier results in this direction.

Results at the second interview and in the UK are of similar nature and corroborate the interpretation of the results given here.

In summary, the analysis concerning Advertising Recall indicate that:

* the percentage of respondents recalling having seen advertising for a brand is strongly related to the usage of the brand itself;
* there is a Double Jeopardy trend for Advertising Recall amongst "Users". A small brand not only has fewer "Users" than a large brand, but fewer of them recall the advertising;
* there is consistent evidence throughout the data that more "Users" of a brand recall seeing advertising for it than its "Non-Users", although the gradient between our two groupings is not very large.

Our results are consistent with the stream of literature reviewed in Chapter 6 linking the degree of Advertising Recall with previous brand purchasing. However, such a link is sometimes weak.

We now turn to attribute beliefs, for which we will extend previous results to services, and will discuss ways of discriminating between "Evaluative" and "Descriptive" attributes. We will also investigate issues regarding the number of brands mentioned for each attribute and the number of attributes mentioned for each brand.

8.4. BELIEFS ABOUT ATTRIBUTES.

In the following four sub-sections we further previous research in the UK and the US regarding the distinction between different kinds of attributes[21].

In Sub-section 8.4.5. we analyze the number of brands mentioned for each attribute and the number of attributes mentioned for each brand. Finally, in Section 8.5. we will deal with issues of validity and reliability.

8.4.1. Beliefs about Attributes and Current Brand Usage.

Consistently with the rest of the analysis so far, we analyze Beliefs about Attributes against the Usage criterion.

Because of the large amount of data, i.e. some 11 beliefs for each brand in each product field, first we discuss the detailed results of one product (i.e. Breakfast Cereals - Table 8.16.), then we show (Table 8.17.) that the general pattern of results also applies to the other products.

The results for Breakfast Cereals in Table 8.16. illustrate the already known pattern (see Chapter 6) of high correlation with Usage for some attributes and of low or even negative correlations for other attributes (e.g. Barwise and Ehrenberg, 1985; Castleberry and Ehrenberg, 1990).

The first four attributes in Table 8.16. do not appear to be affected by sub-groupings among brands (e.g. any brand should "Taste Nice"), and vary mainly with the usage (or market share) of the brands themselves. Their correlation with usage ranges from .75 to over .9.

Bird and Ehrenberg (1970) named this kind of attributes "evaluative", since they seem to reflect each consumer's evaluation of a brand: I "like it" (since it "tastes nice", or it is "good value for money", etc.), and hence I "value it" (and not surprisingly I tend to buy it or, vice-versa, since I often buy it, it must mean that I like it! - Bem, 1968).

On the other hand, low or even negative correlations with Usage for the last five attributes in Table 8.16. arise because of specific brands/attribute combinations, such as Coca Puffs and Boo Berry (the two smallest brands) being considered by over half of the respondents as "Fun for Children to Eat", while hardly anyone mentions that same attribute for the larger brands Raisin Bran or All Bran.

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[21] The figures in this Chapter differ slightly from those in Castleberry and Ehrenberg (1990) because they refer to the respondents who were re-interviewed twice.

TABLE 8.16.
Attribute Beliefs Mentions - Breakfast Cereals - 1st Interview

		Mainly "Evaluative"				"?"		Mainly "Descriptive"					Average 11 Attributes
Brands by Usage	% "Users"	Keep Coming Back To	Popular With Family	Taste Nice	Good Value for Money	Reasonably Priced	Nourishing	Very Natural Flavour	Help You to Keep Fit	Low in Sugar	Stay Crispy in Milk	Fun for Children to Eat	
	%	%	%	%	%	%	%	%	%	%	%	%	%
Raisin Bran	34	44	37	59	34	28	59	26	46	12	7	6	33
Cheerios	34	37	40	46	41	46	37	27	21	43	36	30	37
K. Corn Flakes	25	40	29	45	56	64	34	36	19	40	17	4	35
Frosted Flakes	15	14	28	53	13	20	6	2	1	0	10	36	17
All Bran	17	18	7	20	21	24	63	58	71	58	9	0	32
Nut Cheerios	15	12	19	35	14	18	17	6	4	2	11	24	15
Fruit Loops	15	6	11	23	9	17	5	2	2	0	7	79	15
Rice Chex	10	17	17	35	22	33	35	36	20	44	38	6	28
Wheat Raisins	8	7	11	33	11	16	33	16	20	9	18	5	16
Coca Puffs	5	0	6	20	9	16	4	2	2	1	4	55	11
Boo Berry	1	0	3	9	8	15	4	1	1	1	0	56	9
Average	16	18	19	34	22	27	27	19	19	19	14	27	22
r with U		.93	.88	.75	.78	.63	.60	.43	.44	.40	.33	-.30	.53

NOTE: The r for the average attribute is the average of individual attributes

Attributes with low (typically .5 or less) or negative correlations with Usage were named by Bird and Ehrenberg (1970) as "descriptive", being apparently related to characteristics salient to specific brands or subgroups of brands (e.g. children versus "healthy" brands), or to a strong advertising message[22]. There is an unusually high number of such instances in Table 8.16. because of the already noted strong sub-grouping between brands of Breakfast Cereals.

Nonetheless, within most product fields, the majority of (or all) attributes are strongly correlated with the usage of the brand, as summarized in Table 8.17. for the data at the first interview (similar results apply to the second interview and to the British data).

The correlations for "evaluative" attributes in Table 8.17. range from .62 for TV News to .80 for Fast Food Chains. If only daily programmes are considered, the correlation of TV News' attributes with usage raises to .82. On the other hand, "descriptive" attributes show correlations with usage ranging from -.09 for TV News (.25 for daily) to .34 for Laundry Detergents.

TABLE 8.17.
Attribute Beliefs Mentions - 1st Interview.
(Average Attributes)

Laundry Detergents			Fast Food Chains		TV News		
Brands by Usage	Average 7 Evaluative Attributes	Average 4 Descriptive Attributes	Brands by Usage	Average 12 Evaluative Attributes	Brands by Usage	Average 10 Evaluative Attributes	Average 3 Descriptive Attributes
	%	%		%		%	%
Tide	54	20	McDonald	57	11 Alive	56	36
Woolite	18	54	B.King	55	Chnl.2 News	48	32
Cheer	33	20	Wendy	63	EyeWitness	49	34
Bold 3	33	21	Hardee	35	CBS	45	41
Wisk	25	21	D.Queen	36	NBC	47	39
Gain	25	12	Varsity	37	60 Minutes	46	60
Oxydol	25	10	Krystal	30	ABC	41	37
Era	18	12			20/20	42	52
C. Power	16	23			McNeilLehre	33	34
Duz	14	8			r		
Average	26	20	**Average**	45	**Average**	45	41
r with Usage	.74	.34	**r with Usage**	.80	**r with Usage**	.62	-.09
					(daily progr.)	.82	.25

[22] While the "descriptive" and "evaluative" terminology has been strongly questioned (e.g. Rossiter, 1987; see also Barwise and Ehrenberg, 1987), we believe it is a useful way of describing two quite different kinds of attributes.

Although useful in bringing out the main pattern in the data, the relative size of the correlation coefficients are not a sufficient criterion for discriminating between "descriptive" and "evaluative" attributes: not only high correlations can be obtained just as an effect of the large spread of the values, but the cut-off point between the two kinds of attributes can be subjective. Hence the "?" for the attributes "Reasonably Priced" and "Nourishing" in Table 8.16., with mid-range correlations of about .6.

The same "evaluative"/"descriptive" pattern is brought out by two additional ways of analysing the data: (i) the attribute mentions of "Users" compared with those of "Non-Users"; and (ii) the occurrence of Double Jeopardy among "Users".

Because "evaluative" attributes are salient to the product category as a whole and are strongly correlated with Usage, belief responses of "Users" should be considerably higher than those of "Non-Users". On the other hand, since "descriptive" attributes are brand specific factors, derived either from advertising or from an prominent and distinctive characteristic of the brand, both "Users" and "Non-Users" should be able to recognize the features that have become over time closely associated with individual brands (e.g. that All Bran would not be "Fun for Children to Eat").

Additionally, "evaluative" attributes should be characterised by an obvious Double Jeopardy trend. This, according to McPhee (1963), has to occur as a statistical selection effect in "Users'" liking whenever different items are regarded as of equal merit but have different popularity. On the other hand, for "descriptive" attributes brands differ in their merits and this should shows up as deviation from the general Double Jeopardy trend.

We illustrate the results for the belief mentions of "Users" versus "Non Users" and for Double Jeopardy in the next two sub-sections[23], then we discuss the main issues connected with this kind of analysis.

A fourth, novel relationship, namely the association between Repeat-Rates and Usage for the two kinds of attributes will be discussed in Chapter 9.

[23] Because we have employed three criteria to classify "evaluative" and "descriptive" attributes, our sub-groupings here differ slightly from Castleberry and Ehrenberg (1990) which had employed only the correlations with Usage for discriminating between different types of attributes.

8.4.2. The Relationship with Past Usage.

In Table 8.18. we compare the differences of belief mentions between "Users" and "Non Users" of Breakfast Cereals at the first interview (see Appendix C for the other products).

A considerably larger percentage of "Users" than of "Non-Users" is found to mention certain attributes: the difference can be quite large, i.e. up to an average 46 percentage points in Table 8.18.. Larger differences apply to the attributes that, on the basis of correlation coefficients, had been classified as "evaluative". This helps explaining the high correlations between these attributes and the Usage of the brand, since large brands have more current "Users" than smaller brands.

For mainly "descriptive" attributes, however, there are below average differences between the percentage of "Users" and of "Non-Users" mentioning those attributes for a specific brand. This is because both "Users" and "Non-Users" can recognize features obviously associated (or not) to a specific brand (e.g. that the Cereal brand Frosted Flakes is not "Low in Sugar"). Surprising are the large differences between "Users" and "Non-Users" for the attribute "Stay Crispy in Milk" which has been consistently found to be "descriptive" in the UK (e.g. Barwise and Ehrenberg, 1985).

The differences between "Users" and "Non-Users" for the attributes "Reasonably Priced" and "Nourishing" are also among the lowest (see discussion in Sub-section 8.4.4.).

The results at the second interview are basically the same.

TABLE 8.18.

Difference in Belief Mentions Between "Users" and "Non Users" - 1st Interview

(Breakfast Cereals)

	Belief Mentions of "Users" minus Belief Mentions of Non "Users"											
	Mainly "Evaluative"				"?"		Mainly "Descriptive"					Average 11 Attributes
Brands by Usage	Keep Coming Back To	Popular With Family	Taste Nice	Good Value for Money	Reasonably Priced	Nourishing	Very Natural Flavour	Help You to Keep Fit	Low in Sugar	Stay Crispy in Milk	Fun for Children to Eat	
Raisin Bran	65	46	45	32	19	31	5	18	9	7	1	25
Cheerios	62	47	41	48	40	32	29	26	48	34	7	38
K. Corn Flakes	52	35	23	38	16	-2	4	8	26	15	-2	19
Frosted Flakes	58	42	36	-3	-1	0	6	-2	0	1	-11	11
All Bran	54	11	23	30	19	32	17	26	14	18	-1	22
Nut Cheerios	58	60	51	18	-1	24	2	11	2	30	18	25
Fruit Loops	20	25	24	7	0	-2	1	6	0	15	13	10
Rice Chex	77	67	54	45	28	21	20	12	11	16	7	33
Wheat Raisins	46	35	58	27	23	31	15	-2	-2	34	14	25
Coca Puffs	9	14	28	-7	-16	-4	8	8	8	34	11	8
Boo Berry	0	-3	41	-8	-15	-4	-1	49	50	0	44	14
Average	46	34	39	21	10	14	10	15	15	19	9	21

8.4.3. Double Jeopardy for Belief Mentions.

The results in Table 8.19. illustrate that there is a more marked gradient (i.e. Double Jeopardy trend) in belief response *among* the "Users" of each brand for the attributes which had been classified as "evaluative" by the previous two criteria than for the "descriptive" attributes.

For "evaluative" attributes, the correlations in Table 8.19. are not very large (i.e. r=.55 on average) partly because of the already noted sub-grouping of brands, and partly because the pattern is sometimes obscured by the tiny sample size of the smallest brands[24].

For "descriptive" attributes the correlations between "Users'" mentions and usage are generally much lower (i.e. r=.1 on average) than for "evaluative" attributes, since most "Users" of even a small brand will mention an attribute typically descriptive of that brand (e.g. that Coca Puffs is "Fun for Children to Eat").

The very low correlation of .27 between response and usage for "Taste Nice" is a freak result, since the coefficient at the second interview is .61, and research in the UK persistently shows high correlations with usage for this attribute. Hence we have left "Tastes Nice" among the "evaluative" attributes. Correlation coefficients at the second interview are across the board .1 or so higher than those at the first, but otherwise the results match.

The attribute "Reasonably Priced" has among the highest correlation with usage (r=.66). The attribute "Nourishing" also shows reasonably high correlation with usage, given the range of correlation values in Table 8.19..

We summarize the results for the other products in Appendix C.

The results just described regarding correlations between belief mentions and Usage among all respondents and among "Users", and the differences in responses between "Users" and "Non Users" are pretty much consistent in identifying two broad attribute types.

In the next sub-section we discuss issues arising from this kind of analysis.

[24] We should also note that the DJ correlations for Intentions to Buy in Table 8.12. were not very high either.

TABLE 8.19.
Double Jeopardy for Belief Mentions - 1st Interview
(Breakfast Cereals)

Brands by Usage	Mainly "Evaluative"				"?"		Mainly "Descriptive"					Average 11 Attributes
	Keep Coming Back To	Popular With Family	Taste Nice	Good Value for Money	Reasonably Priced	Nourishing	Very Natural Flavour	Help You to Keep Fit	Low in Sugar	Stay Crispy in Milk	Fun for Children to Eat	
	%	%	%	%	%	%	%	%	%	%	%	%
Raisin Bran	81	62	81	51	38	76	26	56	16	12	7	46
Cheerios	73	66	70	67	67	55	40	37	70	52	36	58
K. Corn Flakes	72	50	58	80	74	32	36	22	56	26	2	46
Frosted Flakes	63	60	80	10	20	7	7	0	0	10	27	26
All Bran	62	15	38	44	38	88	71	91	68	24	0	49
Nut Cheerios	59	69	76	28	17	38	7	14	3	34	38	35
Fruit Loops	21	31	41	14	17	3	3	7	0	17	90	22
Rice Chex	84	74	79	63	58	53	53	32	53	53	11	56
Wheat Raisins	47	41	82	35	35	59	29	18	6	47	18	38
Coca Puffs	9	18	45	0	0	0	9	9	9	36	64	18
Boo Berry	0	0	50	0	0	0	0	50	50	0	100	23
Average	52	44	64	36	33	37	26	31	30	28	36	38
r with Usage	.69	.55	.27	.68	.66	.51	.33	.22	.25	.09	-.40	.62

8.4.4. "Evaluative" versus "Descriptive" Attributes

In the previous three sections we have related attribute mentions to three "interdependent", but quite different aspects of Usage with the purpose of describing the increasingly consistent pattern that some attributes are strongly related with Usage and others are not.

In practice we have applied a post-hoc analysis conceptually very close to the kind of analytic techniques commonly used in statistics and involving a sort of "regression diagnostic".

One of those techniques is Factor Analysis, which also aims at identifying (ex-post) clusters or sub-patterns in the observed data. However, Factor Analysis has the main drawbacks of: i) involving analytic assumptions which are not numerically very clear; ii) leading to quite arbitrary labelling (and interpretation) of "factors"; and consequently iii) being unsuitable to differentiated replication.

In contrast, our aim here was simply to describe two main, recurring patterns in the data, i.e. that: i) there is one "*common factor*" - Usage - among the attributes within a product category; but ii) there are several "*specific factors*" to certain/brands attributes combinations.

The "labels" "evaluative" and "descriptive" are a useful way of conceptualising the range of results without aspiring to give any substantive psychological meaning to the findings (as often done in Factor Analysis). Using "labels" to describe different kinds of attributes is common practice in consumer research (e.g. "search" versus "experience" attributes in Wright and Lynch, 1995).

The three relationships with usage described in the previous three sub-sections are overall consistent in identifying two types of attributes, but should not be used purely as a means of "classifying" attributes as "evaluative" or "descriptive". As a matter of fact, we have used throughout the qualifier *mainly* to indicate that, even within an attribute with a clear "evaluative" pattern for most brands, there can be recurring exceptions, such as the Cereal All Bran consistently being "different".

Similarly, the fact that the three criteria are a bit unclear in positioning some attributes (e.g. "Reasonably Priced" and "Nourishing" in our example earlier) should not detract our attention from the following main issues:

i) there are some attributes that are clearly closely related to Usage and are therefore "evaluative" of characteristics common to the product category as a whole. The All Bran type of isolated "descriptive" exceptions are themselves predictable (across all the data sets). As a matter of fact, in pilot work Professor Castleberry had asked five judges to independently assess

deviations and describe why they thought those deviations had occurred. In his methodology notes he recounts that "*there was a great deal of agreement among these independent judges*";

ii) there are other attributes which are clearly not closely related to Usage. These are the attributes where the All Bran type of exceptions dominate: namely there are many very high attribute mention percentages for some brands (no matter what their Usage is) and very low for other (even large) brands. This usually happens consistently across different studies (e.g. the UK and the US data sets), it fits in with general experience (i.e. high agreement again amongst judges of what and why these exceptions should be) and it is also pretty consistent across the three criteria discussed above;

iii) the apparent anomalies or mixed cases (e.g. "Reasonably Priced" and "Nourishing" in the Cereal example earlier) still fit broadly into the above and are not many nor very dramatic exceptions;

iv) the "evaluative" and "descriptive" labels are a effective way of verbalising the above patterns in a simple and summary manner.

Awareness of these different patterns can be useful to managers for the interpretation of attitudinal statements. For example, managers should question to what extent are attributes "determinant" (e.g. Myers and Alpert, 1968; Alpert, 1971; Armacost and Hosseini, 1994) in influencing consumers' choices and to what extent do they merely reflect the market share of the brand?

We now further the analysis on attribute beliefs by discussing issues concerned with the number of brands mentioned for each attributes and the number of attributes mentioned for each brand.

8.4.5. The Number of Mentions.

The free-choice format of the questionnaire (see Appendix A) allowed respondents to mention many or few of the listed brands for each attribute. We analyzed the number of brands mentioned for each attribute to see how attributes would differ in how often they were mentioned and in the average number of brands mentioned for each.

We then looked at the number of attributes mentioned by the "Users" of each brand to see if there was a Double Jeopardy (DJ) relationship between the size of the brand and the number of attributes mentioned.

This part of the research was exploratory, since there was no previous research on the matter and we did not have any comparable data in the UK.

The data in Table 8.20. shows that some attributes are mentioned by twice as many people as other attributes. The gradient can be quite steep, e.g. from 76% to 33% for Fast Food Chains. On the other hand, the number of brands mentioned mostly does not vary much from attribute to attribute, and, on average, only two or three of the possible brands are mentioned for each attribute. However, slightly more brands are mentioned for "high" than for "low" mention attributes, as particularly evident for the two services, since there is a wider absolute range there between attributes. This is a "size" effect of a Double Jeopardy kind, of which we will find other examples in Chapter 9. The correlation between the number of brands mentioned and the "size" of the attribute is close to 1.

Descriptive beliefs tend, overall, to be mentioned by a lower percentage of consumers and to have a lower number of brands mentioned, because they mainly refer to salient attributes of specific brands. This is fits in very well with the earlier discussion, although the mentions % are not far apart (e.g. 20% versus 23%, on average for the two kinds of attributes).

TABLE 8.20.
Average Number of Brands Mentioned for Each Attribute.

Laundry Detergents			Cereals			Fast Food Chains			TV News (daily)		
Attributes by Average Mention %	Average Mention %	No. of Brands	Attributes by Average Mention %	Average Mention %	No. of Brands	Attributes by Average Mention %	Average Mention %	No. of Brands	Attributes by Average Mention %	Average Mention %	No. of Brands
Good All Fabrics	31	3	Taste Nice	34	4	Open Conven. Times	76	5	Informative	65	4
Gets Stains Out	31	3	Fun for Children	27	3	Quick Service	58	4	Easy to Follow	64	4
Good in Cold Water	29	3	Nourishing	27	3	Friendly Staff	51	4	Pleasing Personalities	51	3
Gets Things White	26	2	Reasonably Priced	27	3	Tasting Food	46	3	Good Reporters	51	3
Reasonably Priced	25	2	Good Value Money	22	2	Good Whole Fam.	44	3	Effective Graphics	48	3
Good Fam. Wash	24	2	Very Natural Flavour	19	2	Consistent Qual.	43	3	Follow-up Stories	45	3
Clothes Smell Fresh	23	2	Low in Sugar	19	2	Has Wide Menu	39	3	G. Time Investment	45	3
Good Value Money	23	2	Help you Keep Fit	19	2	Fresh Ingredients	39	3	Fastest Coverage	43	3
Good for Soaking	19	2	Popular with Fam.	19	2	Special Orders	37	3	Indepth Coverage	38	3
Makes Clothes Soft	17	2	Keep Coming Back to	18	2	Appeal to Children	35	2	Make you Think	35	2
Gentle to Clothes	16	2	Stay Crispy in Milk	14	2	Good Value Money	35	2	Time on Key Stories	35	2
						Nutritious Food	33	2	Unbiased	34	2
									Help you Relax	12	1
Average	24	2	**Average**	22	2	**Average**	45	3	**Average**	44	3
r	.99		**r**	.99		**r**	.99		**r**	.99	

NOTE: r = correlation between Mention % and No. of Brands

We then analyzed the number of attributes mentioned by the "Users" of each brand. Our prediction was that the "Users" of a small brand would mention a smaller number of attributes than the "Users" of a large brand. We also wanted to test if such Double Jeopardy relationship could be expressed in a predictable format, similar to the well-established relationship $w*(1-b)=w_0$ between market shares and purchase frequency described in Chapter 5. Specifically we wanted to test if:

$$n*(1-u) = n_0$$

where n = the number of attributes mentioned among the "Users" of the brand, u = the claimed usage of the brand and n_0 = a constant for the product category (estimated as the average of the observed values n*(1-u)). We would then be able to predict the number of attributes mentioned for each brand, given the usage (or market share) of the brand, i.e.: $n = n_0/(1-u)$.

Results for Observed and Predicted values at the first interview[25] are reported in Table 8.21..

TABLE 8.21.
Number of Attributes Mentioned by the "Users" of Each Brand - 1st Interview.

Laundry Detergents				Cereals				Fast Food Chains				TV News			
Brands by U	U	No. of Attributes Mentioned		Brands by U	U	No. of Attributes Mentioned		Brands by U	U	No. of Attributes Mentioned		Brands by U	U	No. of Attributes Mentioned	
	%	Obs	Pred		%	Obs	Pred		%	Obs	Pred		%	Obs	Pred
Tide	54	6	7	Raisin Bran	34	5	6	McDonald	61	8	8	11 Alive	80	7	15
Woolite	32	4	5	Cheerios	34	6	6	B.King	59	8	8	Channel 2	75	6	12
Cheer	24	5	4	K.CornFlakes	25	5	5	Wendy	48	8	7	Eye Witness	74	7	12
Bold3	23	4	4	Frosted Flakes	15	3	4	Hardee	28	5	6	CBS	66	7	9
Wisk	22	4	4	All Bran	17	5	4	D.Queen	20	6	6	NBC	62	7	8
Gain	16	4	4	Nut Cheer	15	4	4	Varsity	18	6	6	60 Minutes	56	7	7
Oxydol	8	4	4	Fruit Loops	15	3	4	Krystal	7	6	6	ABC	48	7	6
Era	7	4	4	Rice Chex	10	6	4					20/20	37	7	5
				Wheat Raisin	8	4	4					McNeil	13	8	3
Average	23	4	4	**Average**	19	5	5	**Average**	32	7	7	**Average**	57	7	8
r with Usage	0.78			**r with Usage**	0.44			**r with Usage**	0.84			**r with Usage**	-0.72		
r (Obs.,Pred.)		0.81		**r (Obs.,Pred.)**		0.53		**r (Obs.,Pred.)**		0.90		**r (Obs.,Pred.)**		-0.58	
MAD		0.38		**MAD**		0.67		**MAD**		0.29		**MAD**		3	

NOTES: The two smallest brands of Detergents and Cereals have been excluded from the analysis because of their small sample size.
MAD = Mean Average Deviation between Observed and Predicted values.

[25] Results for the data at the second interview are very similar to the ones reported here.

In contrast with wide variations in their usage shares, brands do not vary much in the number of attributes mentioned, but smaller brands tend to be associated with a lower number of attributes. Hence there is a Double Jeopardy for smaller brands, except for TV News where the Observed number of attributes mentioned is high across the board and varies hardly at all between brands of different sizes. This is another instance where DJ is not found to apply to TV News (cfr. with previous findings here and elsewhere, e.g. Barwise and Ehrenberg, 1988).

On average only about a third to a half of the 11 or so attributes is mentioned for each brand. Relatively more attributes are mentioned for the two services than for the two fmcg's reflecting, for TV News in particular, familiarity with a larger number of brands (see Table 8.3. and higher usage frequency.

Future research should test if these results are a function of the format of the question employed. For example one could measure the effect of reversing the question, i.e. by reading out the brands (rather than the attribute statements) and asking respondents to indicate which attribute (rather than which brand) they apply to.

Table 8.21. illustrates that, in as far there is some variations between brands, the n*(1-b) model depicts a DJ type of effect for the number of attributes mentioned in terms of both direction and size for Laundry Detergents and Fast Food Chains, with correlations of .8 and .9 between Observed and Predicted values. For Cereals the results are affected by the strong sub-grouping between brands. If the model is applied within each sub-group the correlation between Observed and Predicted values becomes .84. As expected the model does not fit TV News Programmes since DJ does not apply there.

In summary, both the number of brands mentioned for each attribute and the number of attributes mentioned for each brand follow familiar patterns, with more brands being picked for "high" attributes and more attributes being mentioned for "large" brands.

We will now conclude this chapter with a few summary remarks and issues of validity and reliability of the measures employed.

8.5. SUMMARY REMARKS AND ISSUES OF VALIDITY AND RELIABILITY.

Throughout this Chapter we have outlined a close relationship between our measures of Likelihood to Buy, Advertising Recall, and Attribute Beliefs with claimed Usage. The "size" of the brand, in terms of its percentage of "Users", has emerged as the key factor in interpreting "attitudinal" responses. In spite of the potential problems discussed in Chapter 7, our measure of Claimed Usage appeared valid since it yielded results consistent with well established patterns of *recorded* (through scanner panels and the like) buying behaviour.

The consistency of the results throughout the data allows us to draw some conclusions also about the validity of our "attitudinal" measures, an issue which is often forgotten by marketing researchers.

Psychology researchers, on the other hand, have traditionally placed great emphasis on the assessment of the validity and reliability of attitude measures (e.g Nunnally, 1967; Kerlinger, 1973; etc.).

One reason for this discrepancy between attitude studies in psychology and marketing is that the latter eventually refers attitudinal measures to the concept of buying behaviour, which acts as a validating criterion to the measurement of the construct of attitudes. In psychology studies, on the other hand, there is no such general criterion of reference.

In practice most marketing research has dealt with the relationship between attitudes and purchasing in terms of trying to predict future changes in behaviour (predictive validity), but has often failed to establish significant correlations at the individual level. Furthermore, many studies are based on experiments which control for current and past behaviour, by testing the relationship on new or fictitious brands (e.g. Ginter, 1974; Hoyer and Brown, 1990).

As a matter of fact, apart from the studies by Achenbaum (1972), Haley and Case (1979), and Ehrenberg and his associates (1966, 1970, 1985 and 1990) reviewed in previous chapters, few researchers have cross-analyzed attitudes with <u>current</u> behaviour, i.e. have established concurrent validity. Even fewer have talked about attitudes in relation to past behaviour, a paper by Cohen and Houston (1972) and various studies by Ehrenberg et al. over the course of several years being the main exceptions. However, for the reasons discussed in Section 2.3, the studies which have related attitudes with current and past behaviour have been, in the main, more successful in establishing significant correlations between the two variables than the ones focusing on predicting future behaviour.

While the relationship between attitudinal measures and buying behaviour is a plausible explanation for the lack of explicit concern with validity and reliability in marketing, researchers

like Peter (1979 and 1981), and Churchill (1979) have insisted on the need to apply to marketing research the techniques for validation developed in psychology.

Heeler and Ray (1972) remark that some marketing researchers may "*have unwittingly developed the data but have not put them into a* [correlation] *matrix form that would allow easy and accurate assessment of validity*".

Our approach here has been to employ the general criterion of current and past buying behaviour as the point of reference to appraise the validity of multiitem measures over many sets of data. By so doing the construction of matrixes as the ones suggested by Heeler and Ray and the use of correlation coefficients, as in the psychology tradition, become unnecessary. As a matter of fact, the analysis of coherent patterns over different groups and multiple sets of data is more straightforward and the validity of the measures acquires a more general meaning, than the correlation coefficients obtained from complex matrixes, which would refer to one and one only set of data.

For example in our work here, the concurrent validity of free-choice multivariable measures (different attributes) is assessed to the extent to which several items (different brands) are put in the same order against the Using/Not Using criterion, across various groups (different product categories). The finding that some attributes (the so-called "descriptive" attributes) consistently tend not to order brands in the same way as the "evaluative" attributes would signify a different kind of trait (i.e. a distinct type of attributes), rather than a fallacy in internal consistency (see below).

This way of assessing validity against the criterion of Using/Not Using is substantially equivalent to what Nunnally (1967) identifies as the second step for construct validation (i.e. the determination of internal consistency among the observables) and to his claim that the assessment of the validity of different scales mainly rests on their ability to rank the measures in the same order. It is also comparable with the validity testing for personality scales undertaken, among others, by Eysenck (1957), where scores obtained by normal people are validated against the scores of abnormal patients.

Through the same methodology it is also possible to assess cross-correlations between constructs, for example between ("evaluative") Attribute Beliefs, Intentions to Buy, and Advertising Recall which all cross-correlate on the ranking of the brands over one "*common factor*", namely the Usage criterion. This is equivalent to the last step in Nunnally's construct validation and what Peter (1979) refers to as "nomological validity".

Oppenheim (1966, 1992 page 148) also stresses the importance of showing that the *relative* differences between groups (e.g. "Users" and "Non Users") are consistently in the same

direction, especially if they apply to techniques that apparently tap different 'levels'(in our case ranging from Purchase Intentions to Attribute Beliefs).

In terms of both postdictive and predictive validity, the same approach of analysis across different groups of data will be employed when discussing results over time in Chapters 9 to 11.

The internal consistency of the Belief measure has been established in spite of the danger, stressed by several authors (e.g. Heeler and Ray, 1972), that close relationships between variables would originate mostly from the effort of respondents to be seen as consistent in their answers.

Although a bias of this kind is conceivable, the pattern for "descriptive" attributes counters that, plus such degree of pragmatic consistency would be highly unlikely across so many products, in different countries and for time intervals ranging from 1 to 18 months. Moreover, the Double Jeopardy pattern identified above would seem to suggest that such bias does not affect large and small brands in the same way, but other forces are at work, such as the natural exposure of each brand, and the intrinsic nature of beliefs and of their measurement should be considered.

As described in the Literature review, the exposure to a stimulus (in our case to a brand), influences its perception and its degree of liking (Zajonc, 1968), and has the effects described by Double Jeopardy theory (McPhee, 1963). Moreover from Bem (1967) we learn that attitudes are expression of people's self-perceptions of their behaviour (e.g. "I must like brown bread, because I am always eating it").

Especially for habitual, frequent purchases (e.g. buying a Breakfast Cereal), people do not think very much about nor publicly discuss their beliefs towards brands and, because of their nature, decisions of this kind follow a routinized process, where attitudes serve as a often unconscious reinforcement of one's choices rather than as the spelled-out, "rational" motive for each purchase.

In this context, we cannot really talk of the relationship between Usage and declared Beliefs as biased by the desire of being seen as making a rational choice, since the intrinsic triviality of attitudes towards frequently purchased brands makes them, at most, the expression of consumers' self-perceptions of their habitual buying behaviour.

However, future research should resolve this issue of internal consistency further, first by means of wide replication, and then by testing if changing the order of the questions across respondents in a randomized manner affects the relationship between attitudinal responses and usage in any way. This procedure is suggested by many authors (e.g. Oppenheim, 1966, 1992) as a way of testing for any bias arising from the order of the questions.

Finally, the reliability of the measures employed is attested by the consistent patterns of results that emerge at different points in time, both in the US (eighteen months apart) and in the UK, where the same patterns were shown to hold at subsequent interviews ranging from one to twelve months apart.

CHAPTER 9: CONSUMER ATTITUDES OVER TIME

9.1. Checks on Attrition

9.2. Aggregate versus Individual Responses Over Time

9.2.1. Aggregate Responses Over Time

9.2.2. Individual Responses Over Time

9.2.3. Interpretation

9.3. Double Jeopardy in Repeat-Rates

9.4. Repeat-Rates for Claimed Usage, Likelihood to Buy and Advertising Recall

9.5. Repeat-Rates for Attribute Beliefs

9.5.1. Results

9.6. Triple Jeopardy

9.7. Summary Remarks

9. CONSUMER ATTITUDES OVER TIME.

This Chapter and the two that follow represent our main contribution to attitudinal research by analysing responses of the same consumers over time.

Despite the emphasis put by social psychologists and marketing researchers on the study of individual consumers (see Chapter 2), there is a striking shortage of consumer behaviour studies on the attitudes of the same individuals over time[26]. This is mainly due to fears of attrition and conditioning and that panellists would become "professional respondents". As a consequence researchers have often made inferences on the causal order of the relationship between Attitudes and Behaviour on the basis of cross-sectional data which, as stressed by McBroom and Reed (1992), is methodologically and conceptually incorrect.

Hence not only is there still wide debate on the causation between Attitudes and Behaviour, but also we know very little about how attitudes change at the individual level and how these changes relate to changes in buying behaviour.

Before reporting our results we review the few studies we have found comparing the attitudes of the same individuals at different points in time (Achenbaum, 1972; Biel, 1970; Channon and Bullen, 1975; Holmes, 1974; Katona, 1979; Lievesley and Waterton, 1986; Mills and Nelson, 1977).

Collectively these studies cover a number of rather different topics, ranging from attitudes to brands (e.g. Achenbaum, 1972) to highly involving social issues (e.g. Katona, 1979). However, they all have found the same two seemingly contrasting results: steady aggregate responses[27], but highly variable individual ones: between 40% to 60% of consumers are usually reported to give the same answer (in terms of either claimed usage, attitude or behavioural intention) at two subsequent times. This parallels the pattern found in buying behaviour of steady (in the medium term) market share, but highly variable individual purchases.

The results seem to be fairly independent from the scale used (e.g. a six-point brand evaluation scale in Achenbaum, 1972 or semantic differential in Holmes, 1974) and from the length of the interval between interviews: from a few minutes (Holmes, 1974) to a year apart (Mills and Nelson, 1977). Even after a time interval of twelve years, the agreement between early

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[26] There are a number of repeat-studies such as before-and-after tests of commercials and of products, often conducted in as experimental setting. This is not what we are referring to here, which is about the extended study of attitudes over time.

[27] Aggregate stationarity in attitudinal responses is also the result of routine tracking studies on the attitudes over time although of different samples of respondents (e.g. Brown, 1985).

and late responses (brand preferences) is still reported in the range between 32% and 39%, depending on the kind of comparison (Guest, 1942, 1944, 1955). Lower consistency in individual responses, i.e. 26%, is recounted only for very long time intervals, such as twenty years (Guest, 1964).

The degree of variability is also pretty much the same for consumer goods and social issues (e.g. Lievesley and Waterton, 1986).

On the basis of this apparently continuous change at the individual level, the Cognitivists' view of the world has become the one discussed in Chapter 2, where constantly changing attitudes are expected to cause changes in behaviour. However, because of this emphasis on the individual, with no reference to more aggregate measures, and of the univocal view in terms of attitudes (or intentions) leading to behaviour, Cognitivism has also failed to establish substantial correlations between the two measures (as shown, for example, by Wicker, 1969). Establishment of strict correspondence between the attitudinal and behavioural phenomena in terms of Action, Target, Context and Time, had then to be put forward by Fishbein and Ajzen (1977) to overcome this problem.

Our aim here is to improve the knowledge and understanding of these variations at the individual level and of the relationship between varying patterns of behaviour and attitudes. This is an issue that Castleberry and Ehrenberg had not yet tackled in the US and that the UK researchers had not fully developed.

After routine checks on attrition (Section 9.1.), we will analyze our own aggregate versus individual results (Section 9.2.) over time.

Having found once again that, despite steady overall results, a considerable number of individual consumers had changed their responses in the eighteen months between the two interviews, in Sub-Section 9.2.3. we will seek for a reliable explanation of this phenomenon, since the interpretations suggested so far have been unsatisfactory. Then, in Sections 9.3. and 9.4. we will relate the "volatility" of attitudinal responses at the individual level to the initial response level (Double Jeopardy) and to the buying frequency of the brand ("Triple" Jeopardy).

9.1. CHECKS ON ATTRITION

Concerns about attrition and of conditioning (see next section) in re-interviewing have been expressed by Courtenay (1981), and Lievesley and Waterton (1986).

For example, Lievesley and Waterton (1986) remarked that *differential* attrition among subgroups could be a cause of concern also because it would compound over time. In the attempt of equalizing, year after year, the socio-demographic distribution of the panel samples to the "natural" population distribution, they weighted the successive panel samples to the population distribution, but were unsuccessful in eliminating all differential attrition.

In our data, of the 461 subjects who were interviewed for the first time in the US in 1986, 219 were successfully re-interviewed eighteen months later, as per the detailed response breakdown in Table 9.1. below.

TABLE 9.1.
Attrition in the Panel Survey

	1986-1988
Selected for interview	461
Out of scope (dead, moved, etc.)	64
Refused 2nd interview in advance	41
Non-response (non-traceables, refusals, non-contacts)	137
Successful 2nd interviews	219
RESPONSE RATE OF THOSE IN SCOPE	55%
RESPONSE RATE OF THOSE IN SCOPE EXCLUDING ADVANCE REFUSALS	62%

Because of attrition, we were concerned that the re-interview sample would consist of the respondents more "involved" with the product categories considered, hence contain a higher percentage of "Users" than the sample that dropped out. This could result in higher attitudinal responses in the re-interview sample compared with the sample who was interviewed only once and possibly in a higher correspondence between responses at the two points in time.

On the other hand, we were not worried very much about differential attrition among demographic subgroups, since the literature relating demographic characteristics to either attitudes or behaviour is inconsistent.

Therefore we proceeded to compare the respondents who remained in the panel with those who dropped out in terms of their reported buying behaviour in 1986. Typical results are reported in Table 9.2..

TABLE 9.2.
Percentage of Users in Drop Out and Re-interview Panels
(Laundry Detergents and Fast Food Restaurants)

LAUNDRY DETERGENTS			FAST FOOD RESTAURANTS		
	"Users"			"Users"	
Brands by Usage	Drop Out Panel 1986 n=232	Re-interview Panel 1986 n=218	Brands by Usage	Drop Out Panel 1986 n=232	Re-interview Panel 1986 n=205
	%	%		%	%
Tide	35	41	McDonald	69	61
Woolite	10	14	B.King	63	59
Cheer	9	13	Wendy	52	48
Bold 3	11	13	Hardee	26	28
Wisk	8	12	D.Queen	30	20
Gain	11	7	Varsity	26	18
Oxydol	3	5	Krystal	17	7
Era	4	4			
Cold Power	2	0			
Duz	2	0			
Average	9	11	Average	40	32
r	.97		r	.98	

For Laundry Detergents the percentage of respondents claiming to be "Users" of a brand in the re-interview panel is up to 6 points higher than in the drop out panel. However, the opposite occurs for Fast Food Restaurants, with the percentage of "Users" in the re-interview sample even 10 point *lower* than the usership of the drop out sample.

We then checked these differences for statistical significance, i.e. we tested against a two-sided alternative the null hypothesis (H_o) that the population proportion of claimed "Users" were the same among the Drop Out and the Re-interview sample. To test the null hypothesis $\mathbf{H_o: p_x - p_y = 0}$ against the alternative $H_1: p_x - p_y \neq 0$, the decision rule is to *reject* H_o if:

$$\frac{p_x - p_y}{\sqrt{p_o(1-p_o)\left(\frac{n_x+n_y}{n_x n_y}\right)}} < -z_{\alpha/2} ; > z_{\alpha/2}$$

According to this decision rule at the 5% significance level we could not reject the null hypothesis of equality between the two proportions for any brands of Laundry Detergents in Table 9.2.. On the contrary, at the 5% significance level, we rejected the null hypothesis of equality

between the two proportions of "Users" for the Fast Food Restaurants Dairy Queen, Varsity[28] and Krystal. However, for these brands the proportion of "Users" in the re-interview panel are lower than the proportion of "Users" in the Drop Out panel, which goes against the theory that the Re-interview panel would be made up by more "involved" respondents.

The results just reported, plus the evidence in Table 9.2. the percentage of "Users" among the Re-interview sample is sometimes higher and sometimes lower than the percentage of "Users" among the respondents who dropped out, indicate that there was no consistent bias due to attrition for Laundry Detergents and Fast Food Restaurants.

For Breakfast Cereals (not reported in detail here) there are variations in both directions between the drop out and the re-interview panel, up to + or -6 percentage points.
Tests of significance for Breakfast Cereals yielded not significant differences (at the 5% level) for all brands between the proportion of claimed "Users" of the Drop Out and of the Re-interview panel.

For TV News (also not reported in detail here) the percentage of "Users" in the Re-interview panel is mostly higher (6 points on average) than the percentage of "Users" in the Drop Out panel. For the two programmes (CBS and NBC) where the differences between the two samples are largest (12 points), statistical tests indicate that the proportion of claimed "Users" among the Re-interview sample is significantly higher (at the 5% level) than the proportion of claimed "Users" among the Drop Out sample. For the other seven programmes we did not have enough evidence (at the 5% level) for rejection of the null hypothesis of equality between the two proportions.

Nonetheless, on the account of the higher percentage of claimed "Users" in the re-interview panels for Laundry Detergents and TV News, we decided to check if this made any difference in terms of another variable, namely the Intentions to Buy a brand in the future. Results for these two products are reported in Table 9.3..

[28] For Dairy Queen and Varsity we could not reject the Null Hypothesis at the 1% significance level.

TABLE 9.3.
Likelihood to Buy Percentages in Drop Out and Re-interview Panels
(Laundry Detergents and TV News)

LAUNDRY DETERGENTS			TV NEWS		
	Likelihood to Buy			Likelihood to Buy	
Brands by Usage	Drop Out Panel 1986	Re-interview Panel 1986	Brands by Usage	Drop Out Panel 1986	Re-interview Panel 1986
	%	%		%	%
Tide	55	53	11 Alive	75	73
Woolite	42	46	Chnl. 2 News	61	65
Cheer	23	23	EyeWitness	61	67
Bold 3	24	20	CBS	57	61
Wisk	20	24	NBC	53	57
Gain	20	16	60 Minutes	72	74
Oxydol	14	10	ABC	45	47
Era	11	8	20/20	59	59
Cold Power	4	5	McNeilLehrer	28	22
Duz	4	4			
Average	22	21	**Average**	57	58
r	.98		**r**	.98	

The Likelihood to Buy responses reported in Table 9.3. appear overall very similar in both samples, with differences between the two panels for specific brands up to +/- 4 points (+ 6 in one case). Moreover the direction of the differences between the two samples in Likelihood to Buy does not always correspond to the direction of the differences in claimed usage.

When we tested for significance the results in Table 9.3., again we could not reject (at the 5% level) the null hypothesis of equality between the two sample proportions for all brands of Laundry Detergents and also for all TV News programmes.

Spot checks conducted for Attribute Beliefs showed a similar pattern.

Our conclusion is that attrition in the panel between the two interviews did not seem to have a substantial effect either on the structure of the panel itself or on the responses of the people who were re-interviewed.

Similar checks on the UK data base had also showed no consistent bias due to attrition.

9.2. AGGREGATE VERSUS INDIVIDUAL RESPONSES OVER TIME.

Having excluded a consistent bias due to attrition in our sample, we proceeded to compare aggregate and individual results at the two interviews.

Differences in responses between the two interviews could originate from various factors, ranging from conditioning to "real" changes in the marketplace. The size of any difference between the two interviews would give an indication of the extent to which this was happening and the degree to which this was affecting our results.

Waterton and Lievesley (1986) defined conditioning as "*the phenomenon whereby the very act of being interviewed changes attitudes or behaviour or - more likely - changes the reporting of attitudes or behaviour*". Similarly, Bridge et al. (1977) have pointed out the possibility that the mere act of interviewing may either have a "freezing" effect, i.e. inhibit change, or rather may induce the respondent to form opinions previously absent or to change the direction or intensity of existing attitudes.

However, previous literature on conditioning is "*rather sparse, fragmentary and unsystematic*" (Waterton and Lievesley, 1986) and it mainly relates to high-involvement issues.

Mills and Nelson (1977) and Waterton and Lievesley (1986) followed the approach suggested by Bridge et al. (1977) and used comparison groups to test the direction and magnitude of any effects due to interviewing. They found very little evidence of conditioning when studying attitudes toward a wide range of issues, although the effects seemed to be more pronounced for respondents with low knowledge scores. This is also in line with findings by Bridge et al. (1977) that "... *if a topic is seen as unimportant, or if the salience of the topic is already very high, question asking will not shift attitudes and information levels*".

Waterton and Lievesley (1986) also pointed out that the length of time between interviews could affect the extent of conditioning, since shorter intervals would make respondents more likely to remember what they had previously answered. On this issue, checks conducted by Barnard, Barwise and Ehrenberg (1986) on the English database showed no variation in the overall proportion of respondents stating a belief about a brand at subsequent interviews three, six, or twelve months apart, but a small blip (2 or 3 percentage points) for re-interviews after one month.

Finally, fears of conditioning are disputed by Hahlo (1992, and previous references there), who showed almost identical results from a re-interviewed and a matched fresh sample. He rated a re-interview sample to be better both in terms of cost-related benefits and of the quality of responses.

Because of the low-involving nature of the brands covered by the our study, of the long time-lag between interviews, of the number of brands and attributes covered, and of the evidence just quoted, we did not expect conditioning to have affected our results in a significant manner. However, as mentioned above, we were also looking for clues of notable changes in the marketplace.

Our findings are reported below.

9.2.1. Aggregate Responses Over Time.

First we compared the aggregate responses at the two interviews for each of the four variables under consideration. We report on typical differences between the two interviews in Tables 9.4. and 9.5. below, starting with Claimed Usage. They were obtained by subtracting the overall percentage of responses at the first interview from that at the second.

TABLE 9.4.
***Differences* in Claimed Brand Usage % at the Two Interviews**

Laundry Detergents		Cereals		Fast Food Chains		TV News	
Brands by Usage	% Users 2nd - 1st Interview	Brands by Usage	% Users 2nd - 1st Interview	Brands by Usage	% Users 2nd - 1st Interview	Brands by Usage	% Users 2nd - 1st Interview
Tide	+5	Raisin Bran	-4	McDonald	+6	11 Alive	+4
Woolite	+3	Cheerios	+2	B.King	-3	Chnl. 2 News	-5
Cheer	+16	K.CornFlakes	-1	Wendy	+6	EyeWitness	-2
Bold 3	+6	Fros.Flakes	+5	Hardee	-1	CBS	-8
Wisk	+8	All Bran	0	D. Queen	+1	NBC	+7
Gain	+4	NutCheer	+2	Varsity	+6	60 Minutes	+4
Oxydol	0	Frt Loops	-3	Krystal	+5	ABC	+3
Era	+3	Rice Chex	+2			20/20	+9
Cold Power	+3	Wts.Rais.	+3			McNeilLehrer	+3
Duz	-1	CocaPuffs	0				
		BooBerry	0				
Av. Difference (no Cheer)	+4 (+3)	**Av. Difference**	+1	**Av. Difference**	+3	**Av. Difference**	+2
MAD (no Cheer)	5 (4)	**MAD**	2	**MAD**	4	**MAD**	5

MAD = Mean Average Deviation

There is an exceptionally high claimed Usage for the detergent Cheer at the second interview (perhaps it was being highly promoted at the time), which, nonetheless, does not seem to have negatively affected other brands of Detergents, even in terms of the average proportion

of Cheer's buyers who also bought other brands, which remained constant. As expected, however, the average duplication between the buyers of other brands and the buyers of Cheer increased considerably at the second interview (i.e. from 41% to 58%). The finding that the higher Usage claims at the 2nd interview for Cheer in Table 9.4. affect the data elsewhere substantiates the hypothesis of a real change in Cheer's buying.

The closure of D-Lites might reasonably be the cause for changes in the claimed brand usage of the other brands of Fast Food Chains, as also apparent from the increase across the board in the average duplication rates. The finding that our reported behaviour measure reflects these real changes in the market is a further indication of the validity of the measure employed, in spite of the biases discussed in Chapter 7.

There are also other smaller but noticeable differences between the responses at the two interviews, possibly due to promotions. Only a third interview (or access to *recorded* data for a considerable length of time around the two interviews) could reveal if the fluctuations encountered in the American figures were temporary, as in the case of the hypothesised special features, or if real changes in the market structure were occurring at that time. The latter would be unlikely in the light of general evidence from *recorded* buying behaviour (e.g. Ehrenberg, 1972 & 1988) of steady market shares in the medium term.

The results for different buying frequencies (e.g. Infrequent and Never buyers) follow similar patterns.

Fairly steady (with a couple of major exceptions), and with changes in both directions, are also the results for Advertising Recall (not reported in detail here). On average Advertising Recall is about 3 percentage points lower at the second interview for Laundry Detergents and Fast Food Chains and about 2 percentage points higher at the second interview for Breakfast Cereals and TV News.

For Attribute Beliefs (Table 9.5.) the percentage of respondents who mentioned a belief at the second interview is across the board somewhat higher at the second than at the first interview. The range of variations is similar to that of Claimed Brand Usage (+5 percentage points), with Cheer again accounting for the most sizeable difference (+12 percentage points), reflecting the higher buying claims at the second interview.

TABLE 9.5.
Differences in Average Attribute Beliefs % at the Two Interviews

Laundry Detergents		Cereals		Fast Food Chains		TV News	
Brands by Usage	Average Belief % 2nd - 1st Interview	Brands by Usage	Average Belief % 2nd - 1st Interview	Brands by Usage	Average Belief % 2nd - 1st Interview	Brands by Usage	Average Belief % 2nd - 1st Interview
Tide	+5	Raisin Bran	+1	McDonald	+6	11 Alive	+7
Woolite	+6	Cheerios	+6	B.King	+8	Chnl. 2 News	+7
Cheer	+12	K.CornFlakes	+2	Wendy	+6	EyeWitness	+6
Bold 3	+3	Frosted Flak.	+4	Hardee	+7	CBS	+4
Wisk	+7	All Bran	+2	D.Queen	+3	NBC	+5
Gain	+4	NutCheer	+6	Varsity	+5	60 Minutes	+7
Oxydol	+1	Fruit Loops	+2	Krystal	+4	ABC	+8
Era	+3	Rice Chex	+3			20/20	+8
Cold Power	+4	Wts.Rais.	+3			McNeilLehrer	+4
Duz	+3	CocaPuffs	+1				
		BooBerry	+2				
Av. Difference	+5	**Av. Difference**	+3	**Av. Difference**	+5	**Av. Difference**	+6
MAD	5	**MAD**	3	**MAD**	5	**MAD**	6

MAD = Mean Average Deviation

However, more sizeable differences than for any other measure occur for Likelihood to Buy (8 points or so on average) in Table 9.6..

TABLE 9.6.
Differences in Likelihood to Buy % at the Two Interviews

Laundry Detergents		Cereals		Fast Food Chains		TV News	
Brands by Usage	Likelihood to Buy % 2nd - 1st Interview	Brands by Usage	Likelihood to Buy % 2nd - 1st Interview	Brands by Usage	Likelihood to Buy % 2nd - 1st Interview	Brands by Usage	Likelihood to Buy % 2nd - 1st Interview
Tide	+10	Raisin Bran	+10	McDonald	+13	11 Alive	+9
Woolite	+15	Cheerios	+9	B.King	+8	Chnl. 2 News	+6
Cheer	+26	K.CornFlakes	+7	Wendy	+6	EyeWitness	+5
Bold 3	+13	Frosted Flak.	+8	Hardee	+7	CBS	+4
Wisk	+15	All Bran	+6	D.Queen	+6	NBC	+9
Gain	+9	NutCheer	+11	Varsity	+3	60 Minutes	+11
Oxydol	+4	Fruit Loops	+3	Krystal	+7	ABC	+12
Era	+5	Rice Chex	+6			20/20	+20
Cold Power	+3	Wts.Rais.	+2			McNeilLehrer	+4
Duz	-2	CocaPuffs	+2				
		BooBerry	-1				
Av. Difference	+10	**Av. Difference**	+5	**Av. Difference**	+8	**Av. Difference**	+9
MAD	10	**MAD**	6	**MAD**	8	**MAD**	9

MAD = Mean Average Deviation

The differences in the Likelihood to Buy responses in Table 9.6. are considerable not only for the detergent Cheer (+26 percentage points), but also for other brands (e.g. up to 20 percentage points for the TV programme 20/20, corresponding to plus 9 points in Usage).

While we are not aware of any straightforward way of testing for the difference between proportions of highly correlated samples (as in the context of the data corresponding to the differences reported in Tables 9.4. to 9.6.), the deviations between the responses at the two interviews (especially of Likelihood to Buy) cannot be easily dismissed, particularly because they are consistently positive throughout the data. In "statistical" and actual term they are "real".

However, we believe that we should focus on the general picture, and consider the larger differences in Likelihood to Buy responses as the major exception: apart from outstanding cases (such as Cheer) the differences for all variables are modest especially when put in the context of the much larger dissimilarities in individual claims which will be reported in the next section.

We can compare our results with the equivalent British ones (see Table G1 - Appendix G), which are very stable for all time-lags between interviews (3 to 12 months) - except for the already mentioned small blip (2 or 3 percentage points) for re-interviews after one month - for all product fields (except for some seasonality in the case of Fizzy Soft Drinks) and for all variables, including Intentions to Buy.

Likely explanations at this stage for the more unstable results in the US (especially for Likelihood to Buy), compared with the UK is the longer time lag between interviews, compounded by the possibility that with different novice (but trained) student interviewers each time in the US study some "learning" occurred in questionnaire administration, leading to fractionally more responses. This might have affected the free-choice measure for Attribute Beliefs more than the forced choice measure for claimed usage because of more consistent probing (i.e. "any others?") at the second interview. These are in principle checkable with other such experiments.

Finally, because of the uninvolving nature of the subject matter (cfr. Bridge et al. 1977), of the length of time between the interviews in the US, of the number of brands, of the number of changes in both directions and of the much more stable results in the UK, we do not consider conditioning as a significant factor influencing our results. Furthermore, conditioning would have affected all brands and product fields in similar manner. The stability of the results in the UK also supports the reliability of the measures employed.

9.2.2. Individual Responses Over Time.

We then calculated individual Repeat-Rates as the ratio between the number of people giving the same response twice and the average number giving the response either at the first or at the second interview.

For example, 35 respondents had stated at both interviews that Kellogg's Raisin Bran was "Good Value for Money" while 69 people had said so at the first and 67 at the second interview and the Repeat-Rate was calculated as follows: 35/[(69+67)/2]. We could have calculated the Repeat-Rates on the basis of either the 69 respondents at the first interview (i.e. "forward") or of the 67 respondents at the second (i.e. "backward"), with fairly similar results (in Chapter 11 we will compare "forward" and "backward" Repeat-Rates related to change in usage between the two interviews). However, by using as a base the average response we cancelled out any bias arising from the noted discrepancies sometimes found in the responses between the two interviews.

In contrast with the fairly steady response levels illustrated in Tables 9.4. to 9.6., Table 9.7. summarizes how, on average, across products and variables, only about half (55%) of individual consumers giving a response in an interview did so again at the next.

Average Repeat-Rates vary from product to product and between variables from about 40% to about 60%, with peaks as high as 74% for Likelihood to Buy of Fast Food Chains and TV News. There are consistently higher Repeat-Rates (up to 21 percentage points) for the two services compared with either Detergents or Cereals. The reason for such differences will become clear in Sections 9.4. and 9.5..

Within each product field there are also very marked and consistent variations among brands about the average Repeat-Rates, as will be discussed in detail in Sections 9.3. to 9.6..

TABLE 9.7.
Repeat-Rates

CLAIMED BRAND USAGE						ADVERTISING RECALL						ATTRIBUTE BELIEFS*						LIKELIHOOD TO BUY						Over-all Avg.
Brands by Usage	Deterg.	Cereals	Fast Food	TV News	Avg. Prod.	Brands by Usage	Deterg.	Cereals	Fast Food	TV News	Avg. Prod.	Brands by Usage	Deterg.	Cereals	Fast Food	TV News	Avg. Prod.	Brands by Usage	Deterg.	Cereals	Fast Food	TV News	Avg. Prod.	
	%	%	%	%	%		%	%	%	%	%		%	%	%	%	%		%	%	%	%	%	%
1st	78	59	76	87	**75**	1st	74	54	91	81	**75**	1st	58	50	69	65	**61**	1st	77	67	86	85	**79**	**72**
2nd	52	61	70	79	**66**	2nd	61	64	83	75	**71**	2nd	45	60	70	60	**59**	2nd	68	68	85	76	**74**	**68**
3rd	55	54	63	82	**64**	3rd	75	47	78	73	**68**	3rd	48	51	74	61	**59**	3rd	53	62	86	79	**70**	**67**
4th	55	36	49	74	**54**	4th	55	57	60	55	**57**	4th	48	30	52	59	**47**	4th	64	55	68	72	**65**	**56**
5th	47	61	24	77	**52**	5th	43	38	40	65	**47**	5th	42	49	53	63	**52**	5th	58	53	68	74	**63**	**54**
6th	47	55	46	76	**56**	6th	43	58	10	67	**45**	6th	39	31	54	62	**47**	6th	47	54	69	86	**64**	**53**
7th	45	39	22	55	**40**	7th	32	41	41	60	**44**	7th	40	31	49	56	**44**	7th	51	52	59	66	**57**	**46**
8th	33	54		62	**50**	8th	47	34		70	**50**	8th	36	44		59	**46**	8th	50	52		77	**60**	**56**
9th	50	24		54	**43**	9th	17	48		31	**32**	9th	38	33		51	**41**	9th	33	54		54	**47**	**43**
10th	0	20			**10**	10th	11	33			**22**	10th	33	27			**30**	10th	17	47			**32**	**24**
11th		50			**50**	11th		36			**36**	11th		18			**18**	11th		18			**18**	**31**
Average	**46**	**47**	**50**	**72**	**54**	**Average**	**46**	**46**	**58**	**64**	**54**	**Average**	**43**	**39**	**60**	**60**	**51**	**Average**	**52**	**53**	**74**	**74**	**63**	**55**
Fmcg					**46**	**Fmcg**					**46**	**Fmcg**					**41**	**Fmcg**					**53**	**47**
Services					**61**	**Services**					**61**	**Services**					**60**	**Services**					**74**	**64**

* The average belief

Our finding of average Repeat-Rates close to 50%, applies to both forced-choice (i.e. Claimed Buying) and free-choice measures (all other variables).

The similarity between our results and those of previous research is noteworthy especially if we consider: (i) the different countries covered by these studies (e.g. US and UK), (ii) different kinds of frequently-purchased packaged goods (e.g. food versus non-food) as well as services (as done by us) and high involvement products (e.g. energy saving devices in Mills and Nelson, 1977), (iii) in spite of different usage characteristics (e.g. by the housewife or by individual household members), (iv) different brands in each product categories, (v) different time-spans between measurements (from a few minutes to 18 months), (vi) differences in the breadth of the samples (e.g. selected local neighbourhoods in Athens, Georgia in our US study, versus countrywide in the corresponding UK study), (vii) variously experienced interviewers (professionals, trained novice students, etc.), (viii) the timing of the studies (from the early 1970's to the late 1980's), (ix) the measurements procedures (e.g. free-choice plus some forced-choice, as in Holmes, 1974 and Achenbaum, 1972), (x) the nature of the variables (various specific attribute beliefs and evaluations, as well as overall buying likelihood and claimed buying behaviour), (xi) the different measures at the individual level (e.g. repeat-rates, percentage change, etc.).

However, the interpretation of this phenomenon is still controversial and will be dealt with in the following section.

9.2.3. Interpretation

Despite the similarities of the results, there are wide discrepancies in the explanations put forward by researchers to justify the variations in the responses of individual consumers over time.

Lievesley and Waterton's (1986) interpretation, for instance, is based on Markov chain analysis and several variations on the theme, while Biel's (1970) explication is in terms of a "leaky bucket" (i.e. for different reasons people change their behaviour and/or attitudes from time t_1 to time t_2 and are replaced by others changing in the opposite direction).

These interpretations, however, appear inadequate because of the shortcomings of the theoretical assumptions of Markov and of deterministic buying behaviour models (e.g. homogeneity of consumers' purchase probabilities), as we discussed in Chapter 5.

A more general "volatility" in consumers' attitudes (and possibly some conditioning effects) is blamed by Mills and Nelson (1977) for the impossibility to measure change through re-

interviews. Katona (1979) describes variations at the individual level in similar terms: attitudes of individuals may vary quickly and are affected by a great variety of factors, while attitudes of the masses tend to change slowly and gradually, because many factors relevant to the individual cancel out for large groups. Hence behavioural predictions would be possible at the macro, but not at the individual level, since some regularities of behaviour apply to groups, but not to individuals.

Similarly, Ajzen and Fishbein (1980) acknowledged that group behaviour is more easily predictable than individual behaviour, since, when the sample is large enough, intervening events between intentions and action would tend to balance out.

Error of measurement is blamed by Epstein (1979) for the impossibility of predicting single instances of behaviour, while it would be feasible to predict behaviour averaged over a sample of situations and/or occasions.

However, error measurement alone does not seem to be a plausible cause for the extent of the variability of results at the individual level, unless we assume that the quite different measures which were employed, with mostly very consistent results, in the studies concerning individual consumer attitudes over time were affected by error exactly to the same extent.

Rather, the difficulty highlighted by Katona and other researchers in predicting single instances of behaviour, such as individual brand choice, from attitudes favours an interpretation in stochastic (i.e. varying as-if-probabilistically) terms, as proposed by Bass et al. (1972) (see Section 6.4.) to explain variations in individual *buying* behaviour.

This kind of interpretation is also suggested by Channon and Bullen (1975), who equate these newly found patterns of individual attitude variations, which appear, however, stable across individuals, to the already known pattern and theory of varying individual purchase frequencies and fluctuating brand purchases which underlie stable overall brand share levels (e.g. Ehrenberg 1972, 1988).

The stochastic interpretation differs from explanations such as a "leaky bucket" effect, mainly because the former assumes a statistical pattern whose variations are so irregular that can be thought of *as if* they were random, while the latter implies some kind of substantive feature, at the brand level, capable of motivating (as per a Cognitive interpretation), an irreversible loss of customers, replaced (sometimes only partially), by conversion in the opposite direction. If there are any substantive patterns to be explained, however, they will be seen only after the stochastic ones have been allowed for or, at least, "successfully" described. Moreover, contrary to other models, it is assumed that individual consumers have different but stable propensities to make an attitudinal statement.

Although Channon and Bullen's reasoning seemed to make good sense, they did not give any empirical evidence to prove their argument. This is what we provide here.

For a stochastic but stationary interpretation to hold, individual propensities to give a particular attitudinal response or purchase claim should largely be stable in successive periods, with no signs of being either systematically eroded or enlarged over time, as for instance in the "leaky bucket" or "conditioning" interpretations, respectively.

We find empirical support for this explanation by comparing the Repeat-Rates for the matched split-samples that were re-interviewed after 1, 3, 6, and 12 months in the UK. Furthermore, the 6-month split-sample had been interviewed for a third time after 12 months.

The results are summarised in Table 9.8. for the average Attribute Belief across the brands in each UK product category, and also for the Likelihood to Buy and the Claimed Buying Frequency of the average product.

Table 9.8.
Average Repeat-Rates in the UK
(Average across all brands and attribute beliefs)

	2nd interview (months later)				3rd Interview
	1	3	6	12	
Average Attribute Belief					
Laundry Detergents %	54	47	46	43	45
Breakfast Cereals %	52	42	44	41	46
Canned Soups %	56	46	50	47	51
Toothpastes %	60	50	49	50	48
C. Soft Drinks %	50	40	42	39	43
Average Attribute Belief and Product %	54	45	46	44	47
Likelihood to Buy Average Product %	74	61	63	55	59
Advertising Recall Average Product %	50	44	44	40	41
Claimed Usage Average Product %	69	61	56	53	54

Apart from a consistent drop after one month (discussed below), the results across all product fields show that the frequency with which attitudinal claims are repeated - i.e. on average about 45% of the time for Attribute Beliefs - is not greatly affected by the length of the time period (e.g. 3, 6, 12 months), nor yet for the third interview. There are some wobbles, but nothing either very large or very consistent. Yet on any erosion (or "learning") theory, Repeat-Rates from the first interview (at time zero) should all show continuing trends.

One possible interpretation of the 10-point or so drop in Repeat-Rates in Table 9.8. after one month is that some 10% more interviewees might then have remembered their previous

response, compared with re-interviews after the longer intervals. But this seems to us unlikely to be a marked effect since, at each interview, beliefs about some 500 brand attributes were covered (i.e. ten or so attributes for each of ten brands in five product fields). However, giving a response at one interview might reinforce the awareness and salience of the brand as a whole in the respondent's mind, in a way which still affects her responses to a measurable extent after a month.

An additional, and perhaps more likely, explanation might be that after just one month quite a few consumers have not yet made a further purchase of the product category, and especially not one of some other brand. Since attitudinal responses about a brand appear to be related to the recency of purchasing the brand (Castleberry and Ehrenberg 1990), after a month respondents could be less conditioned to change their responses. This possible explanation could be explored and tested in future research, e.g. with yet shorter time intervals.

As shown in Table 9.8., however, a time-lag of three months between interviews is sufficient to eliminate any effects of "conditioning", or memory, or increased level of awareness.

Therefore, the critical information in Table 9.8. is that Repeat-Rates after 1 month or more are in the main remarkably similar. This supports the hypothesis of stationary, but stochastically variable, individual propensities to respond.

We can equate the results for Claimed Usage to the well-established stationary stochastic models of *recorded* buying behaviour discussed in Chapter 5 (e.g. Ehrenberg 1972, 1988).

The results in this Chapter imply that a similar process regulates the incidence of, say, mentioning a brand in relation to an Attribute Belief or expressing an Intention to Buy.

We must note, however, that the interpretation just described relies heavily on the potential effect on responses by the free-choice questions used for Attribute Beliefs, Likelihood to Buy and Advertising Recall. The tendency of interviewees to underreport their beliefs when responding to free-choice questionnaires has been noted before (see Barnard and Ehrenberg, 1990). There seems to be a threshold level below which respondents do not repeat an attitudinal claim regarding a brand.

The fact that free-choice questions left the respondents free to indicate a brand or not for each belief (or purchase intent statement), compounded with the effect of the order of the questions (e.g. Oppenheim, 1992), might have triggered the above mentioned "cognitive dissonance" mechanism whereby, for a desire of consistency, respondents repeated their choice only for the brand(s) that they had stated (in forced-choice questions) to buy most frequently, but not for any other brand. In other word, they might have felt the need to justify their behavioural responses.

On the other hand, forced-choice questions for attribute beliefs and purchase intentions might have required a definite answer for each brand. If forced-choice attitudinal questions had been used, we might have expected consumers to answer the attitudinal questions not only for all the brands they were most familiar with, but also for those they did not use on a regular basis[29].

Despite these potential differences, there is evidence that both forms of measures place all brands in the same relative position (Barwise and Ehrenberg, 1990), and achieve steady aggregate results but highly variable individual ones (Achenbaum, 1972; Holmes, 1974). Hence, in broad terms, our results are valid i.e. they are not just the artefact of the free-choice measures employed.

Given the notable consistencies in the US and the UK (see Tables 9.7. and 9.8.) of the average Repeat-Rates at about 50%, we are now going to examine in detail the already noticed marked variations among brands about the 50% or so average Repeat-Rates.

[29] I am currently participating in a research project aimed to explore this hypothesis. The full results will however not be available to be included here.

9.3. DOUBLE JEOPARDY IN REPEAT-RATES

The examination of regular variations around the average 50% Repeat-Rate was exploratory in the sense that, to our knowledge, there was no systematic previous research on the subject. We considered such investigation to be important not only in order to gain a better understanding of the patterns just described, but also to explain issues of managerial relevance.

For example how should one interpret that 75% of the consumers who said they believe the US detergent Tide to "Get Stains Out" said it again at the second interview, whereas only 45% of the people who held that belief for Cold Power repeated it? Are the less stable beliefs for Cold Power a danger signal for that brand, or is there quite a different interpretation? And if so, what?

First we sought some guidelines on how to proceed from similar or related research.

We found an extensive literature concerned with Repeat-Buying and its implications on Brand Loyalty (e.g. Ehrenberg, 1972, 1988; Jacoby and Chestnut, 1978; etc.), as also reviewed in Chapter 5. In particular, we are referring to the occurrence of the well established phenomenon of Double Jeopardy (DJ), linking the actual quantitative levels of repeat-buying to the market share of the brand. In principle DJ seemed able to apply also to our Repeat-Rates of buying frequency claims.

However, when we thought about possible explanations for the many observed differences among brands in "attitudinal" responses we noted that the literature had been mainly concerned with explaining the differing absolute level of consumers' responses, e.g. why 61% of respondents overall say Tide "Gets Stains Out" and only 13% say so for Cold Power at any given time. From previous literature we came up with four main possible reasons to why more people might give a response to a brand than to another in the first place. The reasons are:

(i) The Marketing Mix. In broad terms (e.g. Kotler 1991), consumers' aggregate attitudinal responses and purchase intentions could be influenced by management's current or past marketing activities concerning the brand's positioning, its price, the promotional support and the distribution policy. Consumers' advertising recall would be an immediate indication of the quality of the ad (e.g. Brown et al., 1992) and also be a function of consumers' involvement with and prior knowledge of the product category (Okechuku, 1992);

(ii) Multi-Attribute Response Mechanisms. This assumes a "rational" consumer capable of evaluating the relative importance of brands' attributes, (e.g. Fishbein 1963), although sometimes only as a "halo effect" of the overall preference for the brand (Beckwith and Lehmann 1975). In addition, the Theory of Reasoned Action (Fishbein and Ajzen, 1975) postulates that

consumers' attitudes towards an act (e.g. purchasing a brand) and social pressures would determine the degree of behavioural intention. This in turn would approximate future behaviour;

(iii) Market Share. The influence of the previous usage or buying of the brand as a mere size or market share effect, whereby the more frequently and recently purchased (i.e. bigger) brands tend generally to enjoy higher attitudinal response levels in the whole population anyway (see Barwise and Ehrenberg 1985; Bird, Channon and Ehrenberg 1970; Castleberry and Ehrenberg 1990 summarised in Chapter 6; and our own results illustrated in Chapter 8).

(iv) Double Jeopardy (DJ). The DJ pattern is another sheer size effect, namely that even among the "users" of each brand, fewer give a favourable response for a brand with few such users - a small brand - than for one with many - a large brand - (e.g. see McPhee 1963; Ehrenberg et al. 1990 in Chapters 4 and 6; and our own results in Chapter 8).

While the shortcomings of the first two possible explanations have been discussed in earlier chapters, we thought that size effects of a Double Jeopardy kind might have a role in accounting for variations in the rate at which "attitudinal" responses are repeated at successive interviews. In particular, we expected a DJ relationship between the percentage giving a response again at the second interview and the percentage giving the response in the first place.

In practice, we investigated three main relationships for each variable considered in this study, i.e.:

(i) the relationship between Response Levels (RL) and Repeat-Rates (**RR**);

(ii) the relationship between RR and the buying of the brand (U) among all respondents and, for Attribute Beliefs, for "evaluative" versus "descriptive" attributes;

(iii) the relationship between the Repeat-Rate among the "Users" of each brand and U itself.

Quantitatively we expected the Repeat-Rates (**RR**) to be higher than the Response Level (RL) because, for example, for a positive attribute belief, anyone giving a response in the first place (e.g. "Gets Stains Out") would be more likely to give the response in a second interview than someone who did not say so initially.

We deal with (i) and (ii) above for Claimed Usage, Likelihood to Buy and Advertising Recall in Section 9.4., and then for Attribute Beliefs in Section 9.5.. We will analyze the relationship at (iii) in Section 9.6. for all the variables.

9.4. REPEAT-RATES FOR CLAIMED USAGE, LIKELIHOOD TO BUY AND ADVERTISING RECALL.

As already mentioned we are concerned here with systematic variations of Repeat-Rates around the average 50%. We do so by investigating the relationship between the response levels at the first interview and the Repeat-Rates.

Because our expectation was in terms of a Double Jeopardy relationship between initial responses and the Repeat-Rates, we first ordered the brands within each product field and for each variable by the initial response level.

For example, for Claimed Usage we first ordered the brands by the number of "Users" at the first interview and then we examined the relationship with the corresponding Repeat-Rates, as illustrated in Table 9.9..

TABLE 9.9.
Claimed Usage (U) and Repeat-Rates (RR)

LAUNDRY DETERGENTS			BREAKFAST CEREALS			FAST FOOD CHAINS			TV NEWS		
Brands by U	Claimed Usage U	Rep. Rates RR	Brands by U	Claimed Usage U	Rep. Rates RR	Brands by U	Claimed Usage U	Rep. Rates RR	Brands by U	Claimed Usage U	Rep. Rates RR
	%	%		%	%		%	%	Daily Progr.	%	%
Tide	54	78	Raisin Bran	34	59	McDonald	61	76	11 Alive	80	87
Woolite	32	52	Cheerios	34	61	B.King	59	70	Chnl.2 News	75	79
Cheer	24	55	KCornFlakes	25	54	Wendy	48	63	EyeWitness	74	82
Bold 3	23	55	Fros.Flakes	15	36	Hardee	28	49	CBS	66	74
Wisk	22	47	All Bran	17	61	D.Queen	20	24	NBC	62	77
Gain	16	47	NutCheer	15	55	Varsity	18	46	ABC	48	55
Oxydol	8	45	FrtLoops	15	39	Krystal	7	22	McNeilLehrer	13	54
Era	7	33	Rice Chex	10	54						
C.Power	(2)	(50)	Wts.Rais.	8	24				Weekly Progr.		
Duz	(2)	(0)	CocaPuffs	5	20				60 Minutes	56	76
			BooBerry	(1)	(50)				20/20	37	62
Average	19	46	Average	16	47	Average	32	50	Average	57	72
r(U,RR) [no 0]	.76 (.93)		r(U,RR) [no 0]	.60 (.72)		r(U,RR)	.94		r(U,RR) (daily)	.90	

The results in Table 9.9. show a relationship of a Double Jeopardy kind between the size of the brand (as expressed by the percentage of "Users") and the corresponding Repeat-Rates: hence smaller brands not only have less buyers, but fewer of them repeat their buying claims. This is consistent with the Double Jeopardy relationship between the market share of the brands and the repeat-buying found for *recorded* buying (Ehrenberg et al., 1990). The correlation is especially

strong for Fast Food Chains (.94) and for (daily) TV News (.90), however it is "only" .76 for Laundry Detergents and .60 for Breakfast Cereals.

Lower correlations for the latter two product fields are partially due to sampling errors for the small Detergent brands Cold Power and Duz and for the Cereal Boo Berry. If we exclude from the correlations the brands in brackets in Table 9.11., we obtain a correlation between U and **RR** of .93 for Detergents and of .72 for Cereals.

For Breakfast Cereal there is an additional element, namely the already noted strong sub-grouping between "children's" and "health" brands (see Section 8.1.3.). Specifically, the "children's" brands Frosted Flakes and Fruit Loops seem to have particularly low Repeat-Rates. Similarly, "segmentation" among brands in the other product categories might be responsible for some of the irregularities in the Repeat-Rates.

This is because DJ mainly applies to items of "equal merit", which only differ in popularity (McPhee, 1963).

We followed the same procedure when investigating the results for the other two measures: for Likelihood to Buy (LB) we ordered the brands by the percentage of the sample saying (at the first interview) that they were likely to buy them in the future and for Advertising Recall (AR) we ranked the brands by the percentage saying they remembered seeing advertising for the brands on TV in the last three months, as illustrated in Table 9.10..

TABLE 9.10.

Likelihood to Buy (LB), Advertising Recall (AR) and Repeat-Rates (RR): Brands ordered by Response Level

LIKELIHOOD TO BUY						ADVERTISING RECALL					
LAUNDRY DETERGENTS			FAST FOOD CHAINS			BREAKFAST CEREALS			TV NEWS		
Brands by LB	Likelih to Buy LB	Repeat Rates RR	Brands by LB	Likelih to Buy LB	Repeat Rates RR	Brands by AR	Adver tRecall AR	Repeat Rates RR	Brands by AR	Advert Recall AR	Repeat Rates RR
	%	%		%	%		%	%	Daily Progr.	%	%
Tide	53	77	Wendy*	74	86	Cheerios*	42	64	11 Alive	75	81
Woolite	46	68	B.King*	72	85	Fros.Flakes*	39	57	Chnl.2 News	70	75
Wisk*	24	58	McDonald*	70	86	Raisin Bran*	35	54	EyeWitness	66	73
Cheer	23	53	D.Queen*	48	68	NutCheer*	34	58	NBC*	46	65
Bold 3	20	64	Hardee	44	68	K.CornFlakes	30	47	CBS	43	55
Gain	16	47	Varsity	43	69	All Bran	24	38	ABC	39	60
Oxydol	10	51	Krystal	26	59	FrtLoops	22	41	McNeilLehrer	16	31
Era	8	50				Rice Chex	22	34			
C.Power	5	33				Wts.Rais.	22	48	Weekly		
Duz	4	17				CocaPuffs	21	33	Progr.		
						BooBerry	10	36	60 Minutes	51	67
									20/20	49	70
Average	21	52	Average	54	74	Average	27	46	Average	51	64
r(LB,RR)	.83		r(LB,RR)	.98		r(AR,RR)	.88		r(AR,RR)	.96	
r(U,LB)	.96		r(U,LB)	.95		r(U,AR)	.79		r(U,AR)	.93	
r(U,RR)	.85		r(U,RR)	.96		r(U,RR)	.68		r(U,RR) (daily)	.94	

* This sign indicates those brands for which ordering by LB rather than by U makes a difference

Table 9.10. shows strong correlations (.83 or higher) between the response levels LB and AR and their Repeat-Rates. This is a size effect of a Double Jeopardy kind: brands with a lower Likelihood to Buy or Advertising Recall response also have a lower Repeat-Rate. The "segmentation" among brands of Breakfast Cereals does not seem to affect the Repeat-Rates in Table 9.10. for either variable.

As seen in Chapter 8, to larger brands generally correspond larger Likelihood to Buy and Advertising Recall responses, and to a large extent ranking the brands by response level or by Usage yields identical results. Hence the relationship between the buying of the brand U and the response levels LB and AR, and their corresponding Repeat-Rates also appears to be strong. However there are a few exceptions, and that is why the correlations between Usage and either LB or AR in Table 9.10. are not 1.

For example, the correlations between U and LB are close to 1 for all product fields (including Breakfast Cereals and TV News not reported in Table 9.10.). The correlations between U and the corresponding RR are also high, ranging from about .8 for Breakfast Cereals, to .96 for

Fast Food Chains. Similar results apply to Advertising Recall, Laundry Detergents and Fast Food Chains which are not reported in Table 9.10..

The results reported in Tables 9.10. also indicate that, because of their generally higher Response Levels, the two services consistently enjoy also higher Repeat-Rates.

The same sort of analysis on the British data (which had not been done before by Ehrenberg and associates) yielded very similar results (i.e. correlations of about .9), as summarized in Table G2, Appendix G.

We now turn to Attributes Beliefs.

9.5. REPEAT-RATES FOR ATTRIBUTE BELIEFS

We wanted to investigate two main relationships concerning Attribute Beliefs:
(i) the relationship between Response Levels (RL) and Repeat-Rates (**RR**); and
(ii) the relationship between RR and the buying of the brand (U) for "evaluative" versus "descriptive" attributes.

Our expectation concerning number (i) above was that, as for the other variables, a sheer size effect would account for the observed variations in Repeat-Rates between brands: the lower the Response Level, the less it would be repeated, as per the well-known Double Jeopardy pattern.

We believed that the described DJ relationship would be found to occur regardless of the many possible ways of aggregating and summarising our complex data and regardless of the size of the brand or of the absolute level of belief responses, i.e. both for attributes mentioned by many respondents across brands and for attribute beliefs generally held by few.

As we saw in Chapter 8, most attributes are of the "evaluative" kind, and their Response Levels are highly correlated with the buying of the brand. Hence, because of the DJ relationship between RL and RR postulated above, for "evaluative" attributes RR should be also indirectly correlated with the usage U.

However, how "descriptive" exceptions could affect the Repeat-Rates was open to three possibilities: (i) that Repeat-Rates would still be correlated with the usage of the brand; (ii) that Repeat-Rates would be independent from the usage of the brand, but that they would change with the size of the Response Level for the specific attribute. This would be still consistent with the expectation of a direct relationship between Repeat-Rates and Response Levels; (iii) that some other quite different factor would come into the picture.

Our expectation here was that a direct relationship with the initial Response Level would also apply to the Repeat-Rates of "descriptive" attributes. In this case the relationship would be with the size of the Response Level for that specific attribute, irrespective of the usage of the brand. Hence the expected DJ relationship between RL and **RR** would apply to all attributes, irrespective of their "evaluative" or "descriptive" nature.

9.5.1. Results

Below we report the results in support of our two expectations. We also discuss possible interactions between brands and attributes whose Response Levels differ in size.

A) The Relationship Between Response Levels and Repeat-Rates.

For Attribute Beliefs we had a lot of data, i.e. 11 or so attributes across 10 brands in each of 4 product fields. As many as 8,500 Repeat-Rates were analyzed overall in the US and the UK. Hence we illustrate the main results only in summary form (see Appendix G for the UK data).

Where the different replications all show much the same pattern across attributes and products for each country, we have formed averages to summarise the results. In this section this was done in two ways:

(i) for brands averaged when rank-ordered by their Response Level on each specific attitudinal variable (i.e. averaging the repeat rates **RR** first for the brands with the highest RL, then for those with the second highest RL, etc).;

and

(ii) for responses averaged when grouped by their absolute level, across different brands and/or attributes, (i.e. averaging the **RR**'s for the different attributes in a product category by Response Level RL in 10-point bands, first for all RL's in the 70s, then for those in the 60s, those in the 50s, etc.).

The results of these different ways of aggregating the detailed data agree closely.

(i) Repeat-Rates For Brands Ranked-Ordered by Response Level.

Given our expectation of a relationship between the Repeat-Rates and the "size" of responses, we ordered the brands for each attribute belief according to the Response Level on that attribute at the first interview. The belief Response Level for each brand represents the size of the brand for that attribute belief. Therefore we ranked the brands from "1st" to "*n*th".

This is illustrated in Table 9.11. first of all for just two typical attributes of Laundry Detergents in the US[30]. For example for the attribute belief "Gets Stains Out" we ranked the

[30] We will omit the brand Duz from the tables that follow because its small sample size affected the pattern of the data, resulting for example in several 100% Repeat-Rates, based on as few as 11 respondents mentioning an attribute for that brand.

brands from Tide, which had the highest Response Level (61%), to Cold Power which had the lowest (13%). Similarly, for the attribute belief "Clothes Smell Fresh" we ordered the brands from Tide, which had again the highest Response Level (43%), to Cold Power which had again the lowest (9%). Repeat-Rates for each attribute were then set out for the brands ranked-ordered in such a way.

The averages of **RR** and RL for the two attributes to the right of the table are therefore across the 1st, 2nd, 3rd, etc. brands as ranked by their RLs. Table 9.11. also shows the corresponding averages (and the average r) for all 11 attributes of Laundry Detergents.

TABLE 9.11.
Response Levels (RL) and Repeat-Rate (RR): Brands Ranked by RL
(Laundry Detergents - Two specific attributes)

Individual Attributes						Averages					
"Gets Stains Out"			"Clothes Smell Fresh"			(Two Attributes)			(11 Attributes)		
Brands (ranked by RL)	Resp. Level RL	Repeat-Rate RR	Brands (ranked by RL)	Resp. Level RL	Repeat-Rate RR	Brands (ranked by RL)	Resp. Level RL	Repeat-Rate RR	Brands (ranked by RL)	Resp. Level RL	Repeat-Rate RR
	%	%		%	%		%	%		%	%
Tide	61	75	Tide	43	64	1st	52	70	1st	56	68
Wisk	58	72	Gain	39	60	2nd	49	66	2nd	39	56
Bold 3	38	58	Bold3	35	63	3rd	37	61	3rd	29	49
Era	31	48	Cheer	30	51	4th	31	50	4th	25	41
Cheer	29	42	Woolite	21	50	5th	25	46	5th	20	36
Oxydol	27	47	Oxydol	17	35	6th	22	41	6th	17	38
Gain	24	44	Wisk	16	41	7th	20	43	7th	16	37
Woolite	15	34	Era	14	35	8th	15	35	8th	13	34
Cold Power	13	44	Cold Power	9	41	9th	11	43	9th	12	34
Average	33	52	Average	25	49	Average	29	51	Average	25	44
r (RL,RR)	.96		r (RL,RR)	.92		r (RL,RR)	.94		r (RL,RR)	.92	

NOTE: The r's in the last two columns are the average correlation of the individual attributes.

For both beliefs the results reported in Table 9.11. show a downward gradient for the Repeat-Rates with the size of the brands' Response Levels, e.g. from 75% to 44% on the attribute belief "Gets Stains Out" and from 64% to 41% on "Clothes Smell Fresh", for Response Levels ranging from 61% to 13% and from 43% to 9% respectively. The correlation between Repeat-Rates and Response Level for the two attributes is above 0.9.

There are over one hundred separate tables like the ones for Individual Attributes in Table 9.11., one for each attribute in the different product fields in the US and the UK, and whose results closely agree. Hence in Table 9.12. we summarize some 400 individual brand/attribute

results in the US by reporting the average Repeat-Rates across the range of the eleven or so attribute beliefs in each product field, for the brands ranked-ordered as described above.

TABLE 9.12.
Repeat-Rates Averaged Across Attributes: Brands Ranked by RL
(Average attribute for each product)

Brands (ranked by RL)	Laundry Deterg.		Break. Cereals		Fast F. Chains		Tv News	
	Av. RL	Av. RR	Av. RL	Av. RR	Av. RL	Av. RR	Av. RL	Av. RR
	%	%	%	%	%	%	%	%
1st	56	68	57	69	70	78	59	71
2nd	39	56	45	60	57	70	53	66
3rd	29	49	35	56	49	64	49	64
4th	25	41	29	47	39	57	45	60
5th	20	36	23	42	36	53	44	59
6th	17	38	19	37	33	52	41	57
7th	16	37	12	28	29	46	38	54
8th	13	34	8	21	-	-	36	54
9th	12	34	7	23	-	-	32	50
Average	25	44	26	43	45	60	44	59
r (RL,RR)	.92		.92		.96		.90	

NOTES - (i) Brands are ranked by RL for each attribute before aggregating.
(ii) The r's are the average correlations for individual attributes (as in Table 9.11.).

The results summarized in Table 9.12. across our four product categories confirm the smooth downward gradients in **RR** with the brands' RL rank order. The r's for the individual attributes average at .93. This confirms our expectation of a *size* relationship of a Double Jeopardy kind between RL and **RR**.

Moreover, as remarked for the other variables, to higher Response Levels for the two services correspond higher Repeat-Rates.

As for the other variables, **RR** are quantitatively higher than RL, and for Attribute Beliefs Repeat-Rates in the US are on average about 16 points greater than Response Levels. The quantitative relationship between **RR** and RL for attribute beliefs and for the other variables will be discussed in detail in Chapter 10.

Similar results apply to the UK (see Table G2 - Appendix G).

(ii) Repeat-Rates by *Absolute* Response Levels.

In line with our general "size" expectation, we also examined the variations of the Repeat-Rates with the absolute sizes of the Response Levels, i.e. by how many people gave a certain response at all at the first interview.

We summarized the individual results by averaging the **RR**'s for the different attributes in a product category by Response Levels RL in 10-point bands, i.e. for all RL's in the 70s, in the 60s, etc..

This procedure is illustrated in Table 9.13., where, for example, we grouped together and averaged the RR's corresponding to the five responses in Table 9.11. with absolute size between 30% and 39% (i.e. the responses for Bold 3 and for Era on "Gets Stains Out", and those for Gain, Bold 3, and Cheer on the attribute "Clothes Smell Fresh"). For other 10-point bands, however, we had no responses or perhaps only one response of that absolute size in the two attributes. The average across bands was therefore weighted by the number of cases in each grouping. We followed the equivalent procedure for the average across the 11 attributes and for that across the four products.

TABLE 9.13.
Absolute Response Levels (RL) and Repeat-Rates (RR)

	The Two Attributes from Table 9.11.			Average Detergents 11 Attributes			4 Products 47 Attributes		
ABSOLUTE RL	(No. of Cases)	Av. RL	AV. RR	(No. of cases)	Av. RL	AV. RR	(No. of cases)	Av. RL	AV. RR
		%	%		%	%		%	%
70-79	-	-	-	(1)	79	86	(17)	74	83
60-69	(1)	61	75	(3)	64	74	(32)	64	76
50-59	(1)	58	72	(6)	53	66	(40)	55	67
40-49	(1)	43	64	(8)	44	58	(71)	44	60
30-39	(5)	35	56	(14)	34	53	(72)	34	52
20-29	(4)	25	46	(21)	24	43	(59)	25	43
10-19	(5)	15	38	(38)	14	34	(71)	15	34
0-9	(1)	9	41	(8)	8	29	(34)	7	21
Average (weighted)	(18)	29	49	(99)	25	44	(396)	35	51
r (RL,RR)			.98			.98			.99

NOTE: All Averages are weighted by number of cases in each category

We then compared the Repeat-Rates of the attributes with an absolute Response Level between 70% and 79% across attributes, with the Repeat-Rates for the attributes mentioned by 60% to 69% of respondents at the first interview, down to 0% to 9%.

A downward gradient of Repeat-Rates with the absolute Response Levels occurs here. Across the 11 Attributes of Laundry Detergents, for example, the gradient is from 86% for the highest overall responses to 29% for responses stated by only 0% to 9% of consumers.

The pattern for Laundry Detergents is closely matched by the results in each product category, as summarized in the last column of Table 9.13.. The gradient is here from 83% to 21% for the average product in the US, including the services product fields. The correlation between Repeat-Rates and the absolute size of responses is on average about 0.99.

By comparing Table 9.11. and Table 9.13., there is a noticeable difference in the range of the average Repeat-Rates obtained by the two different ways of aggregating the results across the 11 attributes of Laundry Detergents. These differences can be explained by taking into consideration the number of cases in each absolute response grouping. For example, 88% of values fall between 59% and 10%, and for this range (59% to 10%) the gradient is, as expected, very close in the two tables.

Similar results apply to the UK (see Table G3 - Appendix G).

For both ways of averaging the data, the results so far have been consistent with our first expectation of a direct and strong relationship, of a Double Jeopardy kind, between Response Levels and Repeat-Rates.

B) The Relationship Between Repeat-Rates and the Buying of the Brand Among All Respondents. The Role of "Descriptive" Attributes.

Because of the already mentioned high correlation (for most attributes) between the Response Levels and the Usage of the brand (U), the rank order of the brands by Response Level was mainly the same for the two attributes reported in Table 9.11.. Differences between the two attributes in the rank-order of the brands were partly due to the very similar percentages of "Users" of three of the brands: i.e. Cheer, Bold3 and Wisk enjoy more or less the same usership level, as reported also in Table 9.9.. Despite these deviations, the correlation between RL and U is still about 0.7.

Hence there is generally also an *indirect* correlation between the Repeat-Rates for attributes and the Usage U through the already known correlation of the Response Levels with U.

However, as discussed in Chapter 8, marked exceptions to the strong correlation between RLs and the usage of the brand are known to occur for certain specific brand and attribute combinations (Barwise and Ehrenberg 1985; Bird and Ehrenberg 1970; Castleberry and Ehrenberg 1990). Thus, occasionally, a brand can enjoy an exceptionally high (or low) Response Level for a specific attribute. Such attributes have been called "descriptive" (of a particular feature of a specific brand), as against the more general "evaluative" attributes which reflect overall liking and usage of the brand.

As a reminder, we had considered three possibilities for how such exceptions could affect the Repeat-Rates: (i) that Repeat-Rates would still vary with the number of "Users" of the brand, in line with the results of Table 9.11.; (ii) that they would change with the Response Level for that attribute, regardless of the Usage of the brand; (iii) that some other quite different factor would come into the picture.

An example of a "descriptive" attribute is given in Table 9.14., where we have ranked the brands by the percentage of "Users" of each brand, rather than by the Response Levels as done in Table 9.11.. Thus, the average Response Levels and Repeat Rates across Attributes here are always for the same brand[31], e.g. 42% is the Average Response Level across attributes for Tide, the first-ranking brand in terms of number of Users.

This way of ranking the brands and of averaging highlights the exceptionally high Response Level (64%) for Cold Power on the attribute "Good in Cold Water", compared to 30%

[31] Because occasionally ranking the brands by Response Levels versus by Usage put the brands in slightly different order, the Average RL and **RR** in Table 9.11. were not always for the same brand, but across the 1st, 2nd, 3rd, etc. brands as ranked by their RLs.

for the brand leader Tide. For most other attributes the larger brand Tide, which 54% of respondents claimed to buy "Once a quarter or more often", as expected enjoyed much higher attitude responses than Cold Power, that only 2% of respondents claimed to buy with that frequency. This is reflected in the Average Attribute column.

TABLE 9.14.
Repeat-Rates (RR) for Brands Ranked by Usage

Brands Ranked by Usage	% Users	Average Attribute		"Good in Cold Water"	
		Resp. Level RL	Repeat-Rates RR	Resp. Level RL	Repeat-Rates RR
	%	%	%	%	%
Tide	54	42	58	30	48
Woolite	32	31	48	44	61
Bold3	24	29	48	23	39
Cheer	23	29	45	48	65
Wisk	22	23	42	19	44
Gain	16	20	39	18	39
Oxydol	8	19	40	12	39
Era	7	18	36	15	44
Cold Power	2	16	38	64	67
Average	21	24	44	29	50
r (U,RL)		.59		.14	
r (U,RR)		.51		.00	
r (RL,RR)		.92		.95	

NOTE - r for the Average Attribute is the average of the r's for individual attributes

The low correlation of U with RL and the absence of correlation between U and RR in Table 9.14. make us immediately rule out the possibility of an indirect correlation of the Repeat-Rates with the number of buyers of the brand for a "descriptive" attribute such as "Good in Cold Water".

What happens in practice becomes visually more apparent from the results illustrated in Table 9.15., where we have ranked the brands once again by the Response Levels for the attribute "Good in Cold Water" (as we had done in Table 9.11.), rather than by the number of "Users" (as done in Table 9.14.)

TABLE 9.15.
Double Jeopardy for RR with RL for a Descriptive Attribute

Brands Ranked by Response Level	Users U	"Good in Cold Water"	
		RL	RR
	%	%	%
Cold Power	2	64	67
Cheer	23	48	65
Woolite	32	44	61
Tide	54	30	48
Bold3	24	23	39
Wisk	22	19	44
Gain	16	18	39
Era	7	15	44
Oxydol	8	12	39
Average	21	29	50
r (U,RL)			.14
r (U,RR)			.00
r (RL,RR)			.95

Table 9.15. shows that for this "descriptive" attribute Cold Power ranks first in terms of Response Level, rather than last in terms of "Users" (as in the previous Table). Its Repeat-Rate (67%) for this specific attribute also ranks first, compared with an average Repeat-Rate of 38% for this brand across attributes (see Table 9.14.).

Thus the relationship between such exceptional Repeat-Rate and the initial response is still a size effect of a Double Jeopardy kind. Such relationship depends here on the large absolute size of the Response Level for that specific brand/"descriptive" attribute combination, and is in line with the results reported in Tables 9.13. above. The correlation between Response Level and Repeat-Rate is very high at 0.95.

Thus, even for "descriptive" attributes (i.e. when the brands are strictly not of "equal merit"), a Double Jeopardy pattern is still the main explanatory factor of the variations of Repeat-Rates between brands.

We can therefore exclude once again any major influence of some other exogenous factor.

Strong correlations between Response Levels and Repeat-Rates but low or negative correlations between Usage and Repeat-Rates could be considered as a fourth factor (see Chapter 8) for discriminating "mainly descriptive" from "mainly evaluative" attributes, as summarised in Table 9.16. below.

For example, in Table 9.16. the correlations between U and **RR** for "mainly evaluative" attributes range from .65 (for Laundry Detergents) to .78 (for Fast Food Chains). This is in contrast with the r's between U and **RR** for "mainly descriptive" attributes which range from -.16 (for TV News) to .28 (for Detergents) despite r's between RL and **RR** still of .9 or above.

TABLE 9.16.

Relationship Between Usage, Response Levels and Repeat-Rates - "Evaluative" vs. "Descriptive" Attributes

(Average Attributes)

Laundry Detergents					Breakfast Cereals					Fast Food Chains*			TV News (daily)				
	Average 7 Evaluative Attributes		Average 4 Descriptive Attributes			Average 4 Evaluative Attributes		Average 5 Descriptive Attributes			Average 12 Evaluative Attributes			Average 10 Evaluative Attributes		Average 3 Descriptive Attributes	
Brands by Usage	RL	RR	RL	RR	Brands by Usage	RL	RR	RL	RR	Brands by Usage	RL	RR	Brands by Usage	RL	RR	RL	RR
	%	%	%	%		%	%	%	%		%	%		%	%	%	%
Tide	54	68	20	40	Raisin Bran	43	65	19	34	McDonald	57	69	11 Alive	56	69	36	51
Woolite	18	38	54	67	Cheerios	41	66	31	56	B.King	55	70	Chnl.2 News	48	68	32	49
Cheer	33	50	20	34	K.CornFlakes	42	60	23	39	Wendy	63	74	EyeWitness	49	64	34	50
Bold 3	33	53	21	38	Fros.Flakes	27	46	10	17	Hardee	35	52	CBS	45	61	41	53
Wisk	25	44	21	37	All Bran	16	39	39	55	D.Queen	36	53	NBC	47	63	39	53
Gain	25	45	12	28	NutCheer	20	45	9	15	Varsity	37	54	ABC	41	58	37	50
Oxydol	25	43	10	33	FrtLoops	12	29	18	23	Krystal	30	49	McNeilLehrer	33	50	34	55
Era	18	39	12	31	Rice Chex	23	43	29	44								
C. Power	16	39	23	37	Wts.Rais.	15	39	14	26								
Average	27	46	21	38		27	48	21	34	**Average**	45	60	**Average**	45	61	41	52
r (U,RL)	.74		.34		r (U,RL)	.77		.14		r (U,RL)	.80		r (U,RL)	.82		.25	
r (U,RR)		.65		.28	r (U,RR)		.77		.22	r (U,RR)		.78	r (U,RR)		.74		-.16
r(RL,RR)	.91		.94		r(RL,RR)	.93		.92		r(RL,RR)	.95		r(RL,RR)	.71		.89	

NOTE: * No "descriptive" attributes

C) Attribute Beliefs of Different Sizes.

As mentioned in Chapter 8, not only brands differ in size, but also attributes differ in the average level of mentions across brands, with some attributes invariably receiving a higher level of mention than others.

Therefore, before proceeding any further, we needed to check on interactions (or, in practice, the absence of interactions): do the Repeat-Rates RR differ between large versus small brands for attributes whose general Response Levels RL are either "high", or "medium", or "low"?

We classified the attributes into "high", "medium" and "low" based on the size of the average mention across brands, and the brands into "large", "medium" and "small" depending on the size of the average response across attributes. The precise cut off points for inclusion into each attribute or brand group were necessarily subjective (but were robust to this - see below) and changed from product to product also as a function of the relative level of mentions within each product category. For example, in Table D1 in Appendix D we classified as "high" the attributes with average mentions, across Laundry Detergents brands, of 30% or above. On the other hand, for TV News in Table D2 (Appendix D), and as already noted elsewhere, attribute mentions were much higher throughout: hence in this case "*low*" attributes had average mentions of about 30%.

A summary of the classification of attributes according to this criterion is given in Table 9.17..

TABLE 9.17.
Response Levels (RL) and Repeat-Rates (RR) Across Brands and Attributes
(For Attributes of different "sizes")

	Laundry Detergents			Breakfast Cereals			Fast Food Chains			Tv News			Overall Average		
Attribute Size:	(No. of Cases)	Av. RL	Av. RR	(No. of Cases)	Av. RL	Av. RR	(No. of Cases)	Av. RL	Av. RR	(No. of Cases)	Av. RL	Av. RR	(No. of Cases)	Av. RL	Av. RR
		%	%		%	%		%	%		%	%		%	%
High	(3)	32	51	(1)	37	55	(3)	62	73	(3)	61	73	(10)	50	65
Medium	(5)	25	45	(5)	23	41	(3)	45	63	(6)	48	64	(19)	35	53
Low	(3)	18	35	(5)	19	40	(6)	36	52	(4)	29	46	(18)	27	45
Average	(11)	25	44	(11)	22	42	(12)	45	60	(13)	44	59	(47)	35	52

The results in Table 9.17. highlight that the level of attribute mentions varies not only from product to product (with higher mentions for Services than for fmcg's), but within each product field there are attributes which achieve a level of mention double than that achieved by

others. For example, "high" attributes of TV News are mentioned on average by 61% of respondents, compared with 29% for "low" attributes.

We also classified brands as "large", "medium" and "small", according to the average response achieved across the 11 or so attributes in each product category. For example, in Table D1 (Appendix D), we classified as "large" brands those with average responses of 31% or above, as "medium" those with average responses between 23% and 29%, and as "small" those at 20% or below.

In order to check on (the lack of) interactions between the size of the brands and the size of the attribute, we then examined the *differences* in Response Levels and in Repeat-Rates between "large" and "small" brands. For example, if there is no interaction between brand and attribute size we would expect the differences in Response Levels between "large" and "small" brands to be the same for "high", "medium" and "low" attributes. Similarly, we would expect the differences in Repeat-Rates between "large" and "small" brands to be the same for brands of different size.

This is illustrated in Table 9.18. where, for example, the value of 15 for "high" attributes of Laundry Detergents was obtained by subtracting 25 (the average mention for "small" brands and "high" attributes in Table D1 - Appendix D) from 40 (the average mention for "large" brands and "high" attributes in Table D1).

TABLE 9.18.
Interactions Between Brand Size and Attribute Size

Attribute Size	Differences: Large *minus* Small Brands									
	Laundry Detergents		Breakfast Cereals		Fast Food Chains		TV News		Overall Average	
	RL	RR	RL	RR	RL	RR	RL	RR	RL	RR
High	15	10	16	20	20	12	18	13	18	14
Medium	14	9	20	27	35	24	17	13	22	19
Low	27	25	21	20	29	25	16	12	24	21
Average	19	15	19	22	28	20	17	13	21	18

There is some wobble in the results reported in Table 9.18.: for example for Laundry Detergents the differences in Response Levels and in Repeat-Rates between Large and Small brands for "low" attributes are much larger than for attribute beliefs with "high" and "medium" Response Levels. This, however, is mainly due to the effect of a specific brand/attributes combination, i.e. to exceptionally high mentions for the "large" brand Woolite and the otherwise "low" attributes "Good for Soaking", "Makes Clothes Soft", and "Gentle to Clothes".

Similar reasons apply to Fast Food Chains for the smaller than average differences between Response Levels for "high" attributes.

By and large, as also shown by the results across product fields, the data in Table 9.18. show no consistent interactions between the size of the brand and the size of the attribute: the effect of the size of the brand on the belief responses and the Repeat-Rates is basically of the same order across attributes of different sizes. This is also matched by the results in Great Britain (see Tables G4 and G5 in Appendix G).

The reverse is also true: the differences in belief responses and Repeat-Rates between "High" and "Low" attributes are very similar for brands of dissimilar size.

The exceptions emerge mainly as an effect of "descriptive" brand/attribute combinations, rather than because of interactions between brand and attribute Response Levels.

We now go one step further in breaking down the data, to consider Response Levels RL, Likelihood to Buy LB and Advertising Recall AR among the "*Users*" of each brand.

9.6. TRIPLE JEOPARDY.

In Chapter 8 and in the current Chapter we have referred to the generally high correlation between the Usage of the brands - or their market share - and the Likelihood to Buy, Advertising Recall, and "evaluative" Attribute Belief responses. Moreover, we have found that the size of the Response Level appears as the dominant factor for interpreting differences in attitudinal Repeat-Rates, whatever the way of aggregating the data.

An additional feature (also discussed in Chapter 8) is an already known Double Jeopardy pattern, whereby for a brand with few users the attitudinal Response Levels *among these few users* is lower than the Response Level among the many users of a large brand (Ehrenberg et al. 1990).

Building on this knowledge, we thought that small brands were likely to suffer from what can be called a "Triple" Jeopardy: they have fewer Users, who give lower "attitudinal" responses (the previously known Double Jeopardy pattern), and who repeat such responses towards them less often than buyers of large brands do for those (the new Double Jeopardy pattern with the Response Level established in previous pages).

We illustrate some typical results, first for Likelihood to Buy, and then for Attribute Beliefs.

Table 9.19. for Likelihood to Buy shows some mixed results, with mostly strong correlations between the Usage of the brand, the Likelihood to Buy responses for "Users" and their Repeat-Rates for the two services, but generally weaker ones for Laundry Detergents and Breakfast Cereals. The latter do not improve even taking into consideration sub-clustering of brands (e.g. between "children's" and "healthy" brands of Cereals).

TABLE 9.19.
Likelihood to Buy (LB) and Repeat-Rates (RR) for *"Users"* (U) of Each Brand - Brands Ordered by "Users"

LAUNDRY DETERGENTS			BREAKFAST CEREALS			FAST FOOD CHAINS			TV NEWS		
Brands by U	Likelih. to Buy LB	Rep. Rates RR	Brands by U	Likelih. to Buy LB	Rep. Rates RR	Brands by U	Likelih. to Buy LB	Rep. Rates RR	Brands by U	Likelih. to Buy LB	Rep. Rates RR
	for "Users"			for "Users"			for "Users"			for "Users"	
	%	%		%	%		%	%	Daily Progr.	%	%
Tide	88	84	Rais. Bran	88	75	McDonald	90	92	11 Alive	86	91
Woolite	71	79	Cheerios	87	80	B.King	89	93	Chnl.2 News	80	79
Cheer	65	83	K.CornFl.	84	78	Wendy	89	96	EyeWitness	82	80
Bold 3	73	82	Frost.Fl.	77	85	Hardee	82	80	CBS	83	75
Wisk	68	71	AllBran	76	69	D.Queen	69	76	NBC	76	81
Gain	58	74	NutCheer	93	77	Varsity	83	70	ABC	80	70
Oxydol	65	64	Frt.Loops	66	56	Krystal	62	63	McNeilLehrer	71	74
Era	71	56	Rice Chex	89	87						
CPower	75	100	Wts. Raisin	82	50				Weekly Progr.		
									60 Minutes	89	96
									20/20	87	92
Average	70	77	Average	82	73	Average	81	81	Average	82	82
r(U,LB)	.58		r(U,LB)	.26		r(U,LB)	.85		r(U,LB)	.85	
r(LB,RR)	.38		r(LB,RR)	.52		r(LB,RR)	.84		r(LB,RR) (daily)	.50	

Similar results apply to Advertising Recall, with low to mid-range values for Laundry Detergents and for the relationship between Usage and Advertising Recall for Breakfast Cereals, but strong support for our "Triple" Jeopardy expectation from the two services (r's of .85 of higher).

For Attribute Beliefs once again we processed a large amount of data, therefore we report only typical results for three specific attributes in Table 9.20. and the summary results across attributes for all product fields in Table 9.21., for the brands ranked by the percentage of "Users".

TABLE 9.20.

Response Levels (RL) and Repeat-Rates (RR) for *"Users"* (U) of Each Brand - Brands Ordered by "Users"

(Three specific attributes)

BRANDS by U	Users U	"Gets Stains Out" RL for U	"Gets Stains Out" RR for U	"Clothes Smell Fresh" RL for U	"Clothes Smell Fresh" RR for U	"Good in Cold Water" RL for U	"Good in Cold Water" RR for U
	%	%	%	%	%	%	%
Tide	54	81	78	64	76	41	58
Woolite	32	24	66	35	81	59	50
Bold 3	24	44	56	31	50	52	72
Cheer	23	60	40	56	53	31	72
Wisk	22	85	82	26	64	32	60
Gain	16	42	71	79	75	21	50
(Oxydol)	(8)	(53)	(78)	(24)	(75)	(24)	(0)
(Era)	(7)	(86)	(64)	(43)	(33)	(14)	(100)
(Cold Power)	(2)	(50)	(100)	(0)	(0)	(75)	(100)
Average	29	56	66	49	67	39	60
r (U,RL)		.34		.10		.39	
r (RL,RR)		.38		.33		.05	

NOTES - (i) The figures in brackets have been excluded from the calculation of Averages and of r's.

In order to avoid sampling errors due to the small number of "Users", we have excluded the smaller brands from the calculation of the averages and of the correlations in Table 9.20.. Still, the results show weak correlations between Response Levels (among "Users") and Usage and between Repeat-Rates (among "Users") and Usage for all three attributes in Table 9.20., "evaluative" and "descriptive" alike.

Therefore, at the attribute level, there is not much support for a Triple Jeopardy effect between the size of the brands and their "Users'" RL and **RR**.. This is also because of a lot of "wobble" at this level of analysis, for specific brands/attributes combinations: for example the brand Woolite in Table 9.20. scores a low RL (for its size) for "Gets Stains Out", but a high one for "Good in Cold Water".

These "wobbles" by and large smooth out if we consider the average across the eleven or so attributes in each product field, as summarized in Table 9.21., for brands ordered by the number of "Users".

TABLE 9.21.
Response Levels (RLs) and Repeat-Rates (RRs) for *"Users"* (U) of Each Brand - Brands Ordered by "Users"
(Average attribute for each product)

LAUNDRY DETERGENTS				BREAKFAST CEREALS				FAST FOOD CHAINS				TV NEWS			
Brands by U	U	RL for U	RR for U	Brands by U	U	RL for U	RR for U	Brands by U	U	RL for U	RR for U	Brands by U	U	RL for U	RR for U
	%	%	%		%	%	%		%	%	%	Daily Progr.	%	%	%
Tide	54	55	67	Raisin Bran	34	46	46	McDonald	61	62	72	11 Alive	80	55	71
Woolite	32	39	60	Cheerios	34	58	67	B.King	59	63	77	Chnl.2 News	75	49	67
Bold 3	24	35	53	K.Corn Fl.	25	46	56	Wendy	48	69	82	EyeWitness	74	50	67
Cheer	23	46	54	Frost. Fl.	15	32	34	Hardee	28	40	62	CBS	66	50	64
Wisk	22	35	53	All Bran	17	54	57	D. Queen	20	46	53	NBC	62	52	64
Gain	16	39	52	Nutcheer	15	35	53	Varsity	18	51	59	ABC	48	51	62
(Oxydol)	(8)	(37)	(54)	Frt. Loops	15	24	29	Kristal	7	50	42	McNeilLehrer	13	59	61
(Era)	(7)	(36)	(61)	Rice Chex	10	56	63								
(C.Power)	(2)	(39)	(72)	Wht.Rais.	8	38	32					Weekly Progr.			
												60 Minutes	56	52	69
												20/20	37	53	71
Average	29	42	57	Average	19	43	49	Average		54	64	Average	57	52	66
r (U,RL)		.79		r (U,RL)		.39		r (U,RL)		.74		r (U,RL)		-.69	
r (RL,RR)		.78		r (RL,RR)		.41		r (RL,RR)		.76		r (RL,RR)		-.21	

NOTES - (i) The figures in brackets have been excluded from the calculation of Averages and of r's.
(ii) r's are the correlations with RL's of the average attribute

The correlations in Table 9.21. are an aggregate measure of the relationship between Usage, Response Levels and Repeat-Rates (among "Users"). For Laundry Detergents and Fast Food Chains the correlations are over .7, and support the "Triple" Jeopardy hypothesis.

However, for Breakfast Cereals and for TV News the correlations of RL with U and of of RL with **RR** are either low or negative. This is not surprising due the already noted strong sub-grouping among Breakfast Cereals brands and the little variations in both RL and **RR** among TV News Programmes, consistently with other findings here and elsewhere (e.g. Barwise and Ehrenberg, 1988).

In summary, the results are very mixed, and the situation is much less clear in comparison with the rest of the results reported so far. However, we have an indication that, on occasion something like a "Triple" Jeopardy trend occurs, whereby the few "Users" of small brands not only give fewer "attitudinal" responses for that brand, but also repeat such responses less often than the many buyers of a large brand do for it. Laundry Detergents and Fast Food Chains are examples of such occurrences.

9.7. SUMMARY REMARKS

In this Chapter we have established that to stable aggregate responses over time corresponds substantial variability at the individual level: on average only about 50% of consumers give the same response on a second interview.

Because the Repeat-Rates mostly do not vary with the length of the interval between interviews or at subsequent interviews (see UK results), our interpretation is in stationary but stochastic terms: they represent consumers' propensities to respond about a given brand for a particular attribute where these propensities differ across people, but are stable for each individual in the medium term. This is consistent with well known patterns of recorded Buying Behaviour (Ehrenberg, 1972, 1988).

However, there is a great deal of variation from brand to brand around the average 50% Repeat-Rates. This is not brand-specific. Instead the dominant factor is simply the initial level of response: there is in fact a Double Jeopardy pattern that the fewer people who give a response about a brand, the fewer of these give that response again in a subsequent interview.

Because for "evaluative" attributes brand usage (i.e. buying) and "attitudinal" responses are correlated, the rate at which consumers *repeat* their response about a brand can be regarded as a measure of brand loyalty. For example, the more frequently a brand is bought and used, the more prominent or salient its attributes will be in a consumer's mind, and the more often the consumer will mention those beliefs over time.

This process is not only plausible, but there are plenty of possible explanation in Consumer Behaviour theory (or social psychology) to justify the relationship between the incidence of mentioning a belief about a brand and its buying frequency or recency. They are, for example: the self-description of one's behaviour (see Bem, 1968), the attempt to reduce Cognitive Dissonance (e.g. Festinger, 1957), and the various theories which link familiarity with liking (e.g. Zajonc, 1968).

It follows that brands differ in their Repeat-Rates (and brand loyalty) primarily because of their size (i.e. market share) and generally not, or not much, in any brand-specific way.

"Mainly descriptive" attributes are the exception here: there are some attribute beliefs which *do* vary specifically between certain brands, independently of their market shares. However, neither this measure, nor overall measures such as expressed likelihood to buy, or diary- or scanner-recorded behaviour data are enough to determine if such brands are bought because being associated (or not) with one or more "descriptive" attributes.

Because "descriptive" attributes are specific to certain brands and, to a large extent, are mentioned also by the "Non Users" of the brand (see Chapter 8), their rate of mention will depend upon the random exposure to a range of stimuli such as, for example, having seen advertising, or having had a chat with a neighbour about the brand, or indeed having bought it. Again, since these stimuli affect a respondent's memory about the brand at irregular intervals, the likelihood at any given time to mention a belief about it will be determined by the recency of exposure to the stimulus itself.

At the same time, is this sufficient evidence that a fluctuating advertising exposure means a permanent change in beliefs? Results from the UK data about re-interviewing the same consumers three times does not seem to suggest so.

A similar mechanism applies to the Repeat-Rates for Likelihood to Buy and Advertising Recall.

Finally, in some cases, we have found that, even among the buyers of each brand, the fewer the buyers the lower the response levels and the Repeat-Rates tend to be (a kind of "*Triple*" Jeopardy effect). The relationships here are not as strong as for the occurrence of Double Jeopardy and more work is needed to establish the relevance of the exceptions.

Given its widespread occurrence, the Double - or possibly "Triple" - Jeopardy phenomenon also offers a yardstick for the interpretation of the differences between brands and attributes in Repeat-Rates. It is therefore relevant to market analysts and managers concerned with the interpretation of this sort of results for their brands, compared to their competitors.

As already mentioned, future research needs to establish more strongly how far the present findings on (mainly) free-choice attribute repeat-rates (50% overall, plus double/triple jeopardy patterns) will also hold up for forced-choice questioning.

The relevance of the present findings to before and after pretesting of advertisements could also be explored, as also for usage and attitude studies and attitudinal tracking surveys more generally.

Future research could also investigate the nature of repeat-responses to a third or more repeat-interviews. For example are consumers who do not respond on the second interview lost for ever and would they have to be replaced by new customers if the overall aggregate attitudinal response levels are to be steady (i.e. is there a "leaky bucket" operating?).

While we are leaving these questions for future work, in the next two chapters we will: (i) formalise the relationship between Repeat-Rates and Response Rates discussed in previous pages by means of a simple model and

(ii) investigate if a causative factor, such as a change in the recency of buying the brand, might help explain to some extent why individual responses are so volatile.

CHAPTER 10: THE RELATIONSHIP BETWEEN REPEAT-RATES AND RESPONSE LEVELS: A QUANTIFICATION

10.1. Deriving the Model

10.2. Deriving the Model for Other Variables

10.3. Summary Remarks

10. THE RELATIONSHIP BETWEEN REPEAT-RATES AND RESPONSE LEVELS: A QUANTIFICATION

From previous research (Ehrenberg, 1972, 1988; Ehrenberg et al., 1990) and theory (McPhee, 1963) we already knew the predictable application of the Double Jeopardy pattern to attitudinal response at one point in time and to buying behaviour over time.

In the previous Chapter we found that a Double (or even "Triple") Jeopardy relationship can also predictably account for the level of changes in attitudinal responses over time. Our aim in the current Chapter is to establish if the found DJ relationship between Response Levels and Repeat-Rates can be portrayed in a quantifiable form which broadly holds across different conditions such as different sets of brands and attributes from different countries, product categories, etc..

The iterative mechanism involved in establishing predictable relationships over Many Sets of Data (MSoD) is common practice in the natural sciences. It requires a two-stage process of first observing the occurrence of a persistent relationship between two (or more) variables and then of establishing the general form of such relationship. The process also highlights what the *relevant* conditions are and helps to make the exceptions themselves predictable (e.g. that for TV News Programmes "Triple" Jeopardy does not apply).

So far we have established the consistent occurrence of the DJ relationship between RL and RR in two countries (US and UK), for different time-lags between interviews (18 months in the US, and 1, 3, 6, 12 months in the UK), several product categories (five frequently purchased goods and two services), and for ten or so brands (some large and some small), and eleven or so attribute beliefs in each product field. Precisely how many different sets of data this accounts for (e.g. one for each country, or one for each product field in each country and so on) should not be the main issue here.

Rather, the issue is that the patterns are the same despite being tested across a great variety of different conditions: i.e. for attribute beliefs which vary considerably in Response Levels both between and within the product sets, and for different buying rates e.g. from "Once Every Quarter" for Laundry Detergents to "Once Every Fortnight" for TV News.

If now we are successful in establishing both the general form of the relationship between Response Levels and Repeat-Rates *and* its exceptions, not only we will have achieved to describe such relationship (and its limitations) in a summary, memorable form, but also we will have set a yardstick against which to compare future findings, and hence make the relationship (and its exceptions) predictable.

In practice, establishing the form of a routinely predictable relationship between variables could be useful to managers when assessing the performance of their brands: e.g. are the Repeat-Rates in line with what we should expect given the Response Level and market share of the brand or is there something else going on?

Because of our emphasis on generalizability and predictability, here we will focus on the *similarities* across the MSoD rather than on the differences, namely for which relevant range of conditions approximately the same form of relationship holds within the same limits (i.e. "stochastic sameness") and if there are any recurring exceptions.

This kind of work had not been done neither in the UK nor in the US, therefore we will use both sets of results in deriving the model, to add to the generalizability of the form of the relationship. We will do so first for attribute beliefs and then for all the other variables.

The methodology that will be used in this part of the work is described below.

10.1. DERIVING THE MODEL.

Since data of this kind was being handled for the first time, our approach was *exploratory.* Hartwig and Dearing (1979) regard the concept that data = smooth + rough as one of the most fundamental in the exploratory approach. They define the smooth as "*the underlying, simplified structure of a set of observations.[...] It is the general shape of a distribution or a general shape of a relationship. It is the regularity or pattern in the data. [...] What is left behind is the rough, the deviations from the smooth, the difference between the smooth and the observed data points.*"

Our aim here was therefore to make the smooth predictable (if possible) within a known "rough" range.

Hartwig and Dearing (1979) also describe the relationship between variables to have three important characteristics: direction, shape and strength.

In Chapter 9 we described a close correspondence between Response Levels and Repeat-Rates in terms of a strong correlation between the size of the Response Level and the size of the Repeat-Rate: high values of the former were associated with high values of the latter. Hence the *direction* of the relationship between Response Levels and Repeat-Rates is positive. By eyeballing the data in Chapter 9 we had also noticed that the Repeat-Rate values were higher than the values of the Response Levels. More formal checks confirmed this to be consistently the case.

The *shape* of a relationship refers to "*the shape of the line formed by the smooth*". This is indicated by the functional shape approximated by the observed values, which is primarily a straight line in all cases (see Figures 10.1. to 10.9. below), except for a slight curvature at the top and at the bottom ends.

Finally, the *strength* of a relationship is defined by Hartwig and Dearing as "*the extent to which data points on one variable correspond to the data points on the other variable. Often this is determined by the extent to which the observed values on one variable can be predicted from the corresponding values on the other variable*". The relationship is stronger the closer the data points are to the smooth (or the less rough remains after the smooth has been removed) and the simpler the smooth is. Our aim here is to make Repeat-Rate predictable from the corresponding Response-Level in a simple, summary way. The limited spread (especially for the two services) of the observed values around the line in Figures 10.1. to 10.9. is indicative of a strong relationship between Response Levels and Repeat-Rates (as discussed in more detail later), and as also evident from the strong correlations reported in Chapter 9.

From the analysis in Chapter 9 and the "eyeballing" of the scatter plots we had already a very good picture of the linear relationship between the two variables.

FIGURE 10.1.

RR/RL RELATIONSHIP

Laundry Detergents

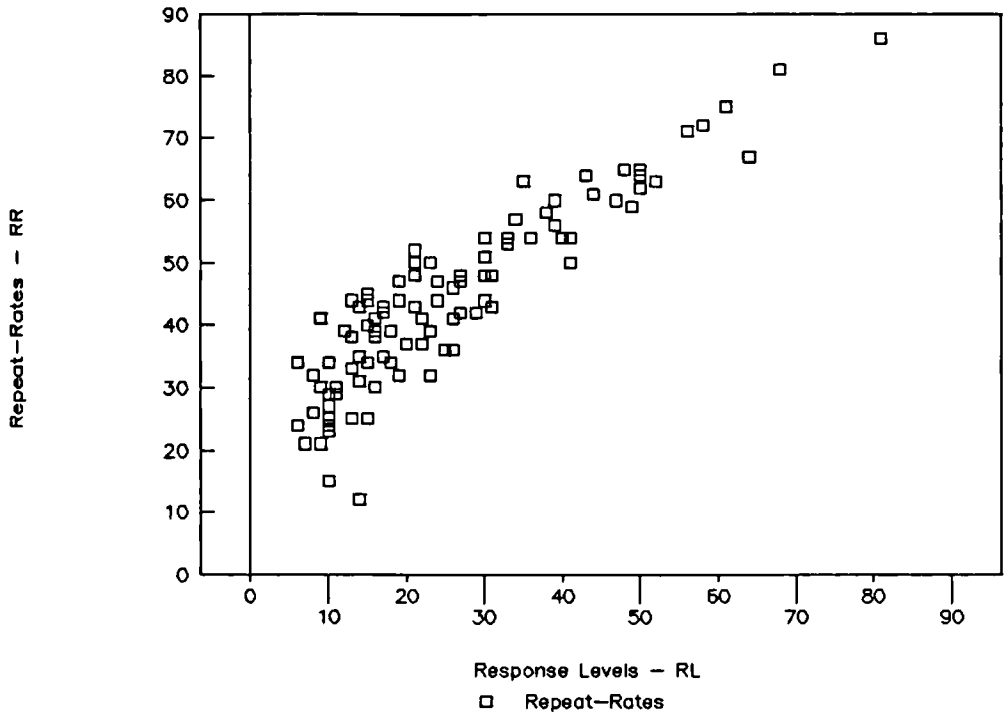


FIGURE 10.2.

RR/RL RELATIONSHIP

Breakfast Cereals

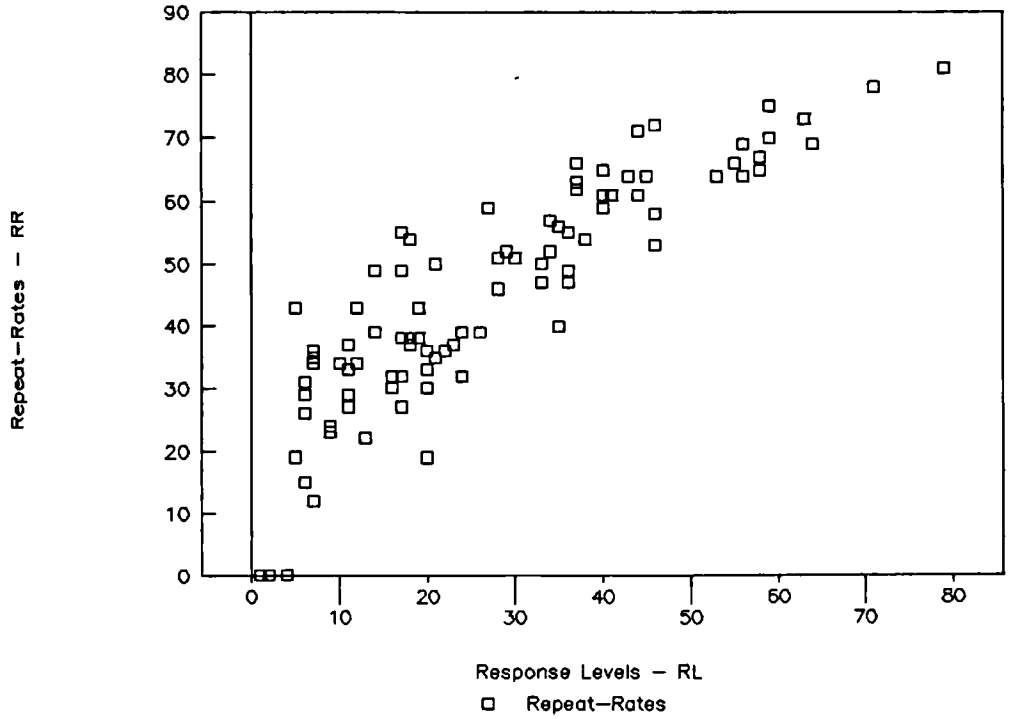


FIGURE 10.3.

RR/RL RELATIONSHIP

Fast Food

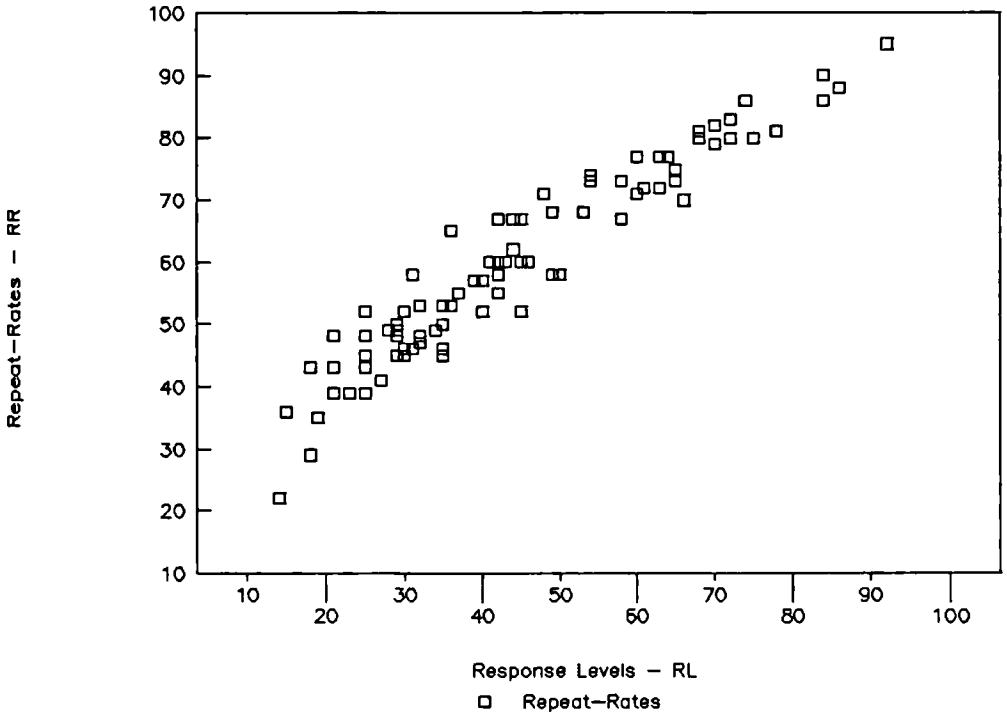


FIGURE 10.4.

RR/RL RELATIONSHIP

TV News - Daily

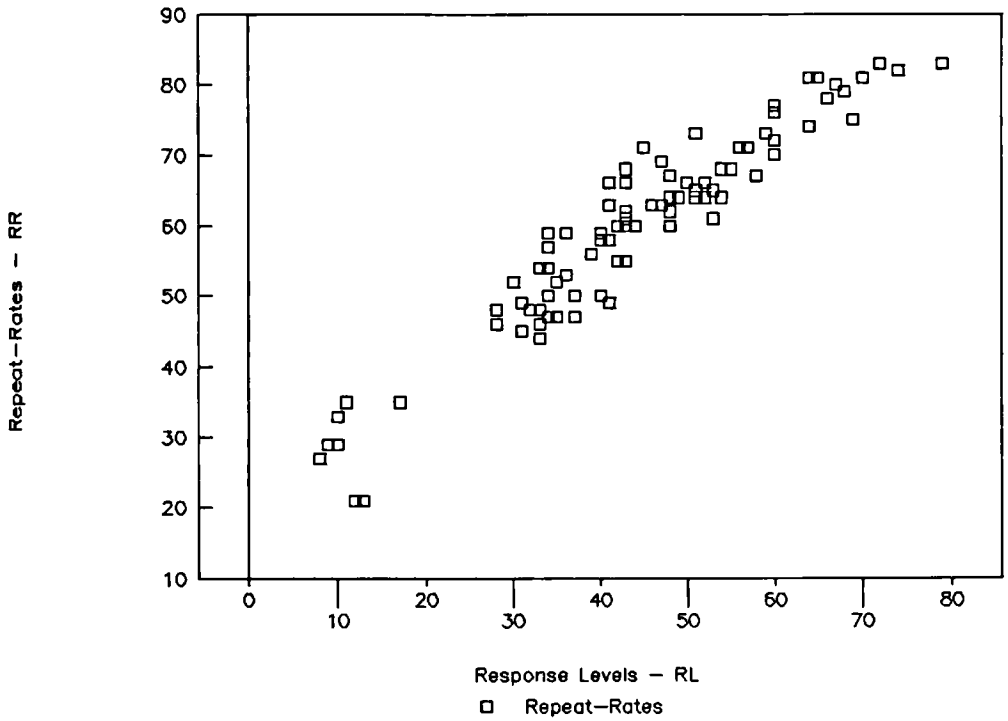


FIGURE 10.5.

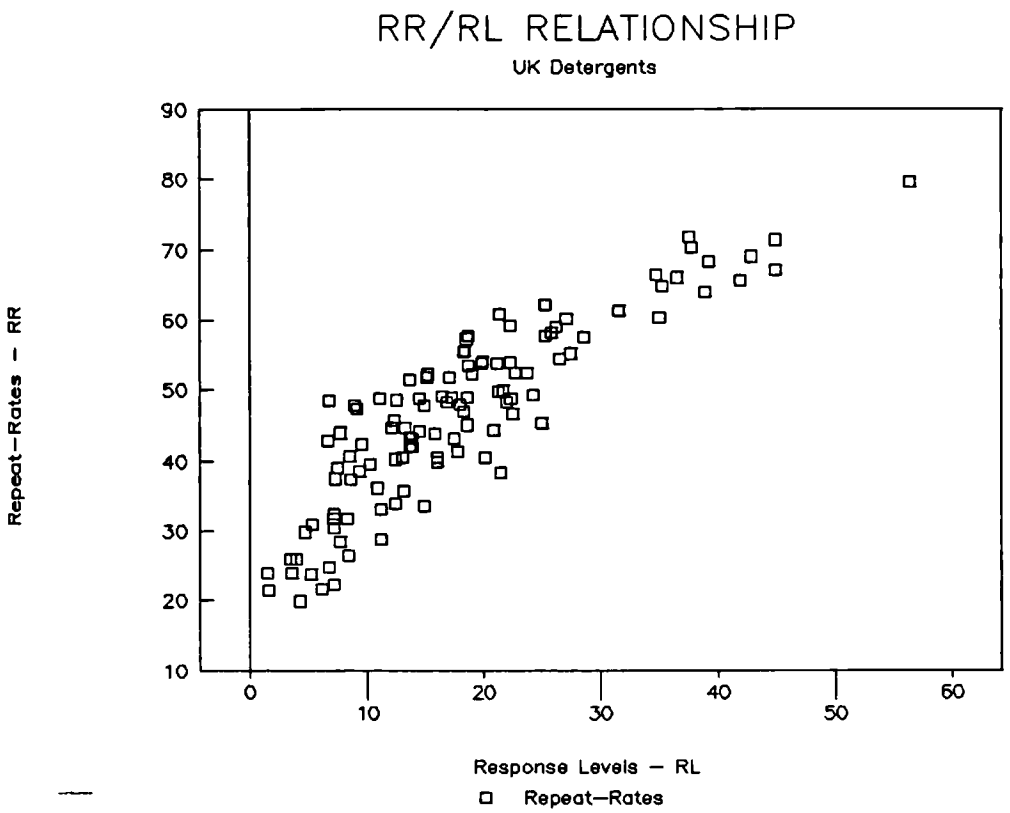


FIGURE 10.6.

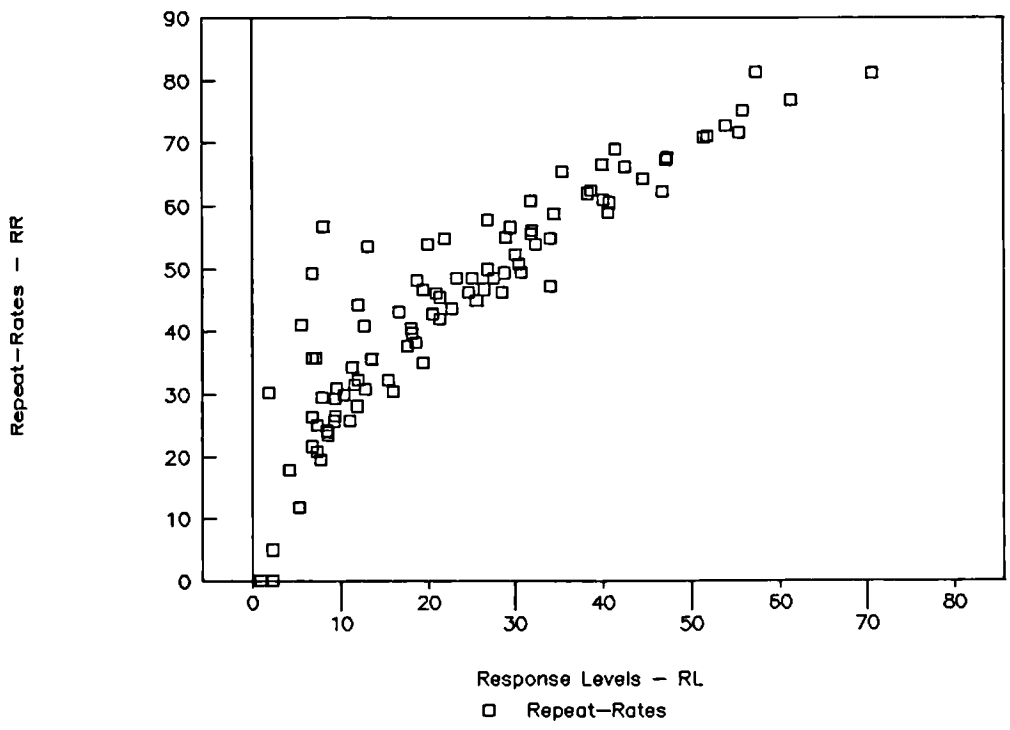


FIGURE 10.7.

RR/RL RELATIONSHIP

UK Soups

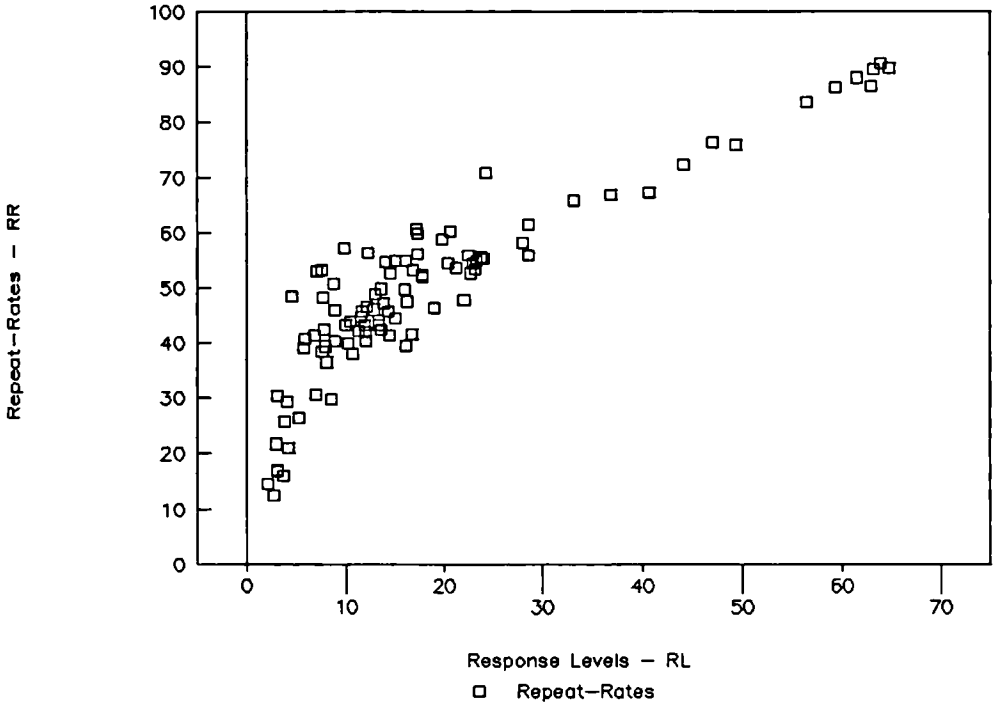


FIGURE 10.8.

RR/RL RELATIONSHIP

UK Toothpaste

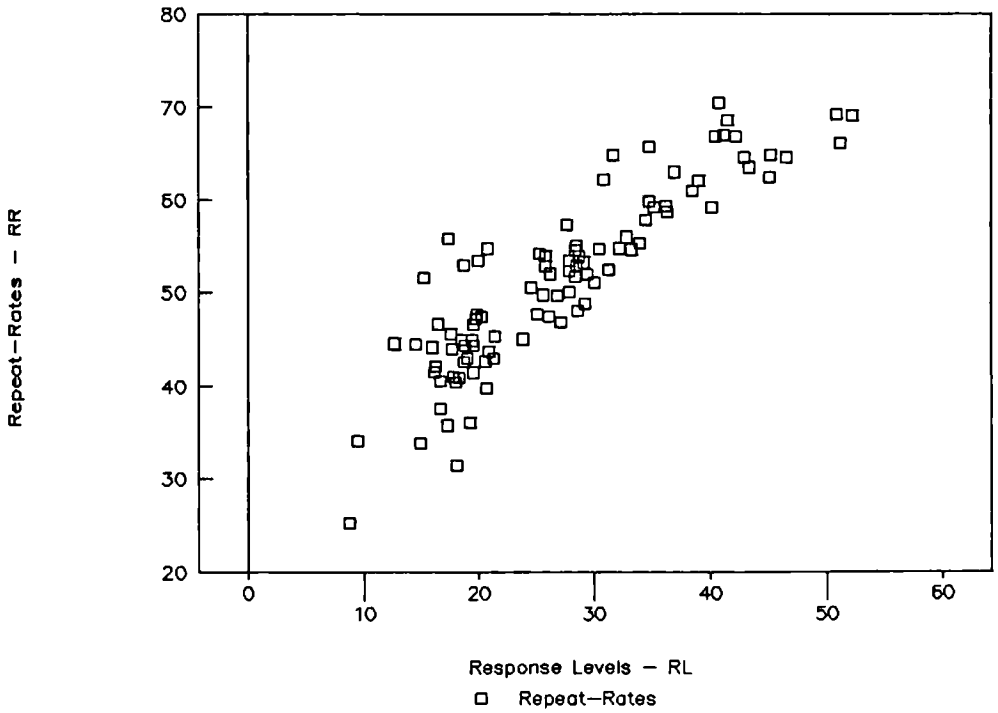
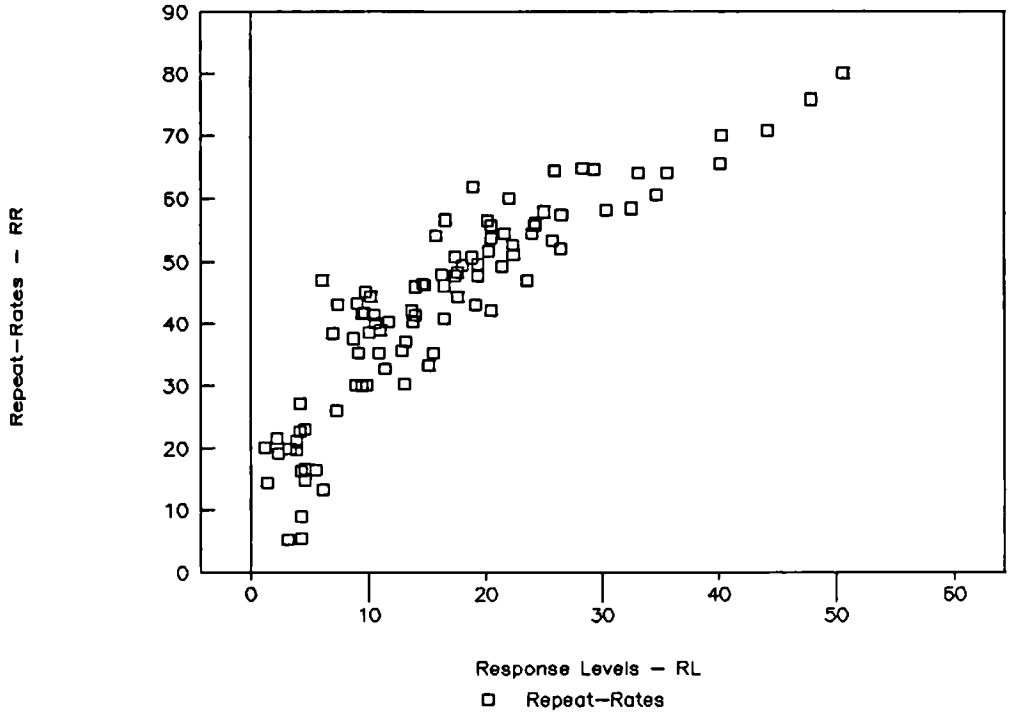


FIGURE 10.9.

RR/RL RELATIONSHIP

UK Fizzy Drinks



Nonetheless, in order to "break" the relationship into its component parts (i.e. into the smooth and the rough) we needed to fit a line to the relationship.

Of the many possible ways to fit a straight line to a set of data (e.g. see Ehrenberg, 1975) the most common method is Least Square Regression (Hartwig and Dearing, 1979). This would have provided us with the "best" fitting equation for each Single Set of Data (SSoD), i.e. one for each product in the two countries and, within each product, one for each attribute, for a total of nearly 200 different equations for Attribute Beliefs.

This did not seem to be very either very practical or very useful to our purpose of obtaining a generalisable relationship between the two variables: each single equation was unlikely to fit any other set of data. Moreover, we could have regressed RR on RL or RL on RR obtaining two different sets of nearly 200 equations.

Alternatively we could look for a model that might fit Many Sets of Data (MSoD) sets within a given rough.

We decided to proceed in a iterative mode, firstly deriving different equations for each SSoD, then seeing whether and how they were similar and might be represented by one or a few "common" relationships, without any substantial loss of fit.

This would allow us to discuss not only the issue of finding the best working solution in terms of establishing a relationship between Repeat-Rates and Response Levels, but also the question of estimating the most useful coefficients, i.e. parameters which would hold under different conditions (i.e. became *predictable*).

A) Regression Lines

As a first step we derived a Least Square Regression equation for each of the eleven or so SSoD's corresponding to each attribute responses (across brands) within each product field, as illustrated for Breakfast Cereals in Table 10.1. below (out of the ninety-nine possible ones for the nine product fields in the two countries). We chose RR as the dependent variable because the results in Chapter 9 had indicated that the size of Repeat-Rates depended upon the size of the corresponding Response Levels.

Table 10.1.
Repeat-Rates/Response Levels Relationship
One Linear Regression for Each Attribute
(Breakfast Cereals in the US)

Attributes	Fitted Equation	R^2	MAD
Keep Coming Back To	RR = 0.87RL + 33	.85	4
Popular with Family	RR = 1.09RL + 20	.86	3
Tastes Nice	RR = 1.05RL + 16	.90	4
Good Value for Money	RR = 0.89RL + 19	.87	5
Reasonably Priced	RR = 0.77RL + 22	.97	2
Nourishing	RR = 0.61RL + 33	.86	6
Very Natural Flavour	RR = 1.18RL + 6	.85	7
Help You to Keep Fit	RR = 1.12RL + 4	.85	8
Low in Sugar	RR = 1.25RL + 5	.92	7
Stay Crispy in Milk	RR = 1.00RL + 18	.78	5
Fun For Children to Eat	RR = 0.80RL + 21	.95	4
AVERAGE ATTRIBUTE	RR = 0.98RL + 17	.88	5

By means of Least Square Linear Regression we have obtained eleven equations, portraying the relationship between Repeat-Rates and Response Levels for each Attribute Belief of Breakfast Cereals in the US. Their slopes range between extremes of .61 and 1.25, with corresponding intercepts (varying inversely to the slopes) between 33 and 4. For the average attribute the slope is close to 1 and the intercept is about 17. Although such 11 equations fit the data well, i.e. an average R^2 equal to .88 and an average "rough" of plus or minus 5 points, they have the major drawback of not being generalizable to any other set of data. For example, what use would it be to a manager in the US (or the UK) to know that, in January 1988, the relationship between Repeat-Rates and Response Levels of consumers living in Athens, Georgia was RR=.87RL+33 for the Attribute Belief "Keep Coming Back To" but RR=1.09RL+20 for "Popular with the Family"? Similar reasoning applies to each of the ten or so regression equations which can be obtained for each brand within each product field. Moreover, regressing RL on RR would have yielded a set of equations different from those in Table 10.1..

A further step towards obtaining a generalisable relationship between Repeat-Rates and Response Levels was to pool together all Repeat-Rates and all Response Levels *within* each product category, in order to obtain an estimate of the general relationship between Repeat-Rates and Response Levels for each product field. The pooling of data is considered appropriate in marketing research when the purpose is "*to develop a concise instrument that would be reliable and meaningful [...] in a variety of sectors*" (Parasuraman, Zeithaml and Berry, 1988). Furthermore, the average MAD of the coefficients b's is only about .16.

By pooling the data we reduced the number of equations portraying the relationship between Repeat-Rates and Response Levels from a total of nearly 200 to an overall total of 9, one for each product in the two countries. Results are reported in Table 10.2. below.

TABLE 10.2.
Attribute Beliefs
One Linear Regression for Each Product

UNITED STATES				UNITED KINGDOM			
	Fitted Equation	MAD	R^2		Fitted Equation	MAD	R^2
Products				Products			
Laundry Detergents	RR = 0.84RL + 22	5	.83	Laundry Detergents	RR = 1.06RL + 28	5	.78
Breakfast Cereals	RR = 0.97RL + 17	8	.79	Breakfast Cereals	RR = 1.01RL + 21	5	.81
Services				Soups	RR = 0.96RL + 32	5	.80
Fast Food Chains	RR = 0.78RL + 25	4	.92	Toothpaste	RR = 0.85RL + 28	3	.79
TV News	RR = 0.86RL + 21	3	.91	Fizzy S. Drinks	RR = 1.35RL + 21	6	.79
Average	RR = .82RL + 21	5	.86	**Average**	RR = 1.05RL + 26	5	.79

Compared with the fit of the eleven regression equation in Table 10.1., the results for the pooled Breakfast Cereals data have lost a few points in the overall fit (i.e. an R^2 of .79 here versus .88 on average in Table 10.1.) and in the size of the scatter (i.e. +/- 8 points here versus +/- 5 in Table 10.1.). However, the equations in Table 10.2. generally fit the data well, i.e. plus or minus 5 points on average and with R^2s ranging from about .8 to over .9. In all instances their slopes are close to one (but they tend to be a bit higher in the UK compared with the US) and their intercepts are about 20 in the US and 25 in the UK, a feature also evident through "eyeballing" of the data (see Chapter 9).

Despite their good fit and reduced number, the equations in Table 10.2. still have the major drawback of differing from each other and hence not being generalizable to any other set of data.

Rather, if we could find one smooth that would fit all sets of data with about the same scatter, we would provide both academic researchers and managers with a tool useful to make predictions of Repeat-Rates from Response Levels. They could then be used as a bench-mark when making judgements about their own results.

B) A Common Slope of 1.

Because all Regression Equations both in Table 10.1. and in Table 10.2. had slopes which were approximately 1, as an additional iteration towards establishing a generalizable relationship between the two variables we deliberately assumed a slope of 1 throughout the various product fields, and then obtained the intercept by calculating the average difference between Repeat-Rates and Response Levels for the data pooled within each product field. The resulting equations are reported in Table 10.3. below.

TABLE 10.3.
Attribute Beliefs
A Common Slope of 1

UNITED STATES				UNITED KINGDOM			
	Fitted Equation	MAD	R^2		Fitted Equation	MAD	R^2
Products				Products			
Laundry Detergents	RR = RL + 18	5	.80	Laundry Detergents	RR = RL + 29	5	.77
Breakfast Cereals	RR = RL + 16	8	.77	Breakfast Cereals	RR = RL + 21	5	.81
Services				Soups	RR = RL + 31	6	.79
Fast Food Chains	RR = RL + 15	5	.91	Toothpaste	RR = RL + 24	3	.79
TV News	RR = RL + 16	4	.91	Fizzy S. Drinks	RR = RL + 26	7	.78
Average	RR = RL + 16	6	.85	**Average**	RR = RL + 27	5	.79

There is no loss of fit in this new set of equations compared with the corresponding pooled Least Square Regression equations in Table 10.2.: the Mean Average Deviation and the degree of fit are of the same order of size in both Tables: i.e. on average +/- 5 or 6 points and about .8, respectively.

This is illustrated well graphically in Figures 10.10. to 10.18.: for both lines not only the scatter is irregular, but there is a consistent bias at the top and at the bottom ends of the scale, where we had already noted a slight curvature in the plots (see Figures 10.1. to 10.9.). In particular both the regression and the "slope of 1" line overestimate the Observed bottom Repeat-Rates, which are equal or close to zero for very low Response Levels (since few people mentioned an attribute in the first place even fewer repeat it). Both lines also overestimate the top-end Repeat-Rates, perhaps because of a "ceiling" effect for the Repeat-Rates corresponding to the highest Response Levels. This is particularly so for the Response Levels in the seventies or above, for which the differential between these RL and the corresponding RR is constrained by the not too far ceiling of 100%. It is for these values that the curvature at the top end of the plots is most evident (see Figures 10.1. to 10.9.).

Finally, if we had used RL as the dependent variable, we would have obtained equations similar to the ones in Table 10.3., expect for the sign of the intercept.

FIGURE 10.10.

RR/RL RELATIONSHIP

Laundry Detergents

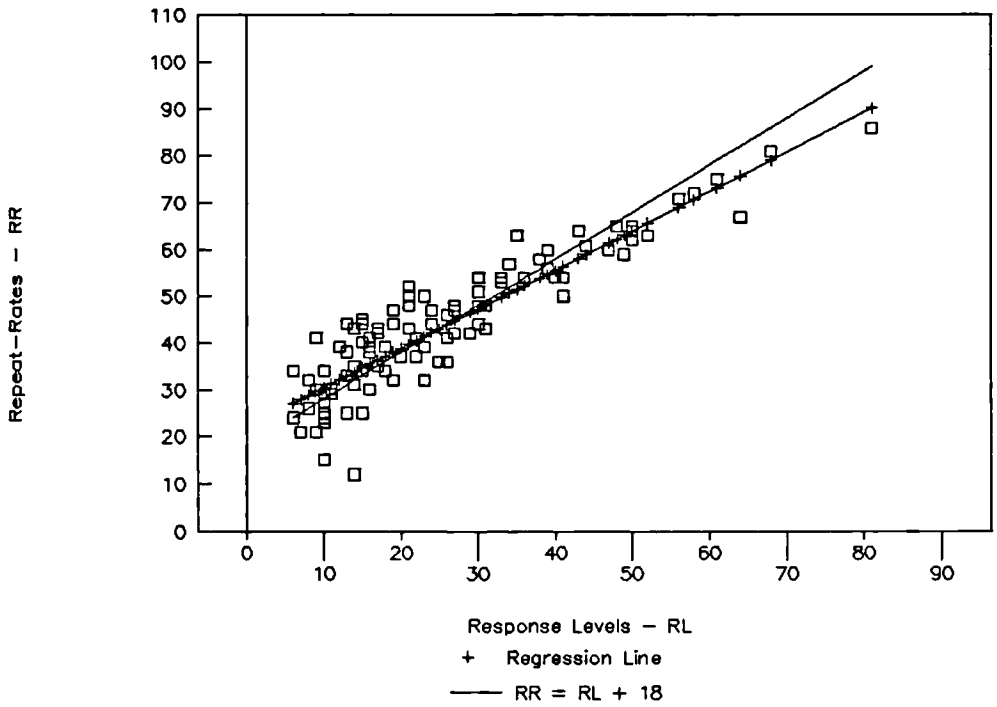


FIGURE 10.11.

RR/RL RELATIONSHIP

Fitted Lines - Breakfast Cereals

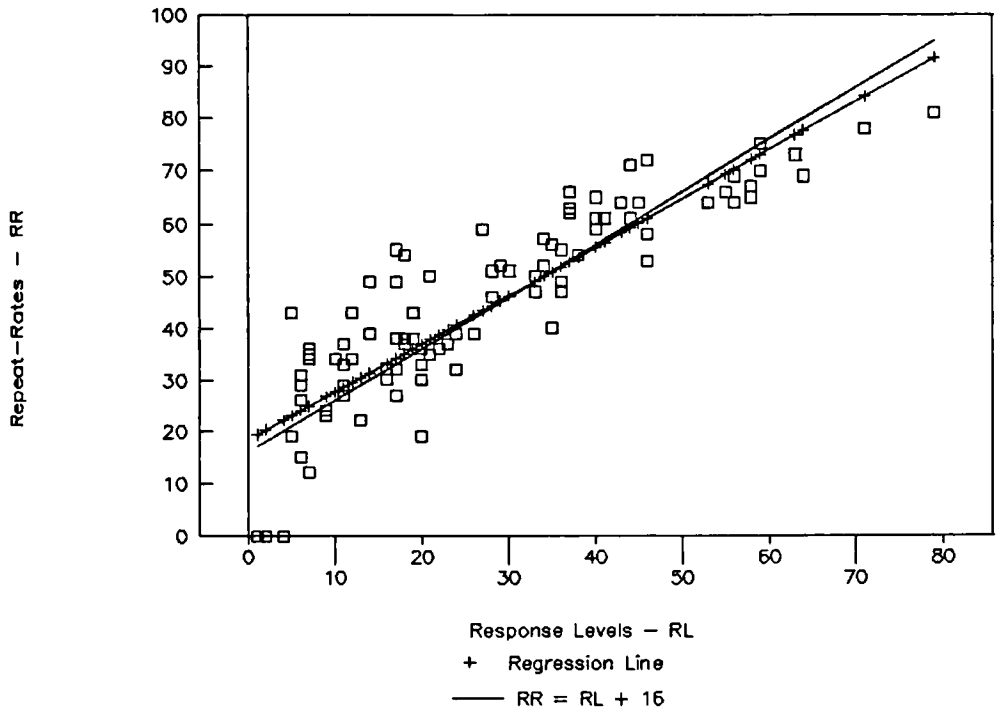


FIGURE 10.12.

RR/RL RELATIONSHIP

Fitted lines – Fast Food

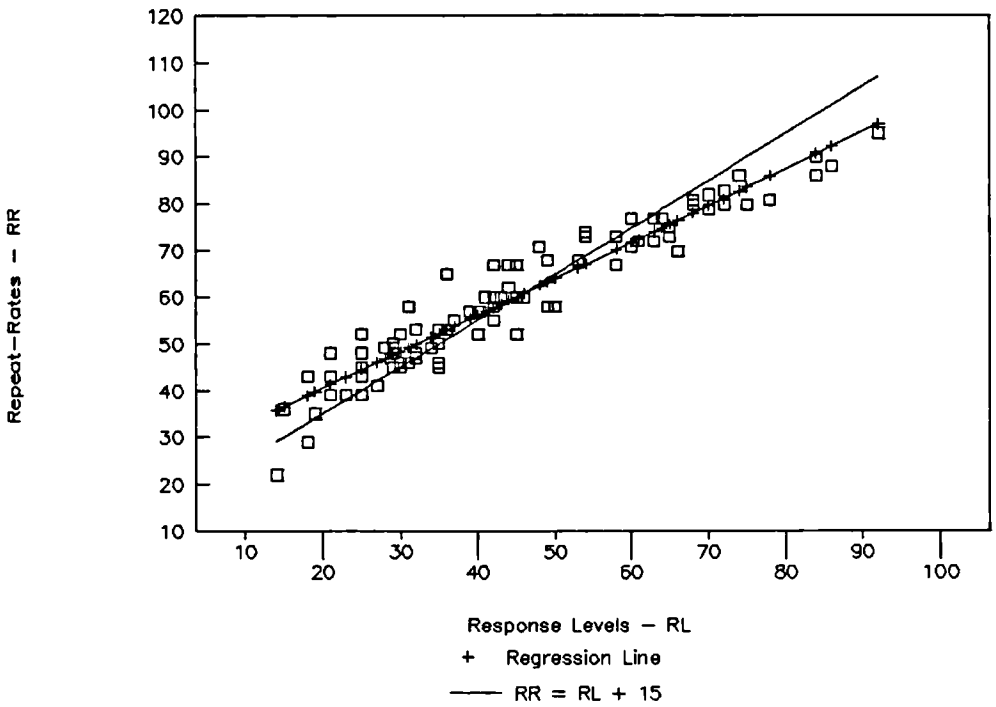


FIGURE 10.13.

RR/RL RELATIONSHIP

Fitted Lines – TV News – Daily

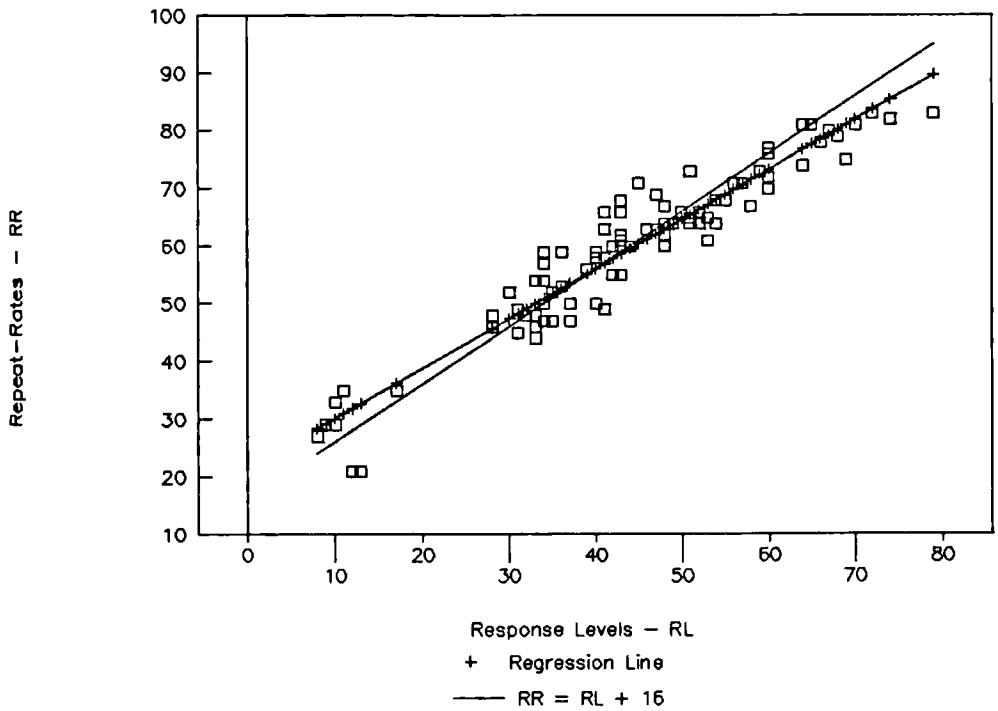


FIGURE 10.14.

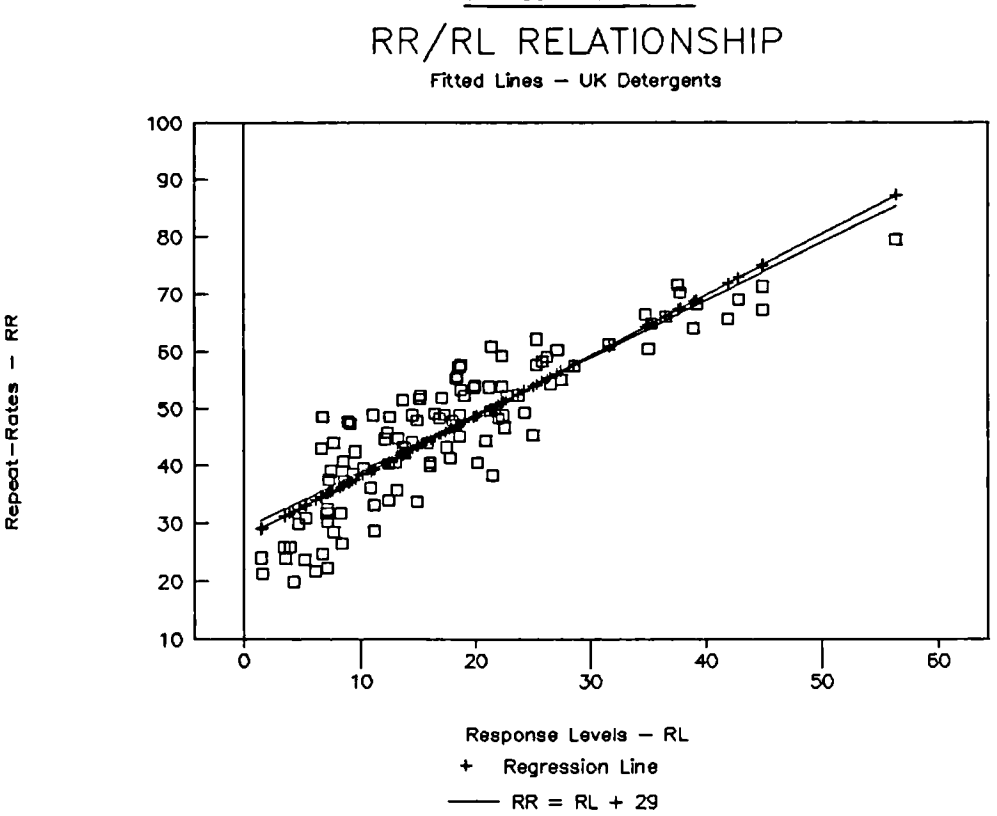


FIGURE 10.15.

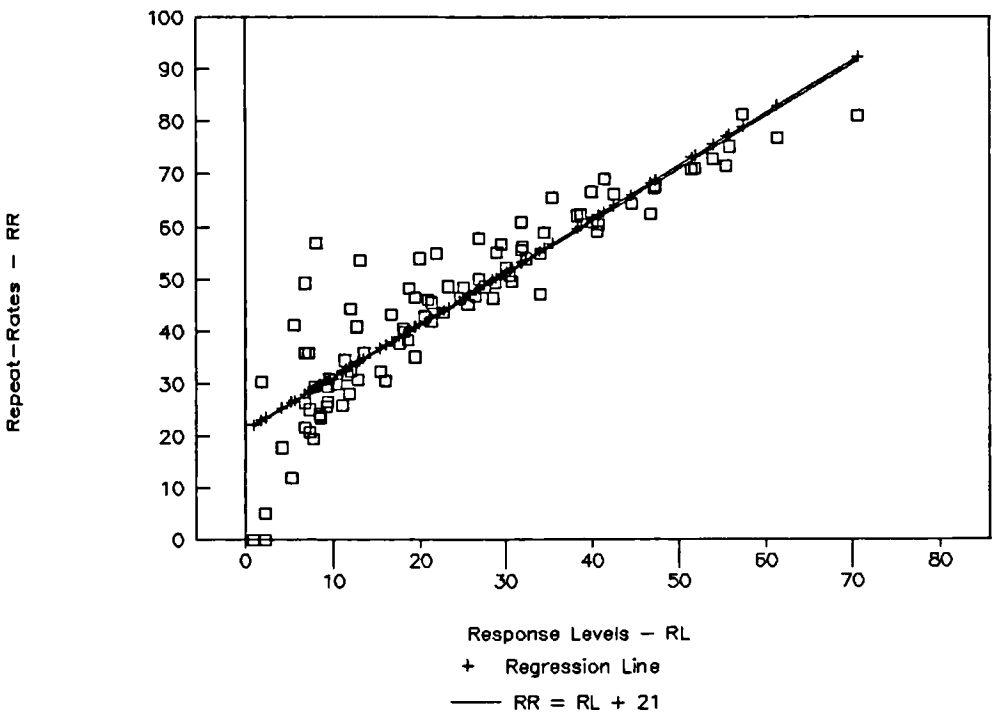


FIGURE 10.16.

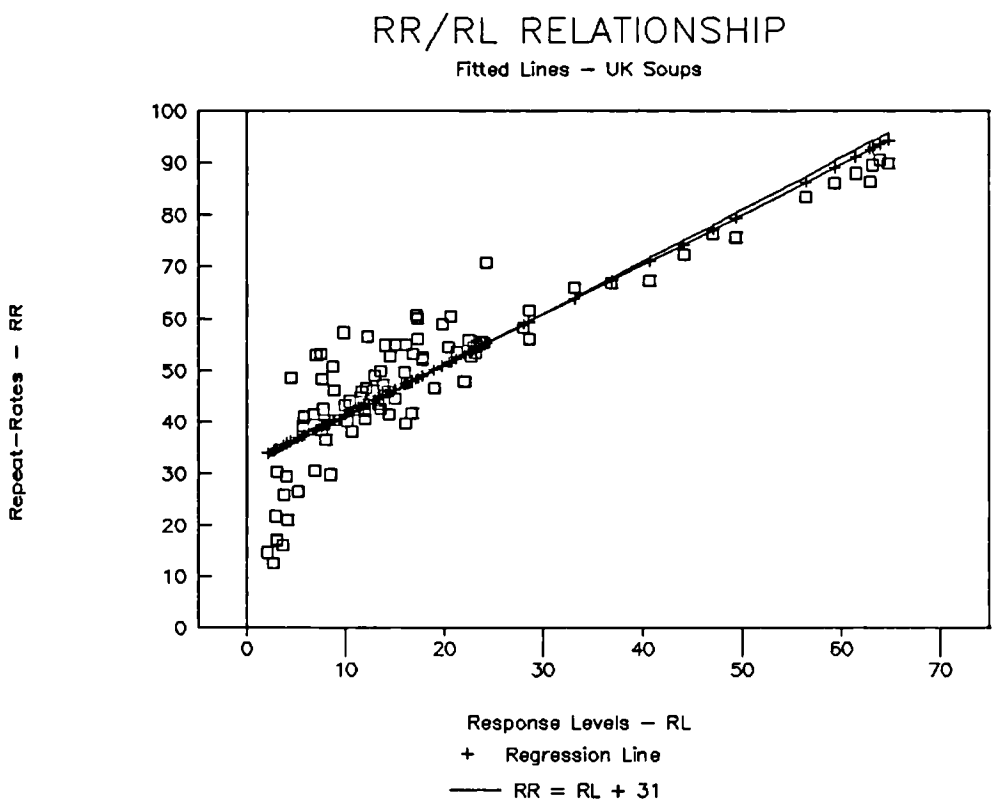


FIGURE 10.17.

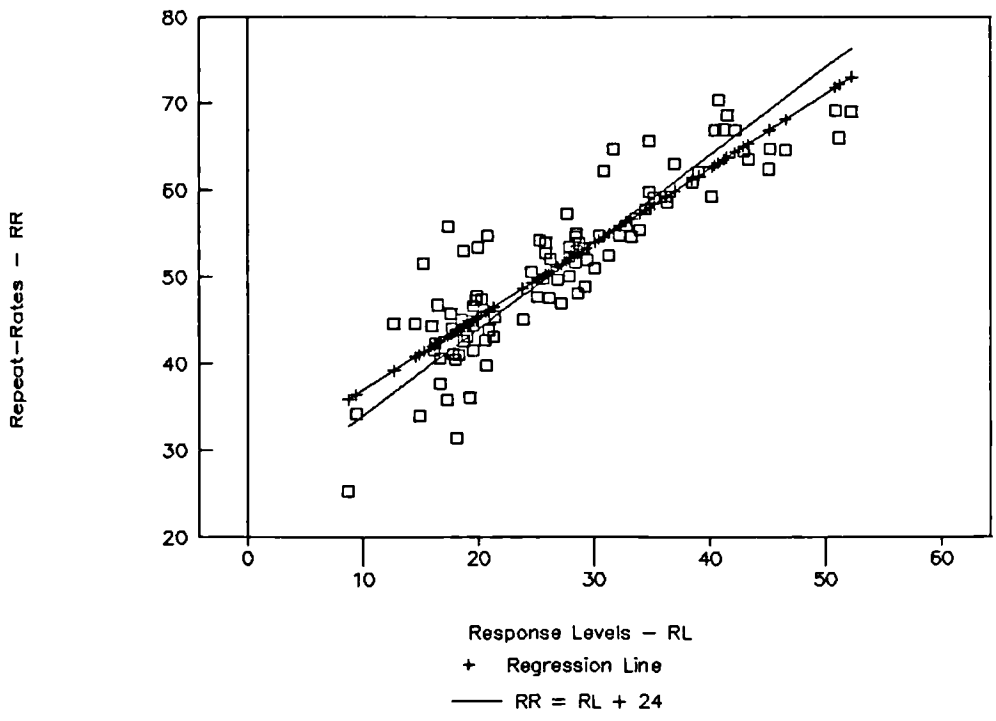
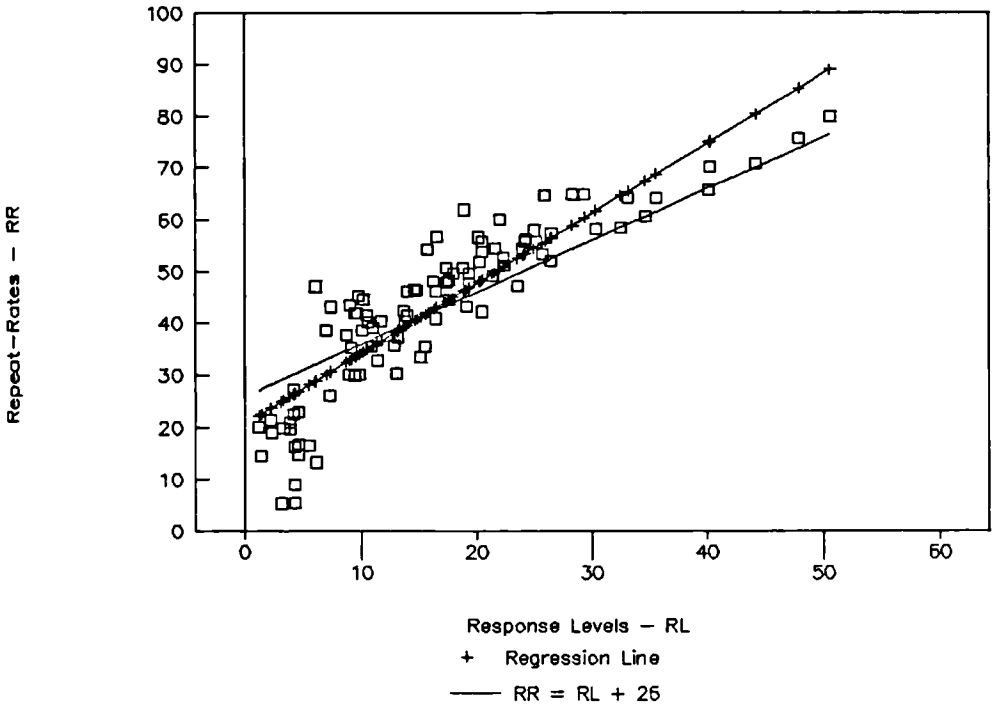


FIGURE 10.18.

RR/RL RELATIONSHIP

UK Fizzy Drinks



In practice, Table 10.3. suggests that the relationship between Repeat-Rates and Response Levels can be taken to be linear and of the simplified form:

$$\mathbf{RR = RL + C}$$

where RR is the Repeat-Rate, RL the Response Level and C is a parameter which may vary from case to case, but is more or less of the same size for different product categories in the same country (as discussed below). For example, the parameter is on average 16 in the US and 27 in the UK.

This development in deriving the relationship between RR and RL represents a major improvement, in terms of predictability, over the equations in Table 10.2.: despite being simpler there is no notable loss of fit and the scatter is still irregular.

The tendency of the intercepts C in Table 10.3. to be lower in the US compared with the UK is the only consistent subpattern in the relationship. This could be (at least partially) a function of generally higher Response Levels (especially for Services) in the US and the already mentioned "ceiling" effect for the Repeat-Rates corresponding to the highest Response Levels. For example, since a number of Response Levels for Fast Food Restaurants are in the upper seventies or above, the corresponding RRs are constrained by the approaching 100% ceiling. Hence the much lower parameter of 15 for Fast Food Restaurants in Table 10.3. (corresponding to average RLs equal to 45) compared with, for example, an intercept of 29 for Laundry Detergents in the UK, which had much lower Response Levels throughout (i.e. 19 on average).

However the "ceiling" effect appears to bias the size of the intercept more between countries than *within* a country: as already noted in previous chapters, in the US the RLs for Services are higher than for fmcg's, and yet the size of the intercept is more or less the same. Hence, the country or the region (e.g. Georgia vs. the rest of the USA) might indeed be a factor affecting both the size of Response Levels and that of the intercepts, since for example to consistently higher RL's for the fmcg products in the US compared with those in the UK correspond *lower* parameters.

In future research we might look into developing either a curvilinear relationship or a correction factor which might take account of the consistent bias at the two ends of the relationship and/or any other factor affecting the size of the intercept.

However, the main issue here is that the form of the relationship, with a slope of one, holds with about the same scatter across Many Sets of Data and a wide range of conditions (e.g. different countries) and despite the already noted considerable variations in the mean attitudinal responses, in the average frequency of buying within the product sets, and in the response levels for different attributes within each product category (see Section 9.5.1.). For Breakfast Cereals,

for example, the degree of fit (R^2) is about .8 for the low response attribute "Stay Crispy in Milk" and .9 for the high response attribute "Taste Nice".

C) One Single Model.

Finally, we explored the applicability to all our data of a *single* model which would give a single and predictable (i.e. always the same) summary for the relationship between RR's and RL's. Any new data could then be analyzed against the backdrop of such single model to bring out: a) what deviations or biases characterise the new data, and b) how they fit in with the known biases of the single equation.

By pooling all the US and UK data together and assuming once again a common slope of 1 we calculated an average intercept of about 22 ($\simeq$ 20), with a "rough" or scatter of +/- 7. This is not much greater than the average MAD of +/- 5 (or 6) for the nine single equations in Table 10.3.. The common equation to all product fields in the two countries could then be set at:

$$RR \simeq RL + 20.$$

The Observed Repeat-Rates compared with the ones Predicted by using a slope of 1 and an intercept of 20 are summarised in Table 10.4. for each product category in the two countries.

The Predicted Repeat-Rates summarised in Table 10.4. fit the data well overall (i.e. with average R^2s of .81 in the US and .87 in the UK), with some systematic scatter in the two countries, i.e. the residuals tend to be consistently negative in the US (-4 on average) and consistently positive in the UK (+ 6 on average and with particularly large differences there for Laundry Detergents and Soups). Such residuals do not appear to vary with the size of the brand within a product field (except perhaps for Fizzy Drinks in the UK).

The relationship **RR $\simeq$ RL + 20** and its known biases (i.e. the "country" trend and the more marked differences for Detergents and Drinks in the UK) can give both managers and academic researchers a good first approximation of the size of Repeat-Rates to be expected when measuring beliefs about brands over time.

TABLE 10.4.
Observed and Predicted Repeat-Rates
RR = RL + 20
(Average attribute for each product)

Brands (ranked by U)	US Repeat-Rates										UK Repeat-Rates											
	Laundry Deterg.		Break. Cereals		F.Food Chains		TV News		Average Product		Laundry Deterg.		Break. Cereals		Soups		Toothpaste		Fizzy S. Drinks		Average Product	
	Obs.	Pred.	Obs.	Pred.	Obs.	Pred.	Obs.	Pred.	Obs.	Pred.	Obs.	Pred.	Obs.	Pred.	Obs.	Pred.	Obs.	Pred.	Obs.	Pred.	Obs.	Pred.
1st	58	62	50	53	69	77	65	71	61	66	65	57	71	72	82	74	65	62	63	53	69	64
2nd	48	51	60	57	70	75	60	65	60	62	57	48	59	58	59	45	59	54	52	41	57	49
3rd	45	49	51	55	74	83	61	66	58	63	53	44	51	47	53	39	55	51	50	39	52	44
4th	48	49	30	37	52	55	59	64	47	51	49	39	47	43	49	36	51	46	44	36	48	40
5th	42	43	49	52	53	56	61	65	51	54	48	36	39	38	45	31	49	43	36	33	43	36
6th	39	40	31	35	54	57	63	69	47	50	45	34	33	33	43	30	47	42	37	30	41	34
7th	40	39	28	35	49	50	56	60	43	46	42	33	36	31	38	28	44	40	31	29	38	32
8th	36	36	44	48	-	-	59	65	46	49	36	29	26	29	31	26	43	39	30	28	33	30
9th	38	38	33	36	-	-	51	53	41	42	28	26	-	-	-	-	-	-	-	-	28	26
Average Brand	44	45	43	45	60	65	59	64	50	54	47	39	45	44	50	39	51	47	43	36	47	41
MAD	5		8		6		6		6		9		5		12		5		9		8	
r	.92		.93		.95		.79		.90		.91		.96		.95		.94		.91		.93	
R^2	.85		.86		.90		.62		.81		.84		.92		.89		.88		.82		.87	

NOTES: (i) Pred.: RR = RL + 20
(ii) The MAD's, r's and R^2s are the average of individual attributes.

10.2. DERIVING THE MODEL FOR OTHER VARIABLES

Following the same sort of procedure we can also formalize the relationship between Repeat-Rates and Response Levels for the other variables, as discussed below.

Both the eyeballing of the data in Tables 9.8., 9.9. and 9.11. and the examination of their scatter plots indicated that the relationship between Repeat-Rates and Response Levels was of the same form for Claimed Usage, Likelihood to Buy and Advertising Recall.

As done for Attribute Beliefs, we first fitted one Least Square Linear Regression equation to each set of data, for a total of 27 equations across the three variables and the four or five product fields in each country. These Regression equations fitted the data well in both countries, with average R^2s varying from a "low" of .67 for Claimed Usage in the UK to a high of .90 for Advertising Recall in the US. Similarly, the "rough" (i.e. MAD) was on average only +/- 4 or 5 points.

Despite their overall good fit, these individual regressions had the usual drawback of not being generalizable to any other set of data.

Since we noticed that, on average, the slopes of the Regressions Equations were once again close to 1, we then proceeded to develop and check a new set of equations with a constrained slope of one throughout, as reported in Table 10.5..

The results in Table 10.5. indicate that by "forcing" a slope of 1 throughout the data there is no substantial loss of fit compared with the Least Square Regressions: in both cases the R^2s range from a "low" of .67 for Claimed Usage in the UK to a high of .90 for Advertising Recall in the US. The "rough" increases on average of only about one point (i.e. from +/- 5 points before to +/- 6 points in Table 10.5). This is quite close considering the range of Repeat-Rates (e.g. from about 80% to about 30% for repeat Usage of Laundry Detergents in the US).

The advantage of the relationships in Table 10.5. compared with the mentioned Regression Equations lies once more in having identified a common form of "smooth", i.e. **RR = RL + C** which holds across the range of variables and product fields in the two countries with no major changes in the "rough".

This allows us to establish some rule of thumbs or guidelines for predicting the relationship between Repeat-Rates and Response Levels in the two countries. Hence in the US RR=RL+$\simeq$23 for Claimed Usage and Likelihood to Buy, and RR=RL+13 for Advertising Recall. Similarly, in the UK, RR=RL+40 for Claimed Usage and Likelihood to Buy, and RR=RL+25 for Advertising Recall.

TABLE 10.5.
Claimed Usage, Likelihood to Buy, Advertising Recall
A Common Slope of 1

UNITED STATES										UNITED KINGDOM									
	Claimed Usage			Likelihood to Buy			Advertising Recall				Claimed Usage			Likelihood to Buy			Advertising Recall		
	Fitted Equation	MAD	R^2	Fitted Equation	MAD	R^2	Fitted Equation	MAD	R^2		Fitted Equation	MAD	R^2	Fitted Equation	MAD	R^2	Fitted Equation	MAD	R^2
Products										Products									
Detergents	RR = RL + 28	5	.87	RR = RL + 27	16	.45	RR = RL + 12	5	.91	Detergents	RR = RL + 44	6	.42	RR = RL + 44	3	.81	RR = RL + 21	4	.93
Cereals	RR = RL + 28	9	.35	RR = RL + 31	7	.66	RR = RL + 19	4	.77	Cereals	RR = RL + 37	7	.75	RR = RL + 35	8	.81	RR = RL + 22	6	.82
Services										Soups	RR = RL + 42	6	.78	RR = RL + 43	9	.68	RR = RL + 29	2	.98
F.F.Chains	RR = RL + 16	5	.88	RR = RL + 21	6	.98	RR = RL + 9	4	.97	Toothpaste	RR = RL + 41	6	.50	RR = RL + 40	3	.85	RR = RL + 24	4	.78
TV News	RR = RL + 13	9	.80	RR = RL + 16	5	.96	RR = RL + 12	5	.97	Fizzy S.Drinks	RR = RL + 38	3	.90	RR = RL + 39	5	.82	RR = RL + 27	6	.82
Average	RR = RL + 22	7	.73	RR = RL + 24	9	.76	RR = RL + 13	5	.91	Average	RR = RL + 40	6	.67	RR = RL + 40	6	.79	RR = RL + 25	4	.87

The already mentioned "ceiling" effect which affects the Repeat-Rates associated with very high Response Levels is at the base of lower parameters for the two Services compared with the two fmcg's in the US. The same sort of "ceiling" effect is one factor making the US parameters C about half the size of the corresponding UK ones, because of the generally higher Response Levels in the US.

10.3. SUMMARY REMARKS.

In this chapter we have sought to identify the form of the relationship between Repeat-Rates and Response Levels that had emerged from the analysis undertaken in Chapter 9.

In particular, we have established that there is a mainly linear relationship between Repeat-Rates and Response Levels which can be summarized as: **RR = RL + C** across the different conditions such as different sets of brands and attributes from different countries, product categories, *and* variables. A consistent bias in the relationship is the slight curvature at the top and bottom ends of the value ranges.

The parameter C may vary from case to case (with an apparent country bias), but is more or less of the same size for different product category in the same country, and within the same variable. Hence for example the found approximate relationship of RR = RL + 20 (plus corrections) for Attribute Beliefs.

The only consistent further sub-pattern that has surfaced so far is that to higher Response Levels correspond a lower parameter C. This is due to a "ceiling" effect for Repeat Rates corresponding to high Response Levels, hence the curvature at the higher end of the scatter plots.

Having established both a consistent form of the relationship and consistent sub-patterns, we have made it possible to predictably quantify the Repeat-Rates, within a known scatter, from the Response Levels. These predicted values (and its known correction factors) can then be used as a bench-mark against which to compare the results from new sets of data.

CHAPTER 11: CHANGES IN ATTITUDES VERSUS CHANGES IN BEHAVIOUR

11.1. Typical Results and Expectations

11.1.1. Possible Explanations

11.2. The Relationship Between Response Levels - RL and Changes in Usage

11.2.1. Detailed Results

11.3. The Relationship Between Repeat-Rates - RR and Changes in Usage

11.4. The Relationship Between Likelihood to Buy and Advertising Recall and Changes in Usage

11.5. Summary Remarks

11. CHANGES IN ATTITUDES VERSUS CHANGES IN BEHAVIOUR

The results discussed in the previous Chapters were about steady state, i.e. the overall usage or attitude statements of respondents did not change considerably in the time between the two interviews, and there were no major "upsets" in the markets for our four product fields, with the exception of the closure of the Restaurant chain D-Lites.

Nonetheless the results showed that, even in steady state, many individual consumers were not very consistent over time in their attitude statements about a brand.

In this Chapter we will take our analysis one step forward by focusing on change, namely we will investigate: i) if and how individual variations over time in claimed Usage (U) relate with variations in Response Levels (RL) and Repeat-Rates (RR); and ii) how, in this context of inconsistent usage claims over time, RL, RR and U interrelate to each other.

This was the last objective of our research, as mentioned in Chapter 1.

After discussing typical results and expectations (Section 11.1.), we present our relatively complex findings for RL of Attribute Beliefs and Usage changes (Section 11.2.), then for RR and their interrelations with RL and U (Section 11.3.). We report on the corresponding patterns for Likelihood to Buy and for Advertising Recall in the US[32] in Section 11.4..

Finally, in Appendix F we illustrate the results of an Analysis of Variance (ANOVA) which had been undertaken on Breakfast Cereals in the US at an early stage and before conducting the detailed analysis discussed in the next two sections, with the purpose of checking on the statistical significance of some of the patterns.

[32] The tabulations concerning Likelihood to Buy and Advertising Recall by Usage Changes in the UK were incomplete.

11.1. TYPICAL RESULTS AND EXPECTATIONS.

First we consider Response Levels (RL) and Usage changes among four groups of consumers:

i) respondents claiming to be "Users" of the brand at both interviews (U/U);

ii) claimed "Users" at the first interview who claimed to be "Non Users" at the second (U/NU);

iii) claimed "Non Users" at t_1 who claimed to be "Users" at t_2 (NU/U); and

iv) people stating to be "Non Users" at both times (NU/NU).

A typical result when comparing the attitude statements of consumers who gave the same usage claims at both interviews with the statements of those who changed is illustrated in Table 11.1. below, for Response Levels at the 1st interview.

TABLE 11.1.
Response Levels - RL % by Subsequent Usage
(An example)

"Tastes Nice"				
Response Levels - RL	**Claimed Usage at the two Interviews**			
	U/U	U/NU	NU/U	NU/NU
	%	%	%	%
Raisin Bran	86	74	46	32

NOTES: U = "Users"; NU = "Non Users"
U/U = "Users" at 1st Interview who were also "Users" at the 2nd, etc.

While 86% of persistent "Users" of the Cereal Raisin Bran mentioned the attribute "Tastes Nice" at the first interview, "only" 74% did so among the people who subsequently claimed to be "Non Users" of that brand. The belief mentions at the first interview among both persistent and lapsed "Users" are almost twice the size of the responses of "converted" "Users" (at 46%) and of persistent "Non Users" (at 32%).

A similar gradient between the attitudinal Response Levels at the first interview with Usage change is found to apply not only to other brands and attributes of Breakfast Cereals (see Appendix E), but also more generally to the other product categories, both in the US and the UK (see Section 11.2.).

Could the differences in Response Levels at the first interview be an indication of the forthcoming Usage claim more generally? Thus, could we predict future changes in the Usage of a brand from (even small) changes in the size of the attitudinal Response Level?

Next, how do the corresponding Repeat-Rates (RR) vary with the differing Usage claims at subsequent interviews (see Table 11.2.)?

TABLE 11.2.
Repeat-Rates - RR % by Subsequent Usage
(An example)

"Tastes Nice"				
Repeat-Rates - RR	**Claimed Usage at the two Interviews**			
	U/U	U/NU	NU/U	NU/NU
	%	%	%	%
Raisin Bran	87	57	67	47

The Repeat-Rates - RR of steady "Users" U/U in Table 11.2. at 87% are also higher (and considerably so) than the Repeat-Rates of the other Usage groups (i.e. U/NU, NU/U and NU/NU). Among the latter three sub-groups there is a blip for the RR of the NU/U respondents, which also occurs for the other brands and attributes of Breakfast Cereals as well as for the different product fields.

This blip for the RR of NU/U is in contrast with the smooth gradient among the RL in Table 11.1. Moreover, the RR in Table 11.2. are higher than the corresponding RL in Table 11.1. (as we would expect given the results in Chapters 9 and 10), except for the U/NU sub-group. This sub-pattern also applies to different brands, attributes and products. How, in this context of variations in Usage claims between the two interviews, RL and RR are interrelated, will be discussed in Section 11.3.

11.1.1. Possible Explanations.

As noted in earlier Chapters, the literature has been concerned mainly with the *general process* regulating the relationship between changes in attitudes and changes in behaviour, while few authors have studied the correlation between changes in attitudes and changes in buying behaviour of the same consumers over time.

Nonetheless, we looked for clues to explain the results in Tables 11.1. and 11.2. in previous literature.

As discussed in Chapter 2, the Cognitive approach to Consumer Behaviour considers attitudes as the necessary, causative precursors of behaviour and any alteration in consumers'

attitudes would be indicative of a forthcoming behavioural change, hence: Attitude Change ⇒ Behaviour Change.

The results in Table 11.1., in particular that somewhat fewer lapsed than persistent "Users" (i.e. 74% versus 86%) had stated the belief "Tastes Nice" at the first interview, and that somewhat fewer chronic "Non Users" than converted "Users" of Raisin Bran had mentioned that attribute at the first interview (i.e. 32% versus 46%) seems consistent with a causal relationship between attitudes and behaviour.

Similarly, we could interpret the differences in Table 11.2. between the Repeat-Rates of persistent and lapsed "Users" (i.e. 87% versus 57%) and between persistent and lapsed "Non Users" (47% versus 67%) as indicative of the usage claims to come.

However, a causal relationship between Attitudes and Behaviour would not explain why the Response Levels - RL of lapsed "Users" are so much larger than those of converted "Non Users" (i.e U/NU = 74% versus NU/U = 46% in Table 11.1.). Nor does it explain why the Repeat-Rates -RR for "Switchers" vary in opposite directions than the Response Levels - RL for the same groups of consumers. This is consistently found to be the case for different brands, attributes and products.

Therefore we sought an alternative explanation that could account for all variations in Response Levels and Repeat-Rates.

In contrast to Cognitivism, the emphasis of a Behavioural perspective to Consumer Behaviour has been on the reinforcements required to ensure the repetition of choice behaviour (e.g. Foxall, 1984), rather than on the prediction of future changes. Thus the correlation between attitudes and behaviour has been approached in terms of mutual support and consistency rather than unilateral causality, hence: Attitudes ⇔ Behaviour (e.g. the ATR model of advertising described in Chapter 5).

As already seen, extensive research broadly in this tradition has consistently shown a strong correlation between attitudinal responses and current and past behaviour (e.g. Barwise and Ehrenberg 1985; Bird and Ehrenberg 1966; Castleberry and Ehrenberg 1990; and our own results in previous Chapters), with higher responses by the most frequent and recent users of the brand.

Consistently with such results, we believed[33] that the Response Levels would mainly vary in relation with the Usage claims at the time of the response, hence the lower the Usage claim at

[33] For simplicity, we have formulated our expectations in terms of Attribute Beliefs, but later we will report also on the results for Likelihood to Buy and Advertising Recall, which closely mirror the patterns for Attribute Beliefs.

the time of the interview, the lower the attitudinal response, regardless of the direction of any future or past change in Usage claims.

Hence higher Responses at the 1st interview for the U/NU respondents than for the NU/U group would arise from them being "Users" at the time of giving the attitudinal response.

In Chapter 9 we found Repeat-Rates to be directly correlated with the size of the Response Levels (Double Jeopardy) and, for "evaluative" attributes, to be indirectly correlated with the number of "Users" of the brand. The DJ relationship between RL and RR also applies to the results for the U/U and NU/NU sub-groups: to higher Response Levels for U/U (e.g. 86% in Table 11.1.) correspond higher RR (87% in Table 11.2.), compared with the RL and RR for the NU/NU sub-group (e.g. 32% and 47% respectively in our example). This pattern also generalizes to other brands, attributes and products.

However, we did not have any previous knowledge regarding the effect on Repeat-Rates of the *direction* of a change in Usage and the results here were not straightforward: i.e. the Repeat-Rates for "Switchers" were consistently found to vary in the opposite direction than the corresponding Response Levels. For example, in Table 11.2. the RR of the U/NU group at 57% was *lower* than that of NU/U (67%), despite corresponding to *higher* Response Levels (74% vs. 46% in Table 11.1.). This seemed to contradict the just mentioned DJ relationship between RL and RR.

Any interrelation between RL and RR affecting the results will be discussed in detail in Section 11.3..

11.2. THE RELATIONSHIP BETWEEN RESPONSE LEVELS - RL AND CHANGES IN USAGE.

In this section we aim to establish if attitudinal responses can be in any way predictive of subsequent changes in usage. If so, we would expect attitudinal responses at the first interview to be consistently higher for those who stay "Users" than for "Switchers" and, in turn, for persistent "Non Users".

First we discuss the detailed results for the Breakfast Cereal Raisin Brand and the Attribute Belief "Tastes Nice", then we show how the same pattern replicates across all brands and Beliefs of Breakfast Cereals in the US and also all other product categories, in the UK[34] as well as in the US. We will do the latter by forming averages across attributes and brands to summarise the individual results, and show the main pattern more clearly and concisely (see Appendix E for the detailed results of Breakfast Cereals in the US).

11.2.1. Detailed Results.

Table 11.1. showed a downward gradient in how many consumers stated the belief "Tastes Nice" about Raisin Bran at the 1st interview by whether they claimed to be using the brand either at both this and the follow up interview, or at only one of the two interviews, or at neither. The figures dropped from 86% to 32%, with those claiming to be "Users" at only one interview falling in between, but many more saying so if they were "Users" at the first interview (74%) than if they were "Non Users" (46%).

We believed these differences might not to be due to time as a factor, but to a halo effect arising from the attitude question being asked at the interview when a Usage rather than an Non Usage claim was being made.

By comparing the results at the 1st with the corresponding attitudinal responses at the second interview, broken down by whether respondents had previously changed their brand usage category, we could throw light on the causal sequence (if any) between attitudinal responses and usage claims. The two sets of results are reported in Table 11.3. below.

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[34] The UK results had been already calculated, but had never been fully interpreted. Since this part of the research was exploratory we needed as many replications as possible in order to confirm the conclusions drawn from the US data. Because the length of the gap between interviews did not seem to affect the main results, the UK results are averaged also across the four time gaps.

TABLE 11.3.
Response Levels - RL % by Subsequent Usage
(An example)

"Tastes Nice"								
Response Levels - RL	**Claimed Usage at the two Interviews**							
	U/U		U/NU	NU/U	NU/U	U/NU	NU/NU	
	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int
Raisin Bran	% 86	% 89	% *74*	% *62*	% *46*	% *42*	% 32	% 32

The Response Levels at the second interview also show a strong downward gradient from previous "User" ⇒ "User" to previous "Non User" ⇒ "Non User" (i.e. from about 90% to about 30% in our example here).

But Table 11.3. also brings the Response Levels scores for "Switchers" at the two interviews in direct juxtaposition. The two sets of Response Levels highlight the apparent effects of concurrent usage claims: the Response Levels are close at 46% and 42% if the response was given concurrently with a claim of Non Using the brand, irrespective of whether at the first or at the second interview, and higher at 74% and 62%, for the concurrent "Users" who had claimed to be "Non Users" of the brand at the other, following or preceding, interview.

The strong implication, in support of our expectation, is that consumers' Response Levels for a brand are no more predictive of changes in subsequent usage than they are of preceding changes.

The same pattern is found to apply to the other brands and attributes of Breakfast Cereals, including a typically "descriptive" attribute such as "Helps you to Keep Fit", as illustrated in Table 11.4. (the results for all eleven individual attributes are reported in Appendix E).

Because of the small number of respondents in each Usage sub-group, in Table 11.4. we report the results for the brands which had at least 10 respondents in every group. This reduces, although it does not completely eliminate, the problem of the patterns being obscured by the small sample size for a brand in a particular usage group.

TABLE 11.4.
Response Levels - RL % by Subsequent Usage
(Selected Attribute Beliefs - Breakfast Cereals)

RL	"Tastes Nice"								"Helps you to Keep Fit"								Average 11 Attributes							
	U/U		U/NU	NU/U	NU/U	U/NU	NU/NU		U/U		U/NU	NU/U	NU/U	U/NU	NU/NU		U/U		U/NU	NU/U	NU/U	U/NU	NU/NU	
Brands by Usage	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Raisin Bran	86	89	74	62	46	42	32	32	57	51	68	31	62	37	33	38	47	50	45	37	25	28	20	22
Cheerios	72	82	50	89	39	42	30	29	41	54	25	56	28	8	8	6	63	67	49	67	31	25	19	22
K.CornFlakes	83	79	35	36	21	47	35	43	25	29	24	14	14	18	15	16	48	55	44	47	24	35	26	30
All Bran	50	45	9	50	8	18	17	18	95	95	82	100	83	82	65	66	56	57	35	56	34	28	27	30
AVERAGE	73	74	42	59	29	37	29	31	55	57	50	50	47	36	30	32	54	57	43	52	28	29	23	26

In Table 11.4. above the Response Levels corresponding to concurrent "Users" are highest, at 52%, on average, across the 4 brands and 11 attributes of Breakfast Cereals. In contrast, average RL for concurrent "Non Users" are only half the size, at 26%, on average.

Results for individual brands and attributes show some variations.

Noteworthy are the higher RL of concurrent "Users" at the second interview for Cheerios than those at the first. For example, among persistent "Users", 82% mention the attribute "Tastes Nice" for Cheerios at the second interview, compared with 72% at the first. Also, 89% of converted "Users" (NU/U) mention the attribute "Tastes Nice" for Cheerios at the second interview, compared with only 50% of lapsed "Users" (U/NU) mentioning it at the first interview. The pattern is repeated for respondents mentioning the attribute "Helps to Keep You Fit" for that brand. This is consonant with consistently higher responses on all variables for this brand at the second interview (see Chapter 8).

Also for other brands there are differences in Table 11.4. among the belief mentions of concurrent "Users" or "Non Users". Nonetheless, they are no more predictive of future than of past changes in Usage. For example, responses for Raisin Bran sometimes vary in the opposite direction than those for Cheerios (e.g. 74% for U/NU and "Taste Nice" versus 62% for NU/U).

The pattern of results replicates for the average attribute and average brand in each product field in the two countries, as summarized in Table 11.5. below.

TABLE 11.5.
Response Levels - RL % by Subsequent Usage
(Attribute Beliefs - All Product Categories)
(Average Attribute - Average Brand)

RL - US	Claimed Usage at the two Interviews							
	U/U		U/NU	NU/U	NU/U	U/NU	NU/NU	NU/NU
	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int
Products	%	%	%	%	%	%	%	%
Breakfast Cereals	54	57	43	52	28	29	23	26
Laundry Detergents	46	51	38	51	26	29	22	24
Services								
F.Food Restaurants	61	61	60	56	37	49	42	45
TV News	56	56	46	61	30	40	26	29
US AVERAGE	**54**	**56**	**47**	**55**	**30**	**37**	**28**	**31**
RL - UK	**Claimed Usage at the two Interviews**							
	U/U		U/NU	NU/U	NU/U	U/NU	NU/NU	NU/NU
	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int
Products	%	%	%	%	%	%	%	%
Breakfast Cereals	40	47	31	37	24	26	17	18
Laundry Detergents	65	61	52	47	39	30	30	15
Toothpaste	63	66	48	50	29	36	21	21
Canned Soups	53	56	40	48	29	34	19	21
C. Soft Drinks	41	41	33	40	26	26	14	14
UK AVERAGE	**49**	**53**	**38**	**44**	**27**	**31**	**18**	**19**

There is a steep gradient in the data reported in Table 11.5. from persistent "Users" to persistent "Non Users".

Response Levels - RL for persistent and for concurrent "Users" are similar, at about 50% to 55% in the US, and at 40% to 50% in the UK. At the other end of the spectrum, Response Levels for concurrent "Non Users" are about 30% to 35% in the US and 20% to 30% in the UK.

In Great Britain responses of inconsistent "Users" tend to be slightly lower than those of persistent "Users", and the same occurs for RL of NU/NU compared with those of concurrent "Non Users" who had claimed to be "Users" at the other interview.

Another sub-pattern is that, for "Switchers", responses at the second interview also tend to be a bit higher than those at the first. This is especially so in the US, where we had already noted somewhat higher responses overall at the second interview.

Nevertheless, these differences are not any more predictive of future than of past changes in claimed Usage, and the results in Table 11.5. are in line both with previous findings relating the size of Response Levels to the Usage of the brand and with our expectation that the direction of a change in claimed usage would not affect attitudinal responses.

The relationship between the above findings and the corresponding results for Repeat-Rates will be discussed in the next section.

11.3. THE RELATIONSHIP BETWEEN REPEAT-RATES - RR AND CHANGES IN USAGE.

We are now going to investigate the effect of changes in Usage claims on Repeat-Rates and the interrelations between the latter and the corresponding Response Levels - RL.

Because we wanted to bring out the effect of a change in claimed Usage, the Repeat-Rates in this Chapter are calculated in a different, more detailed, way from the Repeat-Rates in Chapters 9 and 10, which were obtained on the basis of the average number of responses at the 1st and at the 2nd interview.

First we calculated Repeat-Rates as a percentage of the Response Levels at the first interview. We called these "forward" Repeat-Rates.

The "forward" Repeat-Rates for the Breakfast Cereal Raisin Bran and the attribute "Tastes Nice" were reported in Table 11.2.: they showed a clear downward gradient in how many consumers repeated an attitudinal response about a brand by whether they claimed to be using the brand at both this and the follow up interview, or at neither. The figures dropped from 87% for persistent "Users" to 47% for those who remained "Non User" throughout the period, with the Repeat-Rates for "Switchers" in between.

However, as discussed in the previous section, Response Levels also varied in size with claimed usage, being higher when corresponding to a concurrent Usage claim. Hence *interrelations* with the *size* of the Response Levels used in the calculation of the Repeat-Rates might have affected the results in Table 11.2..

In order to differentiate between the effect of the size of the Response Level from the effect of a change in Usage claim, we compared the "forward" Repeat-Rates in Table 11.2. with the Repeat-Rates calculated on the basis of the RL at the second interview. We called these "backward" Repeat-Rates.

Results for "forward" and "backward" Repeat-Rates of the Breakfast Cereal Raisin Bran and the attribute "Tastes Nice" are reported in Table 11.6. below.

TABLE 11.6.
Repeat-Rates - RR % by Subsequent Usage
(An example)

"Tastes Nice"								
Repeat-Rates RR	Claimed Usage at the two Interviews							
	U/U		U/NU		NU/U		NU/NU	
	Forw.	Backw.	Forw.	Backw.	Forw.	Backw.	Forw.	Backw.
	%	%	%	%	%	%	%	%
Raisin Bran	87	84	*57*	100	67	*50*	47	47

The "backward" results in Table 11.6. again show a strong gradient between the Repeat-Rates for respondents who stayed "Users" and the consumers who remained "Non Users" (from 84% to 47% respectively). For both persistent "Users" and persistent "Non Users" the two ways of calculating the Repeat-Rates (i.e. "forward" or "backward") yield almost identical results. This is so also for other brands and attributes of Breakfast Cereals (see Appendix E), as well as for other product fields.

However, the figures for "Switchers" show that the "backward" Repeat-Rates vary in the opposite direction of the "forward" ones.

These differences turn out to be largely the effect of the size of the Response Level used as a base when calculating the Repeat-Rates.

Among the 13 NU/U respondents for Raisin Bran, 6 had mentioned the attribute "Tastes Nice" at the first interview (while they were "Non Users" of the brand), but 8 had said so at the second (while they were "Users"). Of these, 4 had mentioned "Tastes Nice" for Raisin Bran at both interviews. Hence to a *lower* Response Level at the first interview correspond a *higher* "forward" Repeat-Rate (4/6=67%), and vice-versa to the *higher* Response Level at the second interview for the then concurrent "Users", correspond a relatively *low* "backward" Repeat-Rate (4/8=50%)[35].

On the other hand, for respondents who did not change Usage claims between the two interviews the base did not matter because the Response Levels at the two interviews were almost equal within each group.

The effect of the size of the Response Levels on the Repeat-Rates becomes even more apparent when we re-arrange the results in Table 11.6. by the *variations* in the size of the Response Levels, rather than by the Usage claims at the two Interviews.

[35] The small number of people involved in each group may sometimes alter the results, as in the case of the "backward" U/NU Repeat-Rate of 100%.

For example, the Response Levels for the U/NU group are higher at the first interview, when corresponding to a Usage claim and lower at the second, when corresponding to a Non Usage claim (see Table 11.3.). Hence we could say that the "forward" Repeat-Rates for this group of consumers correspond to "High to Low" variations in Response Levels between interviews. The "backward" Repeat-Rates of the NU/U sub-group are also calculated on the basis of Response Levels varying from High (at the second interview) to Low (at the 1st).

Similarly, the "forward" Repeat-Rates for the NU/U sub-group and the "backward" RR for the U/NU group correspond to Low to High variations in Response Levels between interviews.

"Forward" and "backward" Repeat-Rates by variations in Response Levels are reported in Table 11.7..

TABLE 11.7.
"Forward" and "Backward" Repeat-Rates - RR % by *Variations* in Response Levels - RL
(An example)

"Tastes Nice"								
Repeat-Rates RR	**Variations in Response Levels - RL**							
	High to High		High to Low		Low to High		Low to Low	
	Forw.	Backw.	Forw.	Backw.	Forw.	Backw.	Forw.	Backw.
	%	%	%	%	%	%	%	%
Raisin Bran	87	84	57	50	67	100	47	47
Average RR	86		54		84		47	

Table 11.7. highlights that, on average, about 54% of respondents repeated the attribute "Tastes Nice" for Raisin Bran when Response Levels varied from "High to Low", either "forward" or "backward", and irrespective of the direction of the switch in Usage. Similarly, about 84% repeated "Tastes Nice" when Response Levels varied from "Low to High".

The implication of the results in Table 11.7. is that the dominant factor for the difference in the Repeat-Rates of "Switchers" is the differing size of the Response Levels used as a base for calculating the "forward" and "backward" Repeat-Rates, rather than the *number* giving the same response, which does not change much with the direction of the switch in Usage.

Because of the differing sample sizes in the various groups (e.g. 13 respondents had claimed to be "Non Users" of Raisin Bran at the first interview and "Users" at the second, while 19 had claimed the reverse), we could not prove our assertion directly.

However, further proof was sought by comparing the so called "*Notional Numbers*" of Repeat Respondents.

In practice the "Notional Numbers" correspond to the number of Repeat Respondents for every 100 people and were calculated by multiplying the Repeat-Rates in Table 11.7. by the Response Levels used as a base (see Table 11.3.) and then diving the result by 100. For example, the "High to Low" "Notional Number" of 42 in Table 11.8. below was obtained by multiplying the 57% "High to Low" Repeat-Rate in Table 11.7. by the 74% U/NU Response Level at the first interview in Table 11.3., and then diving the result by 100.

TABLE 11.8.
"Notional Numbers" of Repeat Respondents by *Variations* in Response Levels - RL
(An example)

"Tastes Nice"								
"Notional Numbers"	Variations in Response Levels							
	High to High		High to Low		Low to High		Low to Low	
	1st Int.	2nd Int.	1st Int.	2nd Int.	1st Int.	2nd Int.	1st Int.	2nd Int.
Raisin Bran	75	75	42	31	31	42	15	15
Average	75		37				15	

The results reported in Table 11.8. highlight that the "Notional Number" of repeat respondents is highest for persistent "Users" (75) and lowest for consistent "Non Users" (15). In our example there is a small degree of variation among the "Notional Numbers" of "Switchers" (31 to 42), but not nearly as much as the variation between persistent "Users" and persistent "Non Users". Furthermore we could not identify any logical (or even potentially causative) reason for any of the differences among switchers in the "notional numbers" of repeaters. As a matter of fact one might expect variations in the opposite direction if there was any causation involved.

The implication is that neither the direction of the switch from claimed Usage to Non Usage, nor the corresponding variations in Response Levels (from High to Low and vice-versa) (greatly) affect the number giving a response at both interviews.

Replications for other brands and attributes show analogous patterns, with some deviations, but a similar number of "Switchers" giving a response at the two interviews,

irrespective of the direction of the change in Usage claims. Most importantly, the number of "Switchers" do not show any consistent pattern of variation nor do they vary nearly as much for the H/L or L/H than for the H/H versus L/L groups.

For example, the "Notional Number" of "Switchers" mentioning the attribute "Tastes Nice" for the average brand of Breakfast Cereals is about 23 irrespective of the direction of the switch, compared with 58 for persistent "Users" and 15 for persistent "Non Users" (see Appendix E, Tables E9 to E12).

Many of the oscillations arising from particular brand/attribute combinations is smoothed out by averaging across brands and attributes, as shown in Table 11.9. for all products in the US and the UK.

The data reported in Tables 11.9. highlight the relationship between the Usage claims at the two interviews and the Repeat-Rates, and also the interrelations with the Response Levels.

To steady "Users" correspond the highest (notional) number of repeaters (e.g. about 40, on average, in the US) and the highest Response Levels - RL (see Table 11.5.), while to persistent "Non Users" correspond both the lowest (notional) number (about 15 in the US) and the lowest Response Levels - RL. Hence Repeat-Rates for steady "Users" are also highest, and those for persistent "Non Users" are lowest, as per the well known Double Jeopardy pattern. This occurs for Repeat-Rates calculated both "forward" and "backward".

For "switchers" the (notional) number of repeaters is not greatly affected either by the direction of the switch in usage (i.e. from "Users" to "Non User" or vice-versa) or by the direction of variations in the Response Levels (i.e. from "High to Low" or "Low to High"). For example, the (notional) number of repeaters for "switchers" is about 22, on average, in the US and about 15 in the UK. However, there is an interrelation with the size of the Response Level used as a base in the calculation of the Repeat-Rates. Therefore the Repeat-Rates corresponding to High to Low variations in Response Levels are lower than the Low to High RR, since they are calculated on the basis of a higher Response Level.

The oscillations still present in the data summarised in Table 11.9. are partly due to the already noted (see Chapter 9) small differences in the responses at the two interviews: in the UK where the data is even more stable the results are more steady.

However, the figures in Tables 11.5. and 11.9. all tell pretty much the same story, i.e. that neither changes in Response Levels, nor changes in Repeat-Rates, are more predictive of subsequent than of preceding changes in Usage claims.

TABLE 11.9.
Repeat-Rates - RR % by *Variations* in Response Levels - RL
(Attribute Beliefs - All product categories)
(Average Attribute - Average Brand)

	REPEAT-RATES - RR									"NOTIONAL NUMBERS"							
		H/H		H/L		L/H		L/L			H/H		H/L		L/H		L/L	
		Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw		1st Int.	2nd Int.	1st Int.	2nd Int.	1st Int.	2nd Int.	1st Int.	2nd Int.
US	Products	%	%	%	%	%	%	%	%	Products								
	Break. Cereals	67	63	32	36	69	46	45	39	Break.Cereals	42	42	17	22	22	18	12	12
	Laundry Det.	67	59	48	32	56	55	44	39	Laundry Det.	33	33	17	18	18	17	10	10
	Services									Services								
	F. Food Rest.	76	68	59	40	61	69	61	57	F. Food Rest.	46	41	35	22	22	34	26	26
	TV News	67	65	53	33	67	60	52	47	TV News	37	36	24	20	20	24	13	14
	AVERAGE	69	64	48	35	63	58	50	45	**AVERAGE**	39	38	**23**	**21**	**21**	**23**	15	15
		H/H		H/L		L/H		L/L			H/H		H/L		L/H		L/L	
		Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw		1st Int.	2nd Int.	1st Int.	2nd Int.	1st Int.	2nd Int.	1st Int.	2nd Int.
UK	Products	%	%	%	%	%	%	%	%	Products								
	Break. Cereals	61	52	37	34	49	43	38	55	Break. Cereals	24	24	11	12	12	11	6	4
	Laundry Det.	69	70	34	43	51	54	37	46	Laundry Det.	45	43	18	20	20	16	11	7
	Toothpaste	75	72	47	36	59	57	45	43	Toothpaste	47	47	22	18	17	20	9	9
	Canned Soups	60	58	36	35	49	42	40	42	Canned Soups	32	32	14	17	14	14	8	9
	C.SoftDrinks	51	47	34	33	46	44	38	37	C.SoftDrinks	21	19	11	13	12	11	5	5
	AVERAGE	64	60	38	36	51	48	40	45	**AVERAGE**	34	33	**15**	**14**	**15**	**16**	8	7

The results of an Analysis of Variance (ANOVA) undertaken on the Attribute Beliefs results for Breakfast Cereals in the US confirm the main patterns illustrated here, as discussed in Appendix F.

In the meantime, in the next section we report the equivalent results for Likelihood to Buy and Advertising Recall.

11.4. THE RELATIONSHIP BETWEEN LIKELIHOOD TO BUY AND ADVERTISING RECALL AND CHANGES IN USAGE.

The same patterns as for Attribute Beliefs are found to occur for Likelihood to Buy and Advertising Recall, as reported in Tables 11.10. and 11.11. for all product fields in the US (the UK results being incomplete), and for those brands with more than ten respondents in each Usage group.

TABLE 11.10.
Likelihood to Buy - LB and Advertising Recall - AR % by Subsequent Usage
(All product categories in the US - Average Brand)

LIKELIHOOD TO BUY RESPONSES								
	U/U		U/NU	NU/U	NU/U	U/NU	NU/NU	
	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int
Products	%	%	%	%	%	%	%	%
Breakfast Cereals	90	99	81	95	15	28	13	18
Laundry Detergents	83	96	64	87	15	22	9	10
Services								
F.Food Restaurants	92	95	79	94	32	38	24	25
TV News	83	87	72	84	9	14	3	5
AVERAGE	87	94	74	90	18	25	12	14
ADVERTISING RECALL RESPONSES								
	U/U		U/NU	NU/U	NU/U	U/NU	NU/NU	
	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int
Products	%	%	%	%	%	%	%	%
Breakfast Cereals	43	43	48	47	23	39	24	26
Laundry Detergents	52	53	49	55	48	32	35	39
Services								
F.Food Restaurants	60	62	68	63	56	54	43	43
TV News	52	60	48	57	34	30	28	17
AVERAGE	52	54	53	55	40	39	32	31

For Likelihood to Buy there is a steep gradient between the responses corresponding to a concurrent Usage claim and those corresponding to a concomitant Non Usage claim.

At the first interview the Likelihood to Buy responses for steady "Users" are on average (across products) 87% and they are 74% for the concurrent "Users" who subsequently became

"Non Users". At the second interview the responses are even closer, at 94% for U/U and 90% for NU/U. Responses for concurrent "Non Users" are on average about 17%, but they are always a bit lower for persistent "Non Users".

As discussed in Chapter 9, the figures at the second interview have been found throughout the data, and especially for Likelihood to Buy, to be a bit higher than the corresponding results at the first interview. This is also apparent from the data reported here.

The results in Table 11.10. are consistent with our expectations concerning a concurrent relationship between Responses and Usage, and are in open contrast with the literature (discussed in Chapter 6) which had sought (mainly unsuccessfully) to establish a predictive relationship between Intentions to Buy and subsequent Usage. Our results here indicate that Likelihood to Buy responses are no more predictive of subsequent than they are of previous changes in Usage.

Results for Advertising Recall are also consistent with our expectation, with responses of concurrent "Users" about 50% on average, versus responses of concurrent "Non Users" of about 35%. These results are also consistent with the stream of literature (see Chapter 6) which postulates that advertising would be noticed more by the buyers than by the non-buyers of the brand, because of the attempt to reduce cognitive dissonance (e.g. Mills et al., 1959; Adams, 1961). However, the gradient is not very steep.

Finally, in Table 11.11. below we report the results for Repeat-Rates and the corresponding "Notional Numbers".

On average about 20 "Switchers" express their Likelihood to Buy the average brand across products, versus 62 persistent "Users" and 6 consistent "Non Users". Lower Repeat-Rates for H/L than for L/H variations in Response Levels derive from the higher Likelihood to Buy responses used as a denominator in the calculation.

The gradient for Advertising Recall is less steep, but pattern is the same.

TABLE 11.11.
Likelihood to Buy and Advertising Recall by Subsequent Usage
Repeat-Rates - RR and "Notional Numbers"
(All product categories in the US)
(Average Brand)

LIKELIHOOD TO BUY REPEAT-RATES - RR									LIKELIHOOD TO BUY "NOTIONAL NUMBERS"							
	H/H		H/L		L/H		L/L		H/H		H/L		L/H		L/L	
	Forw.	Backw.	Forw.	Backw.	Forw.	Backw.	Forw.	Backw.	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int
Products	%	%	%	%	%	%	%	%								
Breakfast Cereals	99	90	31	16	100	91	48	34	89	89	25	15	15	25	6	6
Laundry Detergents	97	84	31	17	100	95	29	28	80	81	20	15	15	21	3	3
Services																
F.Food Restaurants	96	93	43	34	100	89	57	55	88	88	34	32	32	34	14	14
TV News	93	88	31	15	100	76	50	50	77	77	22	13	9	11	1	2
AVERAGE	96	89	34	20	100	88	46	42	62	62	25	19	18	23	6	6
ADVERTISING RECALL REPEAT RATES - RR									**ADVERTISING RECALL "NOTIONAL NUMBERS"**							
	H/H		H/L		L/H		L/L		H/H		H/L		L/H		L/L	
	Forw.	Backw.	Forw.	Backw.	Forw.	Backw.	Forw.	Backw.	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int
Products	%	%	%	%	%	%	%	%								
Breakfast Cereals	57	57	60	31	43	72	37	36	27	27	28	15	15	28	9	9
Laundry Detergents	67	65	41	54	62	57	56	50	35	34	20	30	30	18	20	20
Services																
F.Food Restaurants	68	67	57	65	71	71	56	57	41	41	39	41	40	38	24	24
TV News	70	60	41	44	74	67	27	54	36	36	20	25	25	20	8	9
AVERAGE	65	62	50	49	62	67	44	49	28	28	27	24	24	26	16	16

11.5. SUMMARY REMARKS

In this Chapter we have analyzed results about attitudinal responses at two points in time, their Repeat-Rates, and some of the changes between them.

We have found aggregate Responses to vary with the Usage at the time of the interview: hence the size of the Response was no more predictive of future than of past changes in buying.

In Chapter 9 we had found Repeat-Rates of individual respondents to be on average 50% from one interview to the next and to be related to the size of the initial responses (Double Jeopardy). Here Repeat-Rates have been found to vary also with the Usage claimed at different times: more heavier buyers of a brand repeat their attitude responses than lighter buyers. For example, as many as 87% of steady "Users" repeat their mention of the attribute "Tastes Nice" for the Cereal brand Raisin Bran, while only about 47% of persistent "Non Users" do so.

Repeat-Rates when respondents switch from being "User" to "Non User" seemed to differ from those that occur when switching from "Non User" to "User". But the explanation was that it is the Response Levels at the time of the two interviews which differ, rather than the number giving the same response.

Our conclusion is therefore that neither changes in Response Levels nor changes in Repeat-Rates can be predictive of changes in usage.

Again there would appear to be no erosion or loss of brand-loyalty from one interview to the next, contrary to a "leaky bucket" interpretation.

Rather the results in this Chapter are consistent with the "zero-order stochastic" interpretation of Repeat-Rates proposed in Chapter 9, as we will discuss in detail in the next Chapter.

Different replications all showed much the same pattern across attributes, variables and products in each country (in total about 36,000 Repeat-Rates were calculated: "forward" and "backward" for each brand, each attribute, each variable, each usage group, and each time-gap between interviews, in every product category in the two countries).

A formal Analysis of Variance (reported in Appendix F) on Breakfast Cereals in the US also confirms the patterns just described.

CHAPTER 12: CONCLUSIONS

12.1. Summary of Results

12.2. Discussion

12. CONCLUSIONS

The main thrust of this thesis has been to investigate the relationship between attitudinal measures and (reported) purchase behaviour, both at the cross-sectional and at the longitudinal level.

Consumer Behaviour researchers have frequently drawn upon general theories of attitude formation and change developed in psychology or in sociology (see Chapters 3 and 4) in their attempt to describe and explain the process of consumer choice. However, such theories have often been too complex to be directly applicable to routine brand choice.

Moreover, many of the models of Buying and of Consumer Behaviour described in Chapter 5 have either failed to distinguish between steady state and change, or have assumed a dynamic situation, whereby any change in attitude was supposed to be indicative of a forthcoming irreversible change in behaviour.

The relationship of attitudes with repeat- and multi-brand buying in a steady-state environment so often forgotten in previous research has instead been the emphasis in our work here.

In this final Chapter we will first summarize our results (Section 12.1.) and then we will discuss them (Section 12.2.).

12.1. SUMMARY OF RESULTS

Because of the emphasis (in our work as well as in most Consumer Behaviour research) on the relationship between attitudes and behaviour, we first dealt with issues concerned with the validity of our *reported* Buying Behaviour measure. In particular, we showed that well-established patterns concerning *recorded* purchase behaviour (e.g. Ehrenberg, 1972 and 1988) also applied to our *reported* Buying Behaviour data here (see Chapter 8).

For example, we found consistent evidence, across the four product fields (which included two services), of regular multi-brand buying patterns, and of the applicability of the Duplication Law (e.g. Ehrenberg, 1972 and 1988). Hence, in our data as well, and apart from some noticeable clusters of brands, switching from one brand to another was found to be common practice and to be determined not so much by the characteristics of the brands themselves, but by their relative size.

The size of the brand also appeared as the dominant factor regulating the relationship between our attitudinal and behavioural measures at the cross-sectional level. For instance, stated Purchase Intentions, Advertising Recall and Attribute Beliefs appeared to be strictly related to the current and past claimed usage of the brand, with higher responses for the brands more frequently used.

A Double Jeopardy trend (see also Chapters 4, 5 and 6) generally occurred between attitudinal measures amongst "Users" and Usage, except for some instances of unusually strong sub-clusterings of brands (e.g. among the brands of Breakfast Cereals examined here).

For Attribute Beliefs, a recurrent exception to the relationship between the level of attitudinal responses and the size of the brand (including the Double Jeopardy trend) was confirmed for the so-called "mainly Descriptive" attributes (e.g. Barwise and Ehrenberg, 1985) which are strongly associated, through advertising and/or obvious physical characteristics, with specific features of the brand itself (e.g. that the Breakfast Cereal All Bran can "Help You to Keep Fit").

These "descriptive" exceptions are themselves consistently predictable across different data sets and manifest themselves with very high attribute mention percentages for some brands (no matter what their Usage is) and very low for other (even large) brands.

However, consistently with previous research (e.g. Barwise and Ehrenberg, 1985), the majority of attributes were found to be closely related to Usage and hence to be "evaluative" of characteristics common to the product category as a whole.

Operational ways of distinguishing "mainly descriptive" from "mainly evaluative" attributes were discussed in Chapters 8 and 9.

These findings have managerial relevance since they offer guide-lines to managers for the interpretation of attitudinal results, e.g. that Purchase Intentions and Attribute Beliefs reflect current and past usage, rather than future usage changes, and that it would be unrealistic (except for a "descriptive" attribute) to expect a small, established brand to achieve attitudinal responses higher than a larger brand.

Since in our data the same group of American consumers was interviewed twice, at the longitudinal level we could compare the consistency of responses over time both in the aggregate and for the individual respondent (see Chapter 9).

First we compared the aggregate Response Levels (RL) at the two interviews, i.e. the overall percentages giving an answer at the first and at the second interview. These remained fairly stable in the eighteen months elapsed between the two interviews, although most measures showed higher Response Levels at the second interview (as much as up to 10 percentage points, on average, for Intentions to Buy in the case of Laundry Detergents).

While conditioning did not seem to be a factor in the consistently somewhat higher responses at the second interview, we conjectured that some kind of "learning" might, for example, have occurred in the administration of our questionnaire the second time. As a matter of fact, the same kind of analysis on an comparable data set in the UK had yielded more stable aggregate results at subsequent interviews.

As already remarked in Chapter 9, though noteworthy, these differences in our aggregate results should be put in the context of much larger dissimilarities between interviews in individual claims - the so-called Repeat-Rates (RR). Specifically we found that, on average, only about 50% of individual respondents gave the same answer at the two interviews, in spite of the much smaller differences in aggregate Response Levels.

Findings of steady aggregate responses, but highly variable individual ones were not new (e.g. see Achenbaum, 1972; Biel, 1070; Channon and Bullen, 1975; etc.) and were consistent with the difficulties found by previous research in predicting single instances of behaviour from attitudes. However, the explanation of such occurrence had been controversial, ranging from "erosion" to a general "volatility" of attitudinal responses at the individual level.

One of the contributions of our thesis was to find a more satisfactory explanation for the phenomenon.

We did so in terms of stochastic, but stationary individual propensities to give a particular attitudinal response, in line with the already known pattern and theory of varying individual

purchase frequencies and fluctuating brand purchases which underlie stable overall brand share levels (e.g. Ehrenberg, 1972 and 1988), as we discuss more fully in the next section.

Empirical support for this explanation was found by comparing the Repeat-Rates for matched split-samples that were re-interviewed (in the UK) after 1, 3, 6, and 12 months. Except for a small drop after one month, the results across all product fields and variables showed remarkably similar Repeat-Rates for periods of different length, with no consistent sign of "erosion" or "learning".

However, within each variable, Repeat-Rates were found to vary by brand in a way strongly correlated with the *size* of the Response Level, as per the well-known Double Jeopardy pattern. Hence we found that, for all variables, the higher the Response Level (RL), the higher the Repeat-Rate (RR).

Since, by and large, higher Response Levels corresponded to larger brands (see above), Repeat-Rates turned out to be also indirectly correlated with the size of the brand. "Mainly Descriptive" attributes were the exception here: although the relationship between RR and RL still held strongly, RR showed low or even negative correlation with the size of the brand.

We also found weak evidence of a "Triple" Jeopardy effect, whereby amongst the "Users" of each brand both RLs and RRs were at times somewhat lower for smaller brands.

For all variables the relationship between RR and RL was found to be mainly linear, but with slight curvatures at the top and at the bottom ends of the scale (see Chapter 10). A simple, summary relationship between RR and RL in the form of: RR = RL + C was found to hold well for all variables, where the parameter C might vary from case to case, but was more or less of the same size for different product categories in the same country. For example, for Attribute Beliefs the parameter was found to be on average 16 in the US and 27 in the UK.

Finally, the results in Chapter 11, where we examined the relationship between changes in usage and attitudinal responses, confirmed the correlation between the latter and current usage claims discuss in Chapter 9. Specifically, attitudinal responses were found to be no more predictive of future than of past usage changes, but to be determined by the purchase frequency at the time of the response.

Similarly, the size of Repeat-Rates (RR) corresponding to usage changes were found to be determined by the size of the Response Levels (RL) used as a base, rather than by the direction of the change in usage.

Our conclusion was therefore that neither changes in Response Levels nor changes in Repeat-Rates could be predictive of changes in usage, and there were no signs of erosion or loss of brand loyalty from one interview to the next.

As remarked in Chapter 11, these results are consistent with the "zero-order stochastic" interpretation of Repeat-Rates given earlier.

We discuss this interpretation in the next section.

12.2. DISCUSSION

The "zero-order stochastic" notion seems to be crucial for the interpretation of our attitudinal results, hence we discuss it in depth here.

Since this notion was first developed for and successfully applied to buying behaviour, we first illustrate it in that context, and then in the context of attitudinal responses.

A) Buying Behaviour.

As a reminder, zero-order means that, in stationary markets, a purchase of Brand A is not influenced by any previously made purchases of the same or of any other brand (e.g. there is no "learning" or "purchase feedback"). Consumers are heterogeneous in their individual purchase probabilities of a brand, and, in stationary markets, such individual purchase probabilities are also stationary (e.g. Ehrenberg, 1972, 1988). However, the precise incidence of purchase of a particular brand is unpredictable and, in this respect, it appears "as if random" (Bass, 1974; Ehrenberg, 1972, 1988).

Hence we say that buying behaviour is "zero-order stochastic", or probabilistic.

Whilst the assumption of "zero-order stochastic" buying behaviour does not deny the existence of specific reasons for the purchase of brand A rather than brand B at a given purchase occasion, stochastic models of buying behaviour do not explicitly measure the many potential reasons for choosing a brand.

These reasons might range from having seen the brand advertised on TV the night before, having heard from a neighbour about it, or the usual brand being out of stock, etc. Therefore "stochastic" should not be equated to rolling a "personal portfolio die", since there are underlying reasons for a purchase of each brand at any given time. However, such reasons are themselves so varied and their occurrence so unpredictable, to make the purchase of each brand appear "as if random", at least as a first-approximation modelling assumption.

As a consequence, deterministic models of buying behaviour have often failed to explain a substantial part of the variance in actual purchases, as remarked by Bass (1974).

On the other hand, stochastic models such as the Dirichlet (see Ehrenberg, 1988) have being successful in predicting systematic patterns of buying behaviour without specific allowance for the reasons behind choice.

Although potentially important to brand management, such reasons are best studied alongside to, but separate from, models of purchase incidence or of brand choice.

B) Attitudinal Responses.

The results of our work here seem to imply that the stochastic process just described for purchase incidence and brand choice also influences the incidence of mentioning a brand in connection with one or more Attribute Beliefs[36].

We consider first those (so called) "evaluative" beliefs such as "Taste Nice" which are more closely related to the frequency and recency of buying the brand. A consumer who buys brand A frequently will be more likely to: a) associate that brand to any salient belief(s) (one or n), since it is the brand most frequently chosen and probably also the most recently bought and consumed and hence the most prominent in the respondent's mind; and b) mention that brand again in association with the same Belief(s) at a repeat interview (again for similar sorts of reasons). On the other hand, a consumer who only occasionally buys brand A and has not done so for a while, will be less likely, especially in a free-choice context like ours, to mention it in relation to any belief(s) since in the meantime he will have bought and consumed some other brand(s) whose characteristics are more salient in his memory at that time.

The zero-order stochastic process for the mention of this first type of beliefs is thus derived from the zero-order stochastic process described above for buying behaviour.

This process is not only plausible and logical, but there are plenty of possible explanation in Consumer Behaviour theory (or social psychology) to justify the relationship between the incidence of mentioning a belief about a brand and its buying frequency or recency. They are, for example: the self-description of one's behaviour (see Bem, 1968), the attempt to reduce Cognitive Dissonance, and the various theories which link familiarity with liking (e.g. Zajonc, 1968).

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[36] Although the discussion that follows is in terms of Attribute Beliefs, the same patterns apply to other attitudinal measures, such as Intentions to Buy and Advertising Recall.

Let's consider now those beliefs, such as "Helps you to Keep Fit", which are not closely related to the buying frequency of a particular brand: the gradient between different Usage groups is not as steep as for "Tastes Nice" (e.g. see Table 11.4. in Chapter 11), and the incidence of mentioning is presumably regulated by the random exposure to a strong advertising message or having been reminded about a specific characteristic of that brand by seeing it on the supermarket shelf (e.g. that All Bran must "Help you to Keep Fit"), plus perhaps having bought the brand recently.

However, despite "as if random" incidence of mentioning a brand for a given attribute, for "mainly descriptive" as well as for "mainly evaluative" attributes, the rates of mentioning a belief are, as already remarked earlier, stationary over time. This was illustrated in Chapter 9 by pretty much equal Repeat-Rates in the UK for time-lags ranging from 3 to 12 months and is consistent with what is found to happen in purchase behaviour, whereby individual purchase probabilities are stable over time, but the incidence of purchase is so irregular that it can be considered "as if random".

Here is where the Double Jeopardy effect between the size of the mention and the repeat incidence of mention takes place. The less any specific brand/attribute combination is prominent or salient in a consumer's mind either because of the low frequency of buying and using the brand, or because of lack of any specific feature associated with the brand, the less likely is the consumer to repeat that brand/belief combination over time.

As a statistical selection process (see Chapters 4, 6, and 8), size effects of a Double Jeopardy kind are made more obvious by the free-choice questioning employed in our survey, compared with ranking and scaling (i.e. Barnard and Ehrenberg, 1990). However, the consistency with which the Double Jeopardy phenomenon occurs across different data sets and variables is a powerful sign that the effect is "real" and valid. Moreover there is theory (see Chapter 4) to show that such statistical selection must happen under certain quite "reasonable" assumptions.

Our work here not only has extended and generalized previous findings on attitudinal responses (e.g. Barwise and Ehrenberg, 1985), but has also contributed additional knowledge especially in terms of explaining individual variations in attitudinal and behavioural responses over time.

In particular, the finding that the size of the brand, rather than the characteristic of the brand itself, is the dominant factor affecting the size of attitudinal responses and of their Repeat-Rates offers a bench-mark to both academic and commercial researchers for interpreting results of this kind.

PART IV: APPENDIXES

Appendix A: **THE QUESTIONNAIRE**

Appendix B: **BRAND DUPLICATION OF CLAIMED PURCHASE TABLES**

Appendix C: **EVALUATIVE AND DESCRIPTIVE BELIEFS**

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APPENDIX A

THE QUESTIONNAIRE

This Appendix presents the Questionnaire used in collecting the data.

Exactly the same questionnaire was employed on the same group of consumers at two interviews, the first in June 1986 and the second eighteen months later (see Chapter 7 for more details).

SPRING 1986 ATTITUDE STUDY

Interviewer _____ CODE _____

Date _____

Good morning/afternoon. My name is _____ and I am a student at the University of Georgia. We are taking a survey and I wonder if it will be all right for me to ask you a few questions.

SHOW CARD A

First, are there any products/services on this card which you never buy or use nowadays? CHECK

_____ Laundry Detergents

_____ Breakfast Cereals

_____ Fast food restaurants

_____ Television News Programs

→ GO TO MAIN QUESTIONNAIRE SECTIONS.

At end ask

1. Under which of the following age groups would you fall?

Under 25	_____
25 - 34	_____
35 - 44	_____
45 - 59	_____
over 59	_____
no answer	_____

2. Including yourself and any infants, how many people are presently living in your household? _____

Of these, how many are:

under 1 year	_____
1-4 years old	_____
5-9 years old	_____
10-15 years old	_____
16-18 years old	_____
19 and over	_____
	_____

3. Could I get your full name and address?

Name _____ Telephone Number _____

Address _____

_____

NOW SAY: Thank you very much! (You have been most helpful). At some time in the future we may wish to get in touch with you again to ask some more questions in connection with another survey. Would you be willing to cooperate with us in a future survey? YES _____ NO _____ Other _____

[If necessary explain that we have no special survey in mind. It's just to make sure we don't bother them if they would rather not cooperate in the future.]

Q1. When did you last buy laundry detergents?

_1_ In the last 7 days
_2_ 8-14 days ago
_3_ About 3-4 weeks ago
_4_ About 2 or 3 months ago
_5_ About 6 months ago
_6_ About a year ago
_7_ More than a year ago
_8_ Don't know

SHOW CARD B

Q2. And from this card, about how often do you buy laundry detergents?

_1_ Once a week or more often
_2_ About every other week
_3_ About once a month
_4_ About once every 3 months
_5_ About once every 6 months
_6_ Only about once a year
_7_ Less than once a year
_8_ I don't know

SHOW CARD L

Q3. Which of the brands on this card have you ever bought? CODE BELOW

SHOW CARD L

Q4. And which of the brands on this card are you likely to buy in the future? CODE BELOW

For each brand ever bought at Q.3. ask Q5.

SHOW CARD B

Q5. And from this card about how often do you buy...nowadays? Code below

_1_ Once a week or more often
_2_ About every other week
_3_ About once a month
_4_ About once every 3 months
_5_ About once every 6 months
_6_ Only about once a year
_7_ Less than once a year
_9_ Don't know

	Q3. Ever Bought	Q4. Likely to Buy	Q5. How Often Buy Now
Bold 3			
Cheer			
Cold Power			
Duz			
Era			
Gain			
Oxydol			
Tide			
Wisk			
Woolite			
All (1)			
None (2)			
Don't Know (3)			

Q6. SHOW CARD L

Here is a list of brands of laundry detergents. Some you may have tried, others you may have heard about. Either way, I'd like to get your impressions of them. I'm going to read out a number of statements and for each one I'd like you to tell me which brand it applies to. You can mention as many or as few brands as you like for each statement. So, which of the brands on this list do you think would...

	Bold 3	Cheer	Cold Power	Duz	Era	Gain	Oxydol	Tide	Wisk	Woolite	All (1)	None (2)	Don't Know (3)
-get stains out? Any others? Twice													
-make your clothes smell fresh and clean? Any others?													
-be reasonably priced? Any others?													
-get things white?													
-be good for the big family wash?													
-be good for soaking?													
-be gentle to clothes?													
-make clothes soft?													
-be good in cold water?													
-be good for all fabrics?													
-be good value for the money?													
-which brands can you remember seeing advertising for on TV in the last 3 months													

Q1. When did you last buy breakfast cereals?

_1_ In the last 7 days
_2_ 8-14 days ago
_3_ About 3-4 weeks ago
_4_ About 2 or 3 months ago
_5_ About 6 months ago
_6_ About a year ago
_7_ More than a year ago
_8_ Don't know

SHOW CARD B

Q2. And from this card, about how often do you buy breakfast cereals?

_1_ Once a week or more often
_2_ About every other week
_3_ About once a month
_4_ About once every 3 months
_5_ About once every 6 months
_6_ Only about once a year
_7_ Less than once a year
_8_ I don't know

SHOW CARD C

Q3. Which of the brands on this card have you ever bought? CODE BELOW

SHOW CARD C

Q4. And which of the brands on this card are you likely to buy in the future? CODE BELOW

For each brand ever bought at Q.3. ask Q.5.

SHOW CARD B

Q5. And from this card about how often do you buy...nowadays? CODE BELOW

_1_ Once a week or more often
_2_ About every other week
_3_ About once a month
_4_ About once every 3 months
_5_ About once every 6 months
_6_ Only about once a year
_7_ Less than once a year
_8_ Don't know

	Q3. Ever Bought	Q4. Likely to Buy	Q5. How Often Buy Now
All-Bran			
Boo Beery			
Cheerios			
Coca Puffs			
Chrispy Wheats'n Raisins			
Fruit Loops			
Honey Nut Cheerios			
Kellogg's Corn Flakes			
Kellogg's Raisin Bran			
Kellogg's Sugar Frosted Flakes			
Rice Chex			
All (1)			
None (2)			
Don't Know (3)			

Q6. SHOW CARD C

Here is a list of brands of breakfast cereals. Some you may have tried, others you may have heard about. Either way, I'd like to get your impressions of them. I'm going to read out a number of statements and for each one I'd like you to tell me which brand it applies to. You can mention as many or as few brands as you like for each statement. So, which of the brands on this list do you think would...

	All-Bran	Bos Berry	Cheerios	Coca Puffs	Crispy Wheat 'n' Raisins	Fruit Loops	Honey Nut Cheerios	K. Corn Flakes	K. Raisin Bran	K. Sugar Frosted Flakes	Rice Chex	All (1)	None (2)	Don't Know (3)
-taste nice? Any others? Twice														
-be reasonably priced? Any others?														
-be popular with the whole family? Any others?														
-be nourishing?														
-be fun for children to eat?														
-be the sort of cereal you keep coming back to?														
-be good value for the money?														
-be low in sugar?														
-have a very natural flavor?														
-stay very crispy in milk?														
-help you to keep fit?														
-which brands can you remember seeing advertising for on TV in the last 3 months?														

Q1. When did you last make a purchase at a fast food restaurant?

_1_ In the last 7 days
_2_ 8-14 days ago
_3_ About 3-4 weeks ago
_4_ About 2 or 3 months ago
_5_ About 6 months ago
_6_ About a year ago
_7_ More than a year ago
_8_ Don't know

SHOW CARD B

Q2. And from this card, about how often do you make purchases at a fast food restaurant?

_1_ Once a week or more often
_2_ About every other week
_3_ About once a month
_4_ About once every 3 months
_5_ About once every 6 months
_6_ Only about once a year
_7_ Less than once a year
_8_ I don't know

SHOW CARD F

Q3. Which of the restaurants on this card have you ever made a purchase at? CODE BELOW

SHOW CARD F

Q4. And which of the restaurants on this card are you likely to make a purchase at in the future? CODE BELOW

For each restaurant ever visited at Q.3. ask Q.5.

SHOW CARD B

Q5. And from this card about how often do you make a purchase at...nowadays? CODE BELOW

_1_ Once a week or more often
_2_ About every other week
_3_ About once a month
_4_ About once every 3 months
_5_ About once every 6 months
_6_ Only about once a year
_7_ Less than once a year
_8_ Don't know

	Q3. Ever Purchased at	Q4. Likely to Purchase at	Q5. How Often Purchased at
Burger King			
Dairy Queen			
O-Lites			
Hardees			
Krystal			
McDonalds			
The Varsity of Athens			
Wendy's			
Others			
All (1)			
None (2)			
Don't Know (3)			

Q6. SHOW CARD F

Here is a list of several fast food restaurants. Some you may have tried, others you may have heard about. Either way, I'd like to get your impressions of them. I'm going to read out a number of statements and for each one I'd like you to tell me which restaurant it applies to. You can mention as many or as few restaurants as you like for each statement. So, which of the fast food restaurants on this list do you think would...

	Burger King	Dairy Queen	D-Lites	Hardees	Krystal	McDonalds	Varsity	Wendy's	All (1)	None (2)	Don't Know (3)
-have quick service? Any others? Twice											
-have nutritious food? Any others?											
-be open at convenient times? Any others?											
-offer a wide menu variety?											
-be good value for the money?											
-have consistent quality?											
-happily make your order to your own specifications?											
-have good tasting food?											
-have friendly people working there?											
-use fresh ingredients?											
-appeal to children?											
-be good for the whole family?											
-which restaurants can you remember seeing advertisng for on TV in the last 3 months?											

Q1. When did you last watch a TV news program?

_1_ In the last 7 days
_2_ 8-14 days ago
_3_ About 3-4 weeks ago
_4_ About 2 or 3 months ago
_5_ About 6 months ago
_6_ About a year ago
_7_ More than a year ago
_8_ Don't know

SHOW CARD B

Q2. And from this card, about how often do you watch TV News Programs?

_1_ Once a week or more often
_2_ About every other week
_3_ About once a month
_4_ About once every 3 months
_5_ About once every 6 months
_6_ Only about once a year
_7_ Less than once a year
_8_ I don't know

SHOW CARD T

Q3. Which of the programs on this card have you ever watched? CODE BELOW

SHOW CARD T

Q4. And which of the programs on this card are you likely to watch in the future?

For each program ever watched at Q.3. ask Q.5.

SHOW CARD B

Q5. And from this card about how often do you watch...nowadays? Code below

_1_ Once a week or more often
_2_ About every other week
_3_ About once a month
_4_ About once every 3 months
_5_ About once every 6 months
_6_ Only about once a year
_7_ Less than once a year
_8_ Don't know

	Q3. Ever Watched	Q4. Likely to Watch	Q5. How Often Watch Now
Channel 2 Action News TV 5 Eye-Witness News 11 Alive News			
World News Tonight (ABC) CBS Evening News NBC Nightly News			
The MacNeil Lehrer News Hour 60 Minutes 20/20			
All (1) None (2) Don't Know (3)			

Q6. SHOW CARD T

Here is a list of TV News programs. Some you may have watched, others you may heard about. Either way, I'd like to get your impressions of them. I'm going read out a number of statements and for each one I'd like you to tell me which it applies to. You can mention as many or as few programs as you like for each statement. So, which of the TV News programs on this list do you think would..

	Channel 2 Action	TVS Eyewitness	11 Alive News	World News Tonight (ABC)	CBS Evening News	NBC Nightly News	MacNeil Lehrer	60 Minutes	20/20	All (1)	None (2)	Don't Know (3)
-be able to give you the fastest coverage possible? Any others? Twice												
-be unbiased and objective? Any others?												
-be informative? Any others?												
-have news anchors or hosts with pleasing personalities?												
-have indepth coverage?												
-be easy to understand and follow?												
-have very good correspondents/reporters?												
-use effective graphics and visuals?												
-follow-up on stories and events?												
-spend a long time on key stories?												
-make you think?												
-help you relax?												
-be a good investment of your time to watch?												
-which programs can you remember seeing advertising for on TV in the last 3 months												

APPENDIX B

BRAND DUPLICATION OF CLAIMED PURCHASE TABLES

In this Appendix we summarize the Brand Duplication results for all product fields, including the ones for Breakfast Cereals at the second interview which we compare to the first interview's results in Sub-section 8.1.3. (Table 8.8.).

TABLE B1
Segmentation between Breakfast Cereals Brands - 2nd Interview.

Buyers of	Who also Bought										
		Frosted Flakes	Fruit Loops		Raisin Bran	All Bran	Wheat Raisin		Cheerios	K.Corn Flakes	Nut Cheer	Rice Chex
Frosted Flakes		-	35		41	8	14		49	35	30	8
Fruit Loops		57	-		44	17	9		65	22	44	13
Average		57	35		42	13	11		57	28	37	11
D*Penetration	**2.9b**	**57**	**34**	**1.1b**	**34**	**19**	**13**	**1.5b**	**54**	**36**	**25**	**18**
Raisin Bran		26	17		-	24	26		55	48	29	19
All Bran		9	12		42	-	18		42	36	24	27
Wheat Raisin		23	9		68	27	-		77	55	55	36
Average		19	13		55	26	22		58	46	36	28
D*Penetration	**1.0b**	**20**	**12**	**1.8b**	**53**	**30**	**20**	**1.9b**	**68**	**45**	**32**	**23**
Cheerios		26	21		46	20	24		-	33	31	20
K.ComFlakes		28	11		60	26	26		49	-	21	26
Nut Cheer		33	30		52	24	36		67	30	-	18
Rice Chex		13	13		46	38	33		58	50	25	-
Average		25	19		51	27	30		58	38	26	21
D*Penetration	**1.4b**	**27**	**16**	**1.9b**	**56**	**31**	**20**	**1.6b**	**58**	**38**	**27**	**19**
Penetration (b)		20	12		30	17	11		36	24	17	12
Avg. Dupl. - D*Pen.		-1	1		2	-5	4		-2	-2	5	0
MAD		4	4		9	6	5		10	8	9	6

NOTE: For the figures at the 1st Interview see Section 8.1.3 in the main text.
Average MAD = 7
Average correlation with the penetration levels = 0.85

The Duplication coefficients reported in Tables B1 for Breakfast Cereals at the second interview match the first interview results, with a strong partitioning for the sugar coated/children brands (D=2.9 here vs. 2.3 in Table 8.8.) and very low duplication of purchase between this group and the "health" brands (D=1 here vs. .8 in Table 8.8.). The D values for more substitutable brands within each diagonal block average 2.1 here (versus 1.7 in Table 8.8.), while between differentiated brands the average D is 1.4 (versus 1.1 in Table 8.8.).

The other three product fields follow the same Duplication Law patterns, but with a smaller degree of partitioning between brands, as illustrated in detail for the data at the first interview (Tables B2 to B7) and then in summary form for both interviews (see Table B8).

TABLE B2
Brand Duplication of Claimed Purchase - Laundry Detergents - 1st Interview.

Buyers of	Who also Bought								Average
	Tide	Woolite	Cheer	Bold3	Wisk	Gain	Oxydol	Era	
Tide	-	38	31	25	25	24	10	11	23
Woolite	63	-	29	24	34	21	12	13	28
Cheer	73	42	-	46	31	35	21	10	37
Bold3	58	33	46	-	31	38	15	15	34
Wisk	60	49	32	32	-	15	11	19	31
Gain	82	52	55	55	21	-	21	24	44
Oxydol	65	47	41	41	29	41	-	18	40
Era	86	64	50	50	64	57	21	-	56
Avg. Duplication	69	47	41	39	34	33	16	16	37
1.6 * Penetration	**85**	**51**	**38**	**36**	**35**	**25**	**13**	**11**	**37**
Penetration (Table 8.2.)	54	32	24	23	22	16	8	7	23
Avg.Dupl. - 1.6*Pen.	-16	-4	3	2	-1	8	3	5	0
MAD	16	8	9	11	9	12	5	5	10

NOTE: Average correlation with the penetration levels = 0.8

For Laundry Detergents the average Duplication Coefficient of 1.6 (Table B2) yields a good fit (r=.8 with the penetration level). However, the MAD is high (+/- 10 points). This is partly because the "duplication law" overestimates the predicted values for very large brands such as Tide (see Ehrenberg, 1972, 1988), combined with a small degree of partitioning for Liquid (D=2 within this group at the first interview - see Table B3) versus Powder brands.

TABLE B3
Segmentation between Laundry Detergents Brands - 1st Interview.

Buyers of	Who also Bought		
	Woolite	Wisk	Era
Woolite	-	34	13
Wisk	49	-	19
Era	64	64	-
Average Penetration	57	49	16
2*Penetration	**64**	**44**	**14**

Equivalent results apply to the second interview, with an overall D value of 1.4 (r=.9; MAD +/- 9) and a Liquid detergents D value of 1.6 (see also Table B8).

TABLE B4
Brand Duplication of Claimed Purchase - Fast Food Chains - 1st Interview.

Buyers of	Who also Bought							Average
	McDonald	B.King	Wendy	Hardee	D.Queen	Varsity	Krystal	
McDonald	-	64	55	34	22	21	9	34
Burger King	67	-	59	35	21	23	9	36
Wendy	69	71	-	37	26	23	12	40
Hardee	76	75	66	-	29	33	18	50
Dairy Queen	69	64	64	41	-	31	15	47
Varsity	74	77	63	51	34	-	20	53
Krystal	85	85	92	77	46	54	-	73
Avg. Duplication	73	73	66	46	30	31	14	48
1.4 * Penetration	**84**	**81**	**66**	**39**	**28**	**25**	**10**	**48**
Penetration (Table 8.2.)	61	59	48	28	20	18	7	34
Avg.Dupl. - 1.4*Pen.	-11	-9	0	7	2	6	4	0
MAD	11	10	9	11	7	8	5	9

NOTE: Average correlation with the penetration levels = 0.9

For Fast Food Restaurants the average D values at the two interviews are very close (i.e. 1.4 and 1.5 respectively), with correlations in both cases of .9 with the penetration levels despite MADs of +/- 9 points (e.g. see Table B4). There is a noticeable sub-grouping for Local Chains, with a D value within this group of 2.1 at the first interview (see Table B5) compared 2.2 at the second interview (Table B8). Taking into account this partitioning for Local Chains reduces the MADs to +/- 5 points in both cases (see Table B8).

TABLE B5
Segmentation between Fast Food Chains Brands - 1st Interview.

Buyers of	Who also Bought			
	Hardee	D.Queen	Varsity	Krystal
Hardee	-	29	33	18
Dairy Queen	41	-	31	15
Varsity	51	34	-	20
Krystal	77	46	54	-
Average Penetration	56	37	39	18
2.1*Penetration	**57**	**41**	**37**	**14**

TABLE B6
Brand Duplication of Claimed Purchase - TV News - 1st Interview.

Watchers of	Who also Watched									Average
	11 Alive	Chnl.2	Eye Witness	CBS	NBC	60 Minutes	ABC	20/20	McNeil Lehrer	
11 Alive	-	78	77	69	70	57	49	39	13	57
Chnl. 2 News	83	-	81	68	65	57	57	39	14	58
Eye Witness	83	81	-	77	62	60	53	38	12	58
CBS	84	77	86	-	72	62	58	39	15	62
NBC	91	80	76	78	-	61	60	40	18	63
60 Minutes	80	75	78	72	66	-	49	55	13	61
ABC	83	90	83	80	77	59	-	41	17	66
20/20	84	79	77	70	66	84	53	-	18	66
McNeil Lehrer	79	79	68	75	82	54	61	50	-	69
Avg. Duplication	83	80	78	74	70	62	55	43	15	62
1.1 * Penetration	**88**	**83**	**81**	**73**	**68**	**62**	**53**	**41**	**14**	**62**
Penetration (Table 8.2.)	80	75	74	66	62	56	48	37	13	57
Avg.Dupl. - 1.1*Pen.	-5	-3	-3	1	2	0	2	2	1	0
MAD	5	5	5	4	5	6	4	4	2	4

NOTE: Average correlation with the penetration levels = 0.97

Finally, for TV News the average D value across brands at the first interview is 1.1 (Table B6) vs. 1.2 at the second. This fits the data well (e.g. r=.97 at the first interview) with a MAD of +/- 4 points. There is a small degree of partitioning for the two *weekly* News Programmes, as indicated by the slightly larger Duplication Coefficient (D=1.5) at the first interviews within this group (Table B7) compared with an average D=1.1 for all TV Programmes in Table B6. We will report on the two groups separately whenever their partition affects the general pattern of results.

TABLE B7
Segmentation between TV News Programmes - 1st Interview.

Watchers of	Who also Watched	
	60 Minutes	20/20
60 Minutes	-	55
20/20	84	-
Average Penetration	84	55
1.5*Penetration	**62**	**41**

TABLE B8
Brand Clustering

Breakfast Cereals
(Average Residual $|b_{xy}-Db_x| = 4;7$)

	Children's Brands: Frosted Flakes, Fruit Loops	Health Brands: Raisin Bran, All Bran, Wheat Raisin	Other Brands: Cheerios, K.Corn Flakes, Nut Cheer, Rice Chex
Children's Brands: Frosted Flakes, Fruit Loops	D=2.3;*2.9*	D=0.8;*1.1*	D=1.4;*1.5*
Health Brands: Raisin Bran, All Bran, Wheat Raisin	D=0.7;*1*	D=1.5;*1.8*	D=1.3;*1.9*
Other Brands: Cheerios, K.Corn Flakes, Nut Cheer, Rice Chex	D=1.4;*1.4*	D=1.3;*1.9*	D=1.4;*1.6*

Laundry Detergents
(Average Residual $|b_{x,y}-Db_x| = 9;8$)

	Liquid Brands: Woolite, Wisk, Era	Powder Brands: Tide, Cheer, Bold3, Gain, Oxydol
Liquid Brands: Woolite, Wisk, Era	D = 2;*1.4*	D = 1.5;*1.2*
Powder Brands: Tide, Cheer, Bold3, Gain, Oxydol	D = 1.4;*1.2*	D = 1.7;*1.6*

Fast Food Chains
(Average Residual $|b_{x,y}-Db_x| = 5;5$)

	National Chains: McDonald, Burger King, Wendy	Local Chains: Hardee, Dairy Queen, Varsity, Krystal
National Chains: McDonald, Burger King, Wendy	D = 1.1;*1.2*	D = 1.2;*1.3*
Local Chains: Hardee, Dairy Queen, Varsity, Krystal	D = 1.3;*1.4*	D = 2.1;*2.2*

TV News
(Average Residual $|b_{x,y}-Db_x| = 3;5$)

	Daily Programmes: 11 Alive, Channel 2, Eye Witness, CBS, NBC, ABC, McNeil	Weekly Programmes: 60 Minutes, 20/20
Daily Programmes: 11 Alive, Channel 2, Eye Witness, CBS, NBC, ABC, McNeil	D = 1.1;*1.2*	D = 1.1;*1.1*
Weekly Programmes: 60 Minutes, 20/20	D = 1.1;*1.1*	D = 1.5;*1.5*

NOTE: The two set of figures refer to the 1st and to the 2nd interview respectively.

Most of the sub-groupings of brands highlighted in the previous tables are not very strong and often they do not affect the general patterns, in terms of the relationship between claimed Usage and attitudinal responses. However, they will help explaining the peculiarities sometimes encountered in the results.

APPENDIX C

EVALUATIVE AND DESCRIPTIVE BELIEFS

In this appendix we summarize the results concerning Attribute Beliefs for Laundry Detergents, Fast Food Restaurants and TV News at the first interview. The data at the second interview looks pretty much the same.

The detailed results for Breakfast Cereals at the first interview and the main issues concerning the distinction between "evaluative" and "descriptive" beliefs were discussed in the main text (Sub-sections 8.4.1. to 8.4.3.).

TABLE C1
Difference in Belief Mentions Between "Users" and "Non Users" - 1st Interview
(Average Attributes)

Laundry Detergents			Fast Food Chains		TV News		
Brands by Usage	Average 7 "Evaluative" Attributes	Average 4 "Descriptive" Attributes	Brands by Usage	Average 12 "Evaluative" Attributes	Brands by Usage	Average 10 "Evaluative" Attributes	Average 3 "Descriptive" Attributes
Tide	39	13	McDonald	13	11 Alive	29	10
Woolite	7	20	B.King	28	Chnl.2 News	28	13
Cheer	14	7	Wendy	21	EyeWitness	23	5
Bold 3	27	22	Hardee	10	CBS	23	17
Wisk	18	16	D.Queen	20	NBC	28	21
Gain	32	10	Varsity	20	60 Minutes	14	10
Oxydol	25	8	Krystal	22	ABC	26	16
Era	29	9			20/20	23	25
C.Power	20	21			McNeilLehrer	29	42
Duz	-8	-3					
Average	20	12	**Average**	19	**Average**	25	18

The figures in Table C1 confirm the pattern discussed in Chapter 8 that the discrepancy between "Users'" and "Non-Users'" mentions tends to be greater for "evaluative" than for "descriptive" attributes. Exceptions arise for certain brands like the Laundry Detergent Woolite and the TV News Programmes McNeil Lehrer and 20/20.

TABLE C2
Double Jeopardy for Belief Mentions - 1st Interview
(Average Attributes)

Laundry Detergents			Fast Food Chains		TV News		
Brands by Usage	Average 7 "Evaluative" Attributes	Average 4 "Descriptive" Attributes	Brands by Usage	Average 12 "Evaluative" Attributes	Brands by Usage	Average 10 "Evaluative" Attributes	Average 3 "Descriptive" Attributes
	%	%		%		%	%
Tide	72	26	McDonald	62	11 Alive	61	37
Woolite	23	66	B.King	63	Chnl.2 News	54	35
Cheer	42	25	Wendy	69	EyeWitness	54	37
Bold 3	52	38	Hardee	40	CBS	51	45
Wisk	36	32	D.Queen	46	NBC	54	45
Gain	50	20	Varsity	51	60 Minutes	49	61
Oxydol	48	17	Krystal	50	ABC	53	44
Era	45	20			20/20	51	61
C.Power	36	44			McNeilLehrer	56	67
Duz	6	5					
Average	41	29	**Average**	54	**Average**	54	48
r with Usage	.46	.24	**r with Usage**	.50	**r with Usage** (daily progr.)	-.07	-.80

The results in Table C2 for Laundry Detergents confirm that Double Jeopardy does not apply to "descriptive" attributes. If only Powder brands are considered, the pattern is even more clear with correlations with Usage of .66 for "evaluative" and .07 for "descriptive" attributes. As noted in the main text the correlations with usage among "Users" are always lower than those among all respondents.

On the other hand, Double Jeopardy does not apply to TV News Programmes, as already known (Barwise and Ehrenberg, 1988).

In practice, the analysis for single attributes presents some of the difficulties discussed in Chapter 8, including a certain degree of subjective judgement. While researchers should be aware of these difficulties, an analysis of this kind can give useful clues into the nature of attitudinal responses.

APPENDIX D

INTERACTIONS BETWEEN BRANDS AND ATTRIBUTES OF DIFFERENT SIZE

In this section we report two examples (for Laundry Detergents and TV News) of how brands and attributes vary in size within a product field. For example, in Table D1 below, we classified as "large" those brands with average responses (across attributes) above 30%, as "medium" those with average responses above 20%, and as "small" those at 20% or below. Attributes were classified as "high", "medium" and "large" with similar citeria.

Data of this kind was employed in Section 9.5. (Sub-section 9.5.1.C) to check for interactions between brand and attribute size. No notable interactions were found.

TABLE D1
Belief Responses by Brands and Attributes Sizes
(Laundry Detergents)

		BRANDS												
		LARGE			MEDIUM				SMALL					
ATTRIBUTES		Tide	Woolite	AVE.	Cheer	Bold	Wisk	AVE.	Gain	Oxy dol	Era	Cold Power	AVE.	OVERALL AVERAGE
HIGH		%	%	%	%	%	%	%	%	%	%	%	%	%
Gets Stains	RL	61	15	38	29	38	58	42	24	27	31	13	24	33
Out	RR	75	34	55	42	58	72	57	44	47	48	44	46	52
Good All	RL	52	39	46	50	36	24	37	26	21	21	26	24	33
Fabrics	RR	63	56	60	62	54	47	54	46	52	43	36	44	51
Good in Cold	RL	30	44	37	48	23	19	30	18	12	15	64	28	30
Water	RR	48	61	55	65	36	44	49	39	39	44	67	47	50
HIGH	RL	57	42	40	42	32	34	36	23	20	22	34	25	32
AVE.	RR	69	59	56	56	50	54	54	43	46	45	49	46	51
MEDIUM														
Reasonably	RL	49	15	32	30	27	20	26	23	26	18	19	22	25
Priced	RR	59	25	42	44	42	37	41	32	41	34	32	35	38
Gets Things	RL	50	15	33	31	33	25	30	21	41	16	14	23	27
White	RR	64	40	52	43	53	36	44	48	50	39	43	45	46
Good Big	RL	68	7	38	34	33	13	27	23	22	13	15	18	25
Fam. Wash	RR	81	21	51	57	54	33	48	50	41	38	45	44	47
Smell	RL	43	21	32	30	35	16	27	39	17	14	9	20	25
Fresh	RR	64	50	57	51	63	41	52	60	35	35	41	43	49
Good Value	RL	56	16	36	30	27	17	25	20	22	15	14	18	24
for Money	RR	71	38	55	54	48	42	48	37	37	34	31	35	44
MEDIUM	RL	53	15	34	31	31	18	27	25	26	15	14	20	25
AVE.	RR	68	35	51	50	52	38	47	45	41	36	38	40	45
LOW														
Good for	RL	19	50	35	10	11	47	23	8	10	17	10	11	20
Soaking	RR	47	65	56	24	30	60	38	32	34	43	29	35	40
Clothes	RL	16	41	29	13	40	10	21	14	10	10	8	11	18
Soft	RR	30	54	42	25	54	24	34	12	27	15	26	20	30
Gentle to	RL	14	81	48	10	11	9	10	9	6	6	10	8	17
Clothes	RR	35	86	61	23	29	21	24	30	34	24	25	28	34
LOW	RL	16	57	37	11	21	22	18	10	9	11	9	10	18
AVE.	RR	37	68	53	24	38	35	32	25	32	27	27	28	35
OVERALL	RL	40	31	36	29	29	23	27	20	19	16	18	18	25
AVERAGES	RR	58	48	53	45	48	42	45	39	40	36	38	38	44

TABLE D2
Belief Responses by Brands and Attributes Sizes
(Tv News)

ATTRIBUTES	BRANDS						AVERAGE ALL BRANDS	
	LARGE BRANDS AVERAGES		MEDIUM BRANDS AVERAGES		SMALL BRANDS AVERAGES			
	Resp. Level	Repeat-Rate	Resp. Level	Repeat-Rate	Resp. Level	Repeat-Rate	Resp. Level	Repeat-Rate
HIGH	%	%	%	%	%	%	%	%
Informative	74	86	66	81	60	76	67	81
Easy to follow	73	81	65	76	48	67	65	76
Good reporters	53	66	52	65	37	50	50	63
HIGH ATTR. AVERAGES	66	77	61	74	48	64	61	73
MEDIUM	%	%	%	%	%	%	%	%
Pleasing personalities	55	70	50	64	34	47	49	63
Good time invest.	59	75	46	67	41	66	48	69
Good graphics	49	64	48	63	33	48	47	61
Follow up stories	54	66	45	60	33	48	46	60
Makes you think	55	65	39	54	41	63	43	57
Indepth coverage	48	64	41	58	33	54	41	59
MEDIUM ATTR. AVERAGES	53	67	45	61	36	54	48	64
LOW	%	%	%	%	%	%	%	%
Key stories	41	53	37	48	28	48	37	49
Fast coverage	38	51	38	53	9	29	35	50
Objective	36	56	32	53	28	46	32	53
Helps you relax	20	39	13	31	8	27	14	32
LOW ATTR. AVERAGES	34	50	30	46	18	38	29	46
AVERAGE ALL ATTRIBUTES	50	64	44	59	33	51	44	59

APPENDIX E

CHANGES IN ATTITUDES VERSUS CHANGES IN BEHAVIOUR

Detailed Results

In Tables E1 to E4 below we report the Response Levels - RL by subsequent Usage for the brands of Breakfast Cereals with more than 10 respondents in each usage group and for all Attribute Beliefs.

Table E1
Response Levels by Subsequent Usage
U/U
(Breakfast Cereals)

Brands by U	Keep Coming Back To	Popular with Family	Tastes Nice	Good Value For Money	Reasonably Priced	Nourishing	Very Natural Flavour	Help You to Keep Fit	Low in Sugar	Stay Crispy in Milk	Fun For Children to Eat	AVERAGE ATTRIBUTE
	1st 2nd Int Int U U	1st 2nd Int Int U U	1st 2nd Int Int U U	1st 2nd Int Int U U	1st 2nd Int Int U U	1st 2nd Int Int U U	1st 2nd Int Int U U	1st 2nd Int Int U U	1st 2nd Int Int U U	1st 2nd Int Int U U	1st 2nd Int Int U U	1st 2nd Int Int U U
Raisin Bran	91 89	66 77	86 89	46 57	43 43	77 69	23 29	57 51	17 20	14 14	0 11	47 50
Cheerios	82 82	69 74	72 82	77 72	72 67	67 67	49 56	41 54	69 79	59 69	33 33	63 67
K.CornFlakes	75 83	58 71	83 79	71 83	75 71	38 42	33 58	25 29	42 54	29 33	4 4	48 55
All Bran	70 75	25 20	50 45	55 55	55 50	85 90	85 75	95 95	65 95	30 25	0 0	56 57
AVERAGE	80 82	55 61	73 74	62 67	61 58	67 67	48 55	55 57	48 62	33 35	9 12	54 57

Table E2
Response Levels by Subsequent Usage
U/NU - NU/U
(Breakfast Cereals)

Brands by U	Keep Coming Back To		Popular with Family		Tastes Nice		Good Value For Money		Reasonably Priced		Nourishing		Very Natural Flavour		Help You to Keep Fit		Low in Sugar		Stay Crispy in Milk		Fun For Children to Eat		AVERAGE ATTRIBUTE	
	1st Int U/NU	2nd Int NU/U	1st Int U/NU	2nd Int NU/U	1st Int U/NU	2nd Int NU/U	1st Int U/NU	2nd Int NU/U	1st Int U/NU	2nd Int NU/U	1st Int U/NU	2nd Int NU/U	1st Int U/NU	2nd Int NU/U	1st Int U/NU	2nd Int NU/U	1st Int U/NU	2nd Int NU/U	1st Int U/NU	2nd Int NU/U	1st Int U/NU	2nd Int NU/U	1st Int U/NU	2nd Int NU/U
Raisin Bran	74	46	47	46	74	62	58	38	26	54	84	54	37	23	68	31	16	15	5	23	11	15	45	37
Cheerios	67	89	67	72	50	89	42	72	58	67	42	78	8	50	25	56	75	72	50	44	50	50	49	67
K.CornFlakes	65	50	47	50	35	36	94	71	65	71	29	50	41	71	24	14	76	71	12	21	0	7	44	47
All Bran	36	58	0	25	9	50	36	67	18	33	91	75	45	83	82	100	64	92	9	33	0	0	35	56
AVERAGE	61	61	40	48	42	59	58	62	42	56	62	64	33	57	50	50	58	63	19	30	15	18	43	52

Table E3
Response Levels by Subsequent Usage
NU/U - U/NU
(Breakfast Cereals)

Brands by U	Keep Coming Back To		Popular with Family		Tastes Nice		Good Value For Money		Reasonably Priced		Nourishing		Very Natural Flavour		Help You to Keep Fit		Low in Sugar		Stay Crispy in Milk		Fun For Children to Eat		AVERAGE ATTRIBUTE	
	1st Int NU/U	2nd Int U/NU	1st Int NU/U	2nd Int U/NU	1st Int NU/U	2nd Int U/NU	1st Int NU/U	2nd Int U/NU	1st Int NU/U	2nd Int U/NU	1st Int NU/U	2nd Int U/NU	1st Int NU/U	2nd Int U/NU	1st Int NU/U	2nd Int U/NU	1st Int NU/U	2nd Int U/NU	1st Int NU/U	2nd Int U/NU	1st Int NU/U	2nd Int U/NU	1st Int NU/U	2nd Int U/NU
Raisin Bran	31	32	8	26	46	42	38	37	23	26	31	42	15	32	62	37	8	11	8	5	0	16	25	28
Cheerios	28	33	39	17	39	42	28	42	28	33	44	8	17	17	28	8	33	25	28	25	28	25	31	25
K.CornFlakes	14	41	14	41	21	47	43	59	57	47	36	29	29	29	14	18	29	47	0	12	7	12	24	35
All Bran	8	0	8	9	8	18	8	9	0	0	83	73	67	55	83	82	83	36	25	27	0	0	34	28
AVERAGE	20	27	17	23	29	37	29	37	27	27	49	38	32	33	47	36	38	30	15	17	9	13	28	29

Table E4
Response Levels by Subsequent Usage
NU/NU
(Breakfast Cereals)

Brands by U	Keep Coming Back To		Popular with Family		Tastes Nice		Good Value For Money		Reasonably Priced		Nourishing		Very Natural Flavour		Help You to Keep Fit		Low in Sugar		Stay Crispy in Milk		Fun For Children to Eat		AVERAGE ATTRIBUTE	
	1st Int NU	2nd Int NU	1st Int NU	2nd Int NU	1st Int NU	2nd Int NU	1st Int NU	2nd Int NU	1st Int NU	2nd Int NU	1st Int NU	2nd Int NU	1st Int NU	2nd Int NU	1st Int NU	2nd Int NU	1st Int NU	2nd Int NU	1st Int NU	2nd Int NU	1st Int NU	2nd Int NU	1st Int NU	2nd Int NU
Raisin Bran	15	20	15	17	32	32	17	18	20	17	45	57	20	17	33	38	7	12	7	7	10	8	20	22
Cheerios	6	8	17	22	30	29	21	24	32	24	21	24	13	16	8	6	17	30	16	30	32	29	19	22
K.CornFlakes	18	23	14	29	35	43	38	42	58	51	30	42	33	32	15	16	28	41	11	9	4	5	26	30
All Bran	9	6	4	5	17	18	17	24	22	24	56	61	54	51	65	66	52	59	5	13	1	3	27	30
AVERAGE	12	14	13	18	29	31	23	27	33	29	38	46	30	29	30	32	26	36	10	15	12	26	23	26

The results in Tables E1 to E4 highlight consistent patterns for all brands and attributes (both "evaluative" and "descriptive"): to concurrent Usage claims correspond average Response Levels of about 50%, compared with Response Levels for concurrent "Non Users" of only about 26% (on average across brands and attributes). Individual variations away from this pattern for specific brands or attributes are erratic, except for consistently higher responses at the second interview for the Brand Cheerios in Table E2, which are in line with the results for that brand reported in Chapter 8.

However, the main result overall is that Response Levels are no more predictive of subsequent than of preceding changes in Usage Claims.

The corresponding results for Repeat-Rates and the "Notional Numbers" of repeaters (see Chapter 9, Section 11.3.) follow in Tables E5 to E12.

Table E5
Repeat-Rates % by Variations in Response Levels
High to High
(Breakfast Cereals)

Brands by U	Keep Coming Back To		Popular with Family		Tastes Nice		Good Value For Money		Reasonably Priced		Nourishing		Very Natural Flavour		Help You to Keep Fit		Low in Sugar		Stay Crispy in Milk		Fun For Children to Eat		AVERAGE ATTRIBUTE	
	Forw H	Backw H	Forw H	Backw H	Forw H	Backw H	Forw H	Backw H	Forw H	Backw H	Forw H	Backw H	Forw H	Back H	Forw H	Backw H	Forw H	Backw H	Forw H	Backw H	Forw H	Backw H	Forw H	Backw H
Raisin Bran	91	94	83	70	87	84	75	60	52	53	67	75	25	20	50	56	67	57	0	0	0	0	54	52
Cheerios	91	91	89	83	89	78	80	86	75	81	81	81	74	64	69	52	89	77	83	70	46	46	79	74
K.CornFlakes	78	70	86	71	80	84	82	70	72	76	67	60	75	43	50	43	70	54	71	62	0	0	66	58
All Bran	79	73	40	50	50	56	64	64	64	74	88	83	76	87	95	95	92	63	50	60	-	-	70	70
AVERAGE	85	82	75	69	77	76	75	70	66	70	76	75	63	54	66	62	80	63	51	48	15	15	67	63

Table E6
Repeat-Rates % by Variations in Response Levels
High to Low
(Breakfast Cereals)

Brands by U	Keep Coming Back To		Popular with Family		Tastes Nice		Good Value For Money		Reasonably Priced		Nourishing		Very Natural Flavour		Help You to Keep Fit		Low in Sugar		Stay Crispy in Milk		Fun For Children to Eat		AVERAGE ATTRIBUTE	
	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw
Raisin Bran	43	50	33	17	57	50	36	60	40	29	44	43	0	33	31	75	33	50	0	33	0	0	29	40
Cheerios	50	31	25	46	50	44	60	15	57	25	0	50	100	33	0	40	22	38	33	12	33	44	39	34
K.CornFlakes	27	14	50	29	50	60	56	50	64	60	80	29	29	40	25	0	46	20	0	0	0	0	39	27
All Bran	0	14	-	33	0	17	0	12	0	0	70	78	40	70	78	83	14	82	0	25	-	-	22	41
AVERAGE	30	27	36	31	39	43	38	34	40	29	49	50	42	44	34	50	29	48	8	18	11	15	32	36

Table E7
Repeat-Rates % by Variations in Response Levels
Low to High
(Breakfast Cereals)

Brands by U	Keep Coming Back To		Popular with Family		Tastes Nice		Good Value For Money		Reasonably Priced		Nourishing		Very Natural Flavour		Help You to Keep Fit		Low in Sugar		Stay Crispy in Milk		Fun For Children to Eat		AVERAGE ATTRIBUTE	
	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw
Raisin Bran	75	100	100	60	67	100	60	57	67	40	75	87	50	0	37	57	100	50	100	0	0	0	66	50
Cheerios	100	100	86	100	100	60	40	60	60	100	87	0	100	50	80	0	83	67	20	67	80	67	76	61
K.CornFlakes	50	43	100	57	100	37	83	90	75	87	40	80	100	40	0	33	50	75	0	0	0	0	54	49
All Bran	100	-	100	0	100	0	100	0	-	-	70	88	87	33	100	78	90	25	33	0	-	-	78	28
AVERAGE	81	81	97	54	92	49	71	52	51	57	68	64	84	31	54	42	81	54	38	17	27	22	69	47

Table E8
Repeat-Rates % by Variations in Response Levels
Low to Low
(Breakfast Cereals)

Brands by U	Keep Coming Back To		Popular with Family		Tastes Nice		Good Value For Money		Reasonably Priced		Nourishing		Very Natural Flavour		Help You to Keep Fit		Low in Sugar		Stay Crispy in Milk		Fun For Children to Eat		AVERAGE ATTRIBUTE	
	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw
Raisin Bran	44	33	22	20	47	47	30	27	42	50	74	59	25	30	50	43	25	14	0	0	67	80	39	37
Cheerios	0	0	36	29	63	67	46	40	30	40	46	40	50	40	0	0	55	32	60	32	60	67	41	35
K.CornFlakes	71	56	27	13	61	50	57	52	61	70	79	58	35	36	42	38	68	47	11	14	33	25	50	42
All Bran	36	57	20	17	36	35	38	27	39	35	73	67	59	62	71	69	68	60	17	6	100	25	51	42
AVERAGE	38	37	26	20	52	50	43	37	43	49	68	56	42	38	41	38	54	38	22	13	65	49	45	39

Table E9
"Notional Numbers"
High to High
(Breakfast Cereals)

Brands by U	Keep Coming Back To		Popular with Family		Tastes Nice		Good Value For Money		Reasonably Priced		Nourishing		Very Natural Flavour		Help You to Keep Fit		Low in Sugar		Stay Crispy in Milk		Fun For Children to Eat		AVERAGE ATTRIBUTE	
	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int
Raisin Bran	83	84	55	54	75	75	34	34	23	23	52	52	6	6	28	28	11	11	0	0	0	0	33	33
Cheerios	75	75	61	61	64	64	62	62	54	54	54	54	36	36	28	28	61	61	49	48	15	15	51	51
K.CornFlakes	58	58	50	50	66	66	58	58	54	54	25	25	25	25	12	12	29	29	20	20	0	0	36	36
All Bran	55	55	10	10	25	25	35	35	35	35	75	75	65	65	90	90	60	60	15	15	-	-	46	46
AVERAGE	68	68	44	44	58	58	47	47	41	41	51	51	33	33	40	40	40	40	21	21	5	5	42	42

Table E10
"Notional Numbers"
High to Low
(Breakfast Cereals)

Brands by U	Keep Coming Back To		Popular with Family		Tastes Nice		Good Value For Money		Reasonably Priced		Nourishing		Very Natural Flavour		Help You to Keep Fit		Low in Sugar		Stay Crispy in Milk		Fun For Children to Eat		AVERAGE ATTRIBUTE	
	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int
Raisin Bran	32	23	15	8	42	31	21	23	10	16	37	23	0	7	21	23	5	7	0	7	0	0	17	15
Cheerios	33	28	17	33	25	39	25	11	33	17	0	39	8	16	0	22	16	27	16	5	16	22	17	24
K.CornFlakes	17	7	23	14	17	22	53	35	42	43	23	14	12	28	6	0	35	14	0	0	0	0	21	16
All Bran	0	8	0	8	0	8	0	8	0	0	64	59	18	58	64	83	9	75	0	8	0	-	14	32
AVERAGE	21	16	14	16	21	25	25	19	21	19	31	34	9	28	23	32	16	31	4	5	4	7	17	21

Table E11
"Notional Numbers"
Low to High
(Breakfast Cereals)

Brands by U	Keep Coming Back To		Popular with Family		Tastes Nice		Good Value For Money		Reasonably Priced		Nourishing		Very Natural Flavour		Help You to Keep Fit		Low in Sugar		Stay Crispy in Milk		Fun For Children to Eat		AVERAGE ATTRIBUTE	
	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int
Raisin Bran	23	32	8	16	31	42	23	21	15	10	23	36	7	0	23	21	8	5	8	0	0	0	15	17
Cheerios	28	33	33	17	39	25	11	25	17	33	38	0	17	8	22	0	27	17	6	17	22	17	24	17
K.CornFlakes	7	18	14	23	21	17	36	53	43	41	14	23	29	12	0	6	14	35	0	0	0	0	16	21
All Bran	8	0	8	0	8	0	8	0	0	0	58	64	58	18	83	64	75	9	8	-	-	-	31	15
AVERAGE	16	21	16	14	25	21	19	25	19	21	33	31	28	9	32	23	31	17	5	5	7	4	22	18

Table E12
"Notional Numbers"
Low to Low
(Breakfast Cereals)

Brands by U	Keep Coming Back To		Popular with Family		Tastes Nice		Good Value For Money		Reasonably Priced		Nourishing		Very Natural Flavour		Help You to Keep Fit		Low in Sugar		Stay Crispy in Milk		Fun For Children to Eat		AVERAGE ATTRIBUTE	
	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int
Raisin Bran	7	7	3	3	15	15	5	5	8	8	33	34	5	5	16	16	2	2	0	0	7	6	9	9
Cheerios	0	0	6	6	19	19	10	10	10	10	10	10	6	6	0	0	9	10	10	10	19	19	9	9
K.CornFlakes	13	13	4	4	21	21	22	22	35	36	24	24	11	11	6	6	19	19	1	1	1	1	14	14
All Bran	3	3	1	1	6	6	6	6	8	8	41	41	32	32	46	45	35	35	1	1	1	1	16	16
AVERAGE	6	6	4	4	15	15	11	11	15	15	27	27	14	14	17	17	16	16	3	3	7	7	12	12

The results reported above show that, on average, about 20 respondents repeated their beliefs about a brand when Response Levels varied either from High to Low or from Low to High between interviews (see Tables E10 and E11). Hence, the differing Repeat-Rates in Tables E6 and E7 for these two sub-groups of consumers were due to the differences in Response Levels used in the calculations and not to the number repeating a response.

Repeat-Rates corresponding to High to High variations in Response Levels are consistently higher than those corresponding to Low to Low variations (i.e. about 65% in Table E5 versus about 42% in Table E8), since both the "notional number" of repeaters and the Response Levels used as a base in the calculations are higher for the H/H RR than for the L/L RR.

The results in Tables E1 to E12 in this Appendix confirm that the patterns discussed in Chapter 11 apply to individual brands and attributes of Breakfast Cereals. The patterns also replicate for individual brands and attributes of the other product categories. We do not report them in detail here for lack of space (e.g. we calculated about 36,000 Repeat-Rates in total in the two countries).

APPENDIX F

ANALYSIS OF VARIANCE

When we first analyzed the data we conducted some pilot work on the relationship between changes in Claimed Usage (e.g. U to NU) and corresponding changes in Attribute Belief Response Levels - RL and Repeat-Rates - RR for Breakfast Cereals in the US.

As discussed in detail in Chapter 11, Between Group Analysis had indicated that aggregate Belief Responses - RL varied with the Usage claimed *at the time* of the interview, and were no more predictive of future than of past changes in buying. Repeat-Rates - RR were also found to vary with the Usage claimed at different times: more steady "Users" of a brand (i.e. "Users" at both interviews) seemed to repeat their attitude responses than persistent "Non-Users" (NU at the 1st and at the 2nd interview). For switchers between "Users" and "Non Users" (and vice-versa) there was the added complication of the size of the Response Level used as a base in the calculation of the Repeat-Rate and this seemed to be the main cause for differing Repeat-Rates for "Switchers", rather than the *number* of people giving the same response twice.

Because of this added complication for Repeat-Rates, we decided at this stage to seek formal confirmation of the pattern which had already emerged fairly clearly (by means of the Between Group Analyses) with some more conventional method of statistical analysis. We intended to undertake the analysis at the brand level, by comparing if the average Repeat-Rates - RR for each brand across attributes differed significantly among the four Usage groups (i.e. U/U, U/NU, NU/U, NU/NU).

We decided to do so for Breakfast Cereals, in order to compare the two sets of results (Between Group Analysis vs. conventional statistical technique) for the same product category. Having found that the two sets of results were equivalent, we did not pursue conventional statistical techniques any further, hence this Appendix refers to Breakfast Cereals only.

Since essentially we wanted to compare the means of four groups, an Analysis of Variance seemed the most appropriate technique to apply. However, we were faced with several problems for the application of a Parametric ANOVA to our data set.

Firstly we were working with percentages, and consequently the variables were bounded by 0 and 1. This problem could have been solved by transforming the variables in a way which would have "stretched" the upper and lower tails, i.e. the values of p near 1 and 0, making the relationship more nearly linear. Commonly used ways of achieving this are Logit, Arcsin or Probit transformations.

However, our data also violated the normality assumption of ANOVA, as graphically illustrated by the diagrams F1 to F4 below. These diagrams are for the "forward" Repeat-Rates for each brand of Breakfast Cereals and the attribute "Tastes Nice". The F statistic employed by ANOVA is robust with respect to the normality assumption when either the sample size is 50 or more or, for moderately non-normal distributions, even with as few as 10 to 20 observations. In our case not only the distributions appeared generally far from being normally distributed but, because of "nought" Response Levels for some brands/attribute combinations, sometimes we had less than 11 observations (Repeat-Rates) for a brand in a Usage group (e.g. only 7 observations for Frosted Flakes in the U/U group).

Hence we decided that, at least as a first step, the application of a Non-Parametric technique (which does not require assumptions about the shape of the underlying distribution) would have been a more robust test of significant differences between the Usage groups. If the Non-Parametric test had shown strong enough results, we could then, as a second degree of approximation, undertake a traditional ANOVA on transformed variables which would have given us clues regarding interactions between variables.

The Non-Parametric test we selected was the Kruskal-Wallis One-Way Analysis of Variance (hereafter K-W test), which is commonly used to test for differences between three or more groups which do not appear normally distributed, and especially if the sample sizes are small (Newbold, 1988; Norusis, 1988).

In the K-W test all cases from the groups are combined and ranked in ascending order. Average ranks are assigned in the case of ties. The test is based on the sums of the ranks R_1, R_2,..., R_k for the K samples:

$$K\text{-}W=\frac{12}{n(n+1)}\sum_{i=1}^{K}\frac{R^2{}_i}{n_i}-3(n+1)$$

where n_i are the sample sizes in the K populations and n is the total number of sample observations. The K-W statistic has approximately a chi-square distribution with (K-1) degrees of freedom under the null hypothesis that the population means are the same: this would be in doubt if a large value for K-W were observed.

Before discussing the results of the K-W test, we should note that the "Non Users" group in this Appendix include the respondents claiming to buy a brand "About once every three months" which, for reasons explained in Chapter 8, had been left out in subsequent work (e.g. from the analysis in Chapter 11). However, the results including the "About once every three

FIGURE F1

Breakfast Cereals – Tastes Nice

U/U – Forward

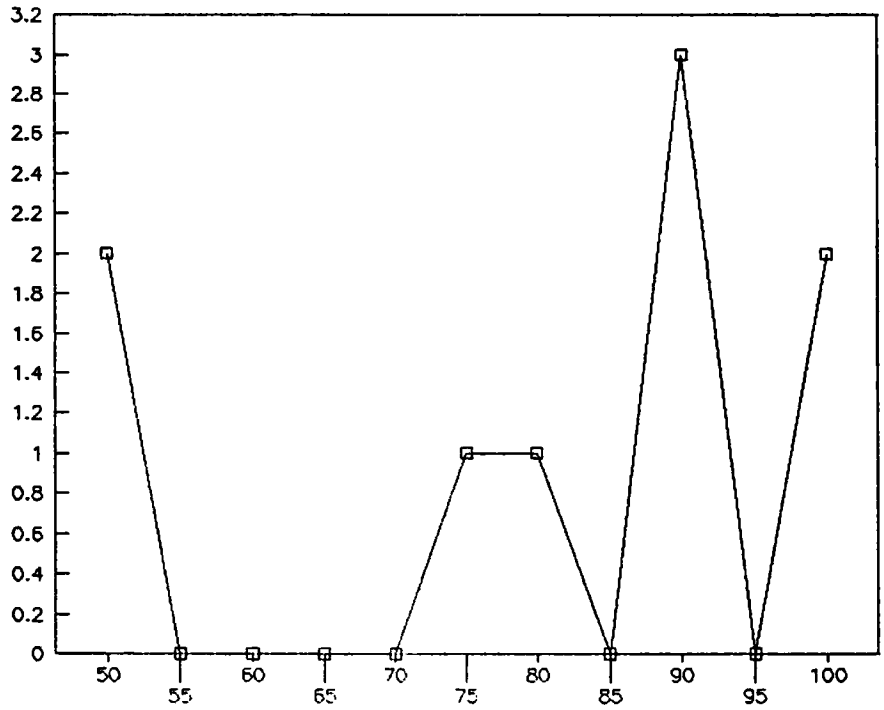


FIGURE F2

Breakfast Cereals – Taste Nice

NU/NU – Forward

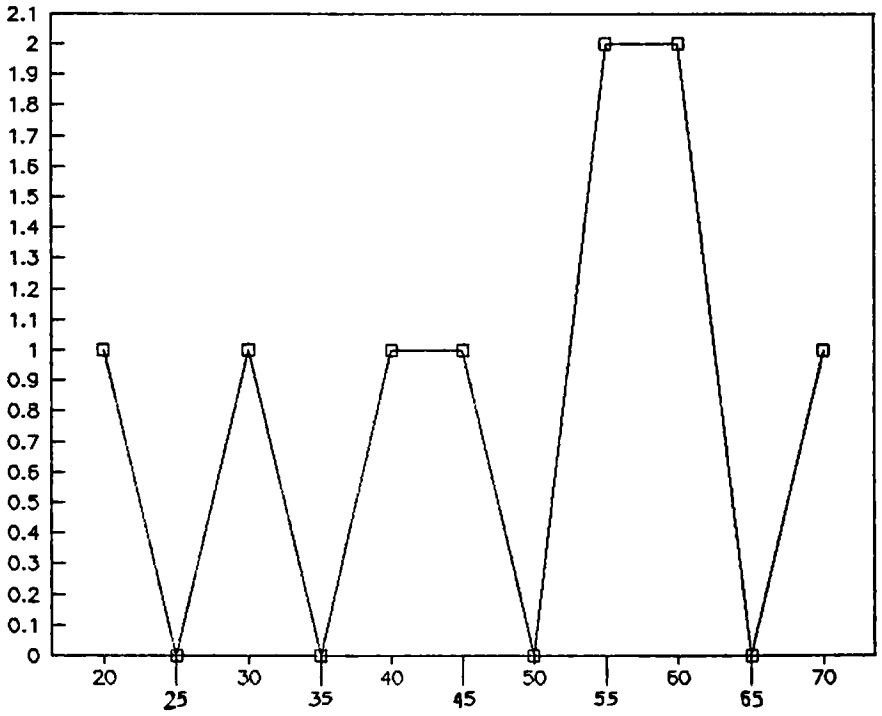


FIGURE F3

Breakfast Cereals – Taste Nice

NU/U– Forward

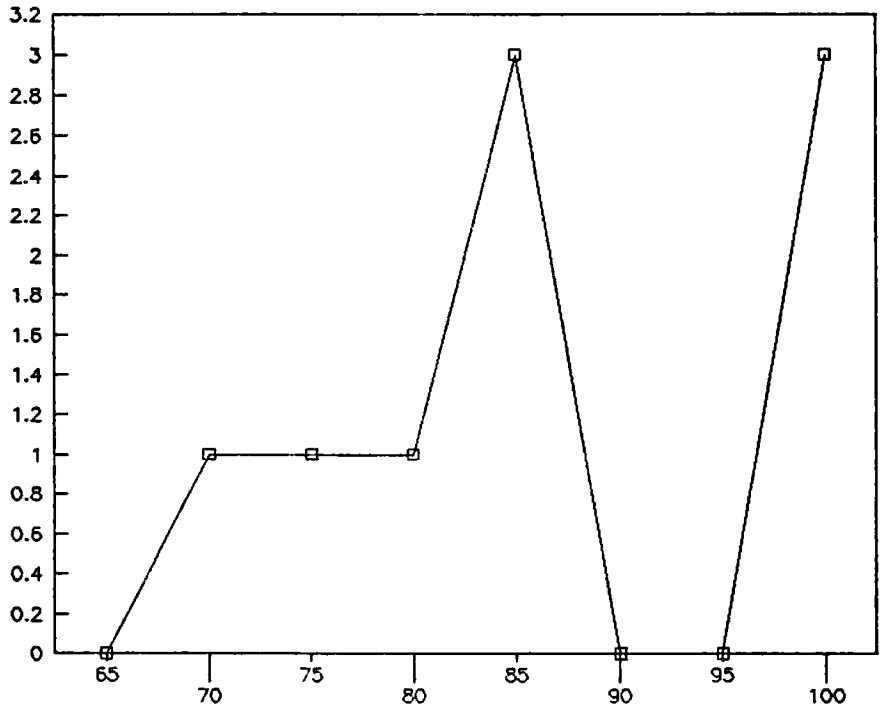
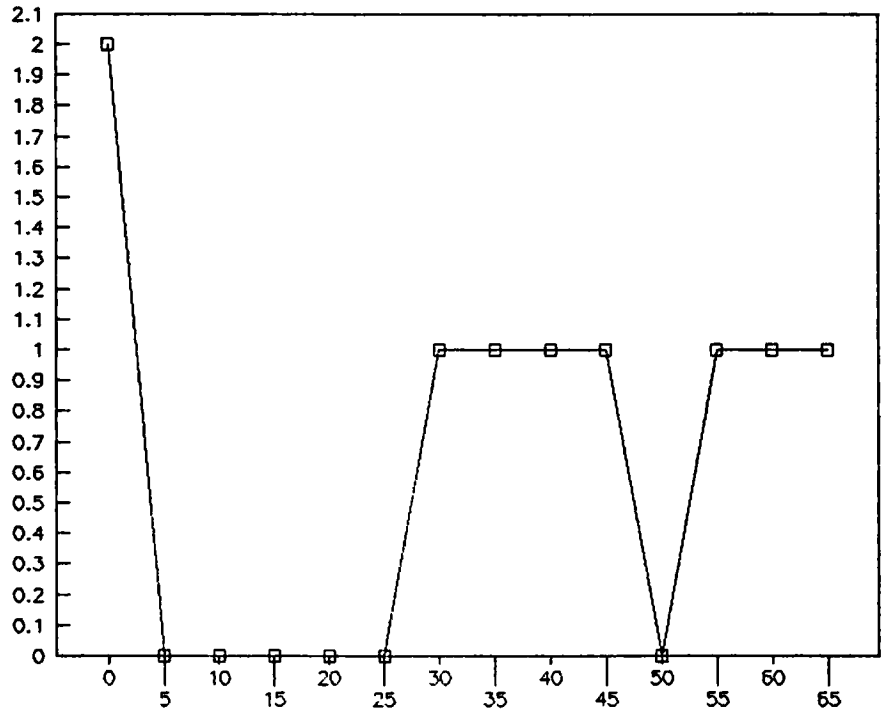


FIGURE F4

Breakfast Cereals – Taste Nice

U/NU – Forward



months" "border" category among the "Non Users" are very similar to those obtained with the narrower Non Usage definition used in Chapter 11 and in Appendix E. For example, the average Response Levels for the NU sub-groups are about 22% in Table F1 here, versus about 24% in Table E4 (Appendix E), excluding the "border" category and the smaller brands.

Table F1
Response Levels - RL, Repeat-Rates - RR and "Notional Numbers"
(Breakfast Cereals - including "border" category)
(Average Attribute)

	RESPONSE LEVELS - RL								REPEAT-RATES - RR								NOTIONAL NUMBERS							
									High to High		High to Low		Low to High		Low to Low		High to High		High to Low		Low to High		Low to Low	
	1st Int U	2nd Int U	1st Int U/NU	2nd Int NU/U	1st Int NU/U	2nd Int U/NU	1st Int NU	2nd Int NU	Forw	Backw	Forw	Backw	Forw	Backw	Forw	Backw	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int	1st Int	2nd Int
Raisin Bran	47	50	47	41	34	35	25	27	54	52	38	47	62	52	48	46	25	26	18	19	21	18	12	12
Cheerios	63	67	49	65	34	39	25	28	79	74	55	43	81	69	45	40	50	49	27	28	27	27	11	11
KCornFlak.	48	55	45	43	28	39	32	34	66	58	48	31	57	54	52	48	32	32	22	13	16	21	17	16
Frost.Flak.	24	27	27	40	22	19	14	18	65	53	27	28	53	31	34	25	16	14	7	11	12	6	5	5
All Bran	56	57	38	53	34	29	29	31	70	70	23	41	77	26	52	44	39	40	9	22	26	7	15	14
Nut Cheer	35	43	38	41	15	32	11	16	51	43	48	22	36	59	26	18	18	18	18	9	5	19	3	3
Frt Loops	31	31	20	30	23	18	12	15	47	41	18	39	54	19	35	24	14	13	4	12	12	3	4	4
Rice Chex	56	62	59	52	29	36	24	28	71	64	44	35	62	60	41	35	40	40	26	18	18	22	10	10
Wts.Rais.	41	43	40	35	24	29	14	16	52	52	31	40	55	53	34	27	21	22	12	14	13	15	5	4
AVERAGE	45	48	41	42	25	31	19	22	62	56	37	36	59	47	41	34	28	28	16	16	17	15	9	9

We conducted the K-W test first on the Repeat-Rates of each brand calculated "forward", then on the ones calculated "backward" as reported in Table F2 below.

Table F2
Kruskal-Wallis Analysis of Variance
"Forward" versus "Backward" Repeat-Rates - RR
(Breakfast Cereals - Attribute Beliefs)

		"FORWARD"						"BACKWARD"					
						Corrected for ties						Corrected for ties	
Brand	Usage	Mean Rank	Cases	χ^2	Signifi-cance	χ^2	Signifi-cance	Mean Rank	Cases	χ^2	Signifi-cance	χ^2	Signifi-cance
Raisin Bran	U/U	26	10	8	*.04*	8	*.04*	25	11	.83	.84	.83	.84
	U/NU	14	11					24	11				
	NU/U	28	10					21	11				
	NU/NU	20	11					20	11				
Cheerios	U/U	32	11	26	.00	26	.00	34	11	27	.00	27	.00
	U/NU	16	11					31	11				
	NU/U	33	11					13	11				
	NU/NU	10	11					12	11				
KCorn Flakes	U/U	29	11	6	.09	7	.09	28	11	8	*.05*	8	*.05*
	U/NU	17	10					26	11				
	NU/U	24	11					14	11				
	NU/NU	18	11					22	11				
Frosted Flakes	U/U	26	7	9	*.03*	9	*.03*	24	8	2	.54	2	.53
	U/NU	13	9					19	8				
	NU/U	21	9					18	10				
	NU/NU	14	10					17	11				
All Bran	U/U	23	10	15	*.00*	15	*.00*	28	10	7	.06	7	.06
	U/NU	10	9					15	8				
	NU/U	30	9					18	10				
	NU/NU	17	11					18	11				
NutCheer	U/U	25	10	8	.05	8	.05	26	11	8	.05	8	.04
	U/NU	23	10					29	11				
	NU/U	20	8					16	10				
	NU/NU	13	11					17	11				
Frt Loops	U/U	22	9	4	.23	4	.21	23	8	6	.09	7	.08
	U/NU	13	8					12	8				
	NU/U	22	9					21	8				
	NU/NU	17	10					15	10				
Rice Chex	U/U	28	11	8	.05	8	.05	27	11	16	.00	16	.00
	U/NU	19	10					30	9				
	NU/U	24	10					13	10				
	NU/NU	15	11					14	11				
Wts.Rais.	U/U	26	9	6	.12	6	.12	26	8	5	.15	5	.15
	U/NU	17	11					24	11				
	NU/U	26	11					21	11				
	NU/NU	17	11					15	11				

In Table F2 above we have reported the Mean Rank and the number of Cases[37], for each usage sub-group within each brand of Breakfast Cereals. The χ^2 statistics and the corresponding Significance Values are also shown, indicating the degree to which, at the brand level, attitudinal Repeat-Rates differ among the four usage sub-groups.

For example, for the "forward" RR of Raisin Bran, Cheerios, Frosted Flakes, All Bran, Nut Cheer and Rice Chex, the χ^2 values correspond to significance levels of .05 or below, indicating that we can be reasonably confident (i.e. we have at most a 5% chance of wrongly rejecting the "null hypothesis" of equality among the four usage groups) that the RR for these brands vary with changes in Usage claims at the two interviews.

However, for only three brands (Cheerios, NutCheer, and Rice Chex) we can make the same inference for both the "forward" and "backward" Repeat-Rates at the .05 degree of significance. By lowering the level of significance to .1, we could do so for both for the "forward" and "backward" Repeat-Rates of two more brands, i.e. Kellogg's Corn Flakes and All Bran.

As in the initial stages of Between Group Analysis (see Chapter 11), the results reported in Table F2 are not straighforward: only for some of the brands the K-W test indicates significance differences among Usage groups and, furthermore, "forward" and "backward" Repeat-Rates often yield contradictory conclusions. For example, the χ^2 value of 8 and the significance level of .04 for Raisin Bran indicate that the "forward" RR are different among Usage groups, whereas the corresponding values (.83 and .84) for the "backward" RR indicate that they are not.

May be the size of the Response Level used as a base in the calculation was a confounding effect on the "forward" and "backward" Repeat-Rates of different groups of consumers.

Because of the discrepancies between the "forward" and "backward" results and the potential confouding effect of the size of the Response Level used as a base in the calculation of the Repeat-Rates, as a next step we decided to carry out an additional K-W test on the "forward" and "backward" Repeat-Rates pooled together by the *variations* in Response Level. Hence for each brand we contrasted the twentytwo or so High to High Repeat-Rates (one for each attribute "forward" and "backward") against all the High to Low, all the Low to High and all the Low to Low Repeat-Rates.

By pooling together the "forward" and "backward" Repeat-Rates by the variations in the size of the Response Level we still did not achieve a normal distribution (see Figures F5 to F8),

---

[37] In several instances the number of cases in the same Usage group for a brand varied between the "forward" and the "backward" Repeat-Rate. This was because sometimes we had a "nought" Response Level only at the first or at the second interview, and hence a missing "forward" or "backward" Repeat-Rate value.

FIGURE F5

Breakfast Cereals — Repeat–Rates

High to High — Forward and Backward

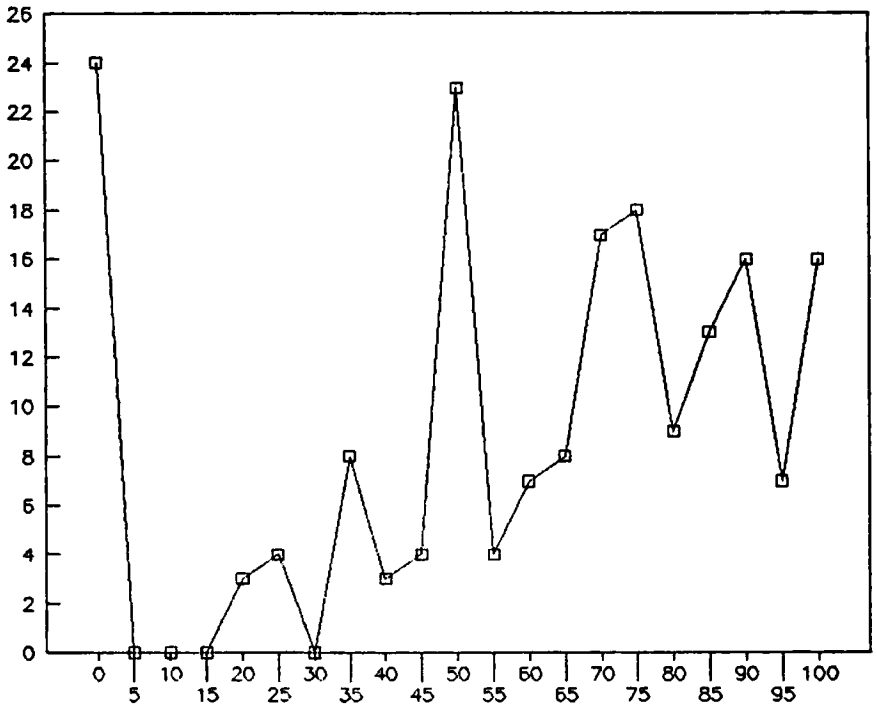


FIGURE F6

Breakfast Cereals — Repeat–Rates

High to Low — Forward and Backward

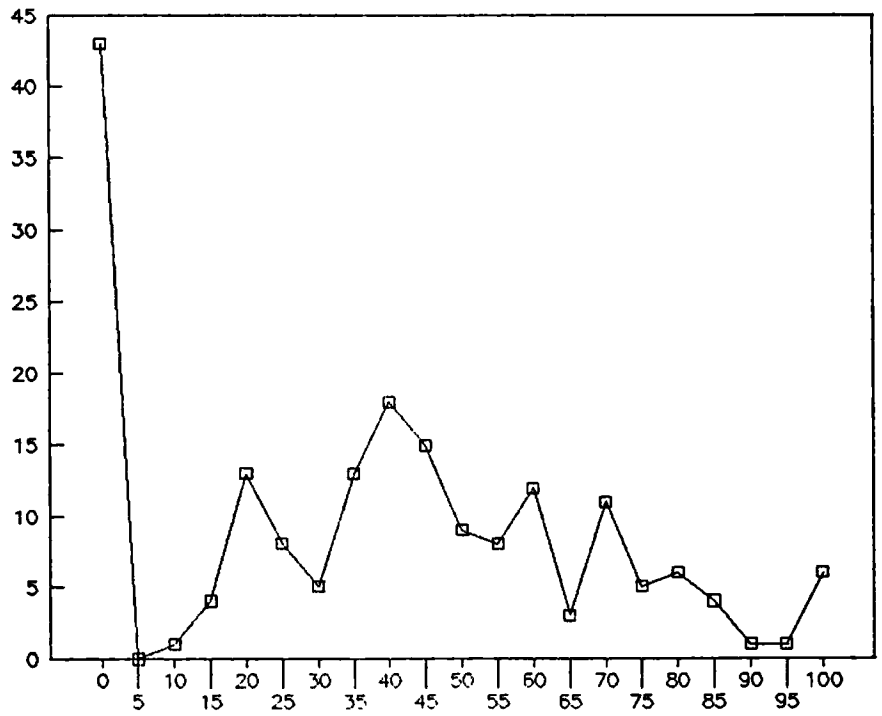


FIGURE F7

Breakfast Cereals — Repeat-Rates

Low to High — Forward and Backward

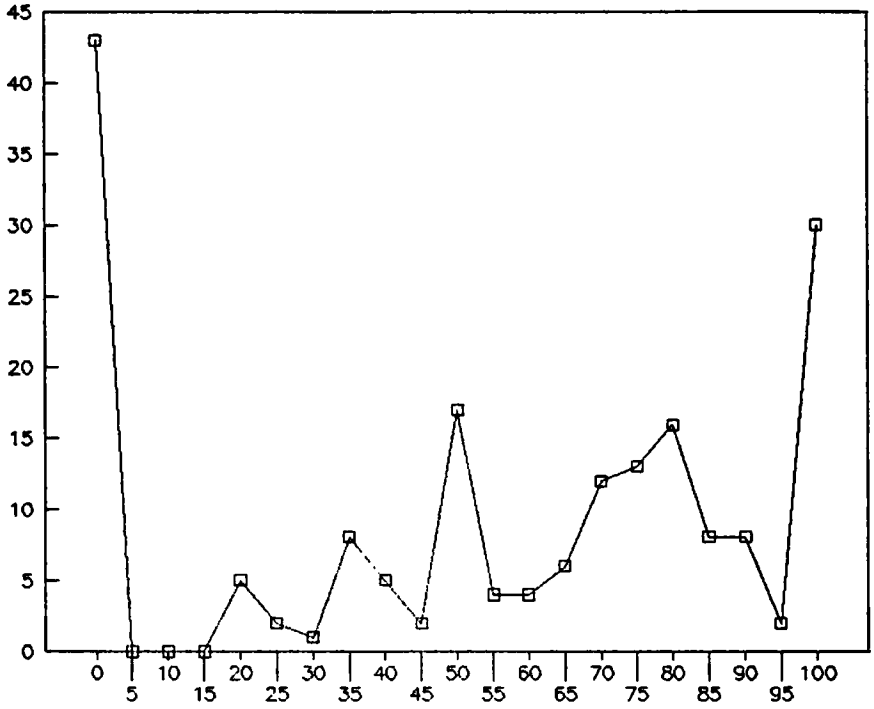
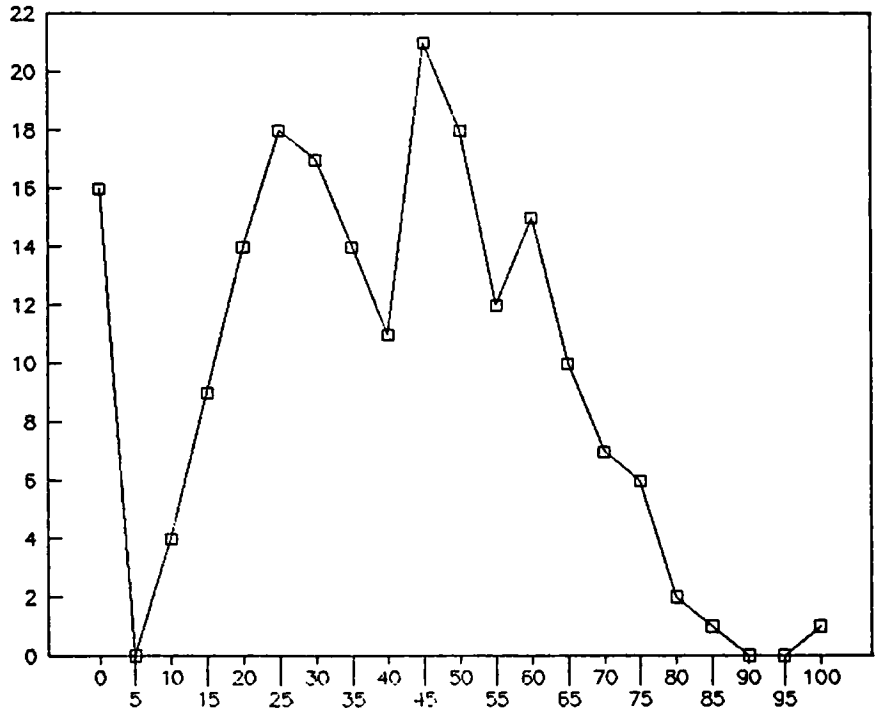


FIGURE F8

Breakfast Cereals — Repeat-Rates

Low to Low — Forward and Backward



nonetheless we could eliminate not only some of the "wobble" at the brand level, but also the confouding effect of the size of the Response Level used as a base in the calculation.

The results of this further K-W test are reported in Table F3 below.

Table F3
Kruskal-Wallis Analysis of Variance
Repeat-Rates - RR by Variations in Response Levels- RL
(Breakfast Cereals - Attribute Beliefs)

Brand	Variation in Response Level	Repeat-Rates by Variations in Response Level					
						Corrected for ties	
		Mean Rank	Cases	χ^2	Significance	χ^2	Significance
Raisin Bran	High to High	50	21	6	.09	6	.09
	High to Low	35	22				
	Low to High	51	21				
	Low to Low	39	22				
Cheerios	High to High	64	22	49	.00	49	.00
	High to Low	29	22				
	Low to High	62	22				
	Low to Low	22	22				
KCorn Flakes	High to High	57	22	12	.01	12	.00
	High to Low	32	21				
	Low to High	48	22				
	Low to Low	39	22				
Frosted Flakes	High to High	49	15	10	.02	10	.02
	High to Low	29	19				
	Low to High	41	17				
	Low to Low	31	21				
All Bran	High to High	51	20	14	.00	14	.00
	High to Low	27	19				
	Low to High	47	17				
	Low to Low	34	22				
NutCheer	High to High	50	21	10	.02	10	.02
	High to Low	39	20				
	Low to High	49	19				
	Low to Low	30	22				
Frt Loops	High to High	44	17	4	.29	4	.27
	High to Low	32	16				
	Low to High	35	17				
	Low to Low	32	20				
Rice Chex	High to High	55	22	22	.00	22	.00
	High to Low	32	20				
	Low to High	54	19				
	Low to Low	28	22				
Wts.Rais.	High to High	52	17	10	.02	10	.02
	High to Low	37	22				
	Low to High	50	22				
	Low to Low	31	22				

The results in Table F3 illustrate that, when pooling the data as described above, the χ^2 values in most instances increase (e.g. from 6 or 8 in Table F2 for K.CornFlakes to 12 here). To

higher χ^2 usually correspond lower significance values: for all brands except Raisin Bran and Fruit Loops the significance levels in Table F3 are .02 or below. Hence (except for those two brands) Repeat-Rates appear to differ, beyond reasonable doubt, with Variations in Response Levels (i.e. in Usage).

If we lower our standards to a .1 significance level we can make the same assertion also for Raisin Bran. This would leave Fruit Loops as the only brand for which Variations in Response Levels (i.e. in Usage) do not significantly affect the Repeat-Rates.

The results in Table F3 are very strong (the RR for seven out of the nine Breakfast Cereals brands differ with Variations in RL - and Usage) and are consistent with the analysis carried out in Chapter 11 and the conclusions we drew then, i.e. that the size of Repeat-Rates is affected by concurrent changes in Usage. However, for Switchers the relationship between changes in Usage and Repeat-Rates is mediated by the size of the Response Levels used as a denominator. By pooling together the "forward" and "backward" Repeat-Rates as just done in Table F3 we have eliminated that confounding element, and we have brought out the main effect of *variations* in Response Levels (and/or in Usage) which appear as the main discreminating factor between RR.

Because non-parametric tests such as the Kruskal-Wallis do away with the assumption of normality, they yield more conservative results compared with a Parametric Analysis of Variance undertaken on data whose distribution is markedly not normal, especially when the sample sizes are small. The results in Table F3 were strong, hence we decided to undertake a Parametric 3-way Analysis of Variance on Arcsin-transformed Repeat-Rates that would give us an indication of any interactions between Usage, Brand, and Attribute that may affect our results. Since our main focus now was on possible interactions, rather than on the results for individual brands, we examined both the individual and joined effects of the variables Usage, Brand and Attribute[38] on the variations of all Repeat-Rates pooled together. The results are reported in Table F4 below.

[38] We have included in this analysis only the seven attributes for which we had non-zero Repeat-Rates across all nine brands.

Table F4
3-Way Analysis of Variance - Arcsin Transformation
(Average Attribute Belief and Brand)
(Breakfast Cereals)

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig. of F
Main Effects	21	17	1.26	10.9	.00
USAGE	11	3	3.60	31.4	.00
BRAND	7	8	.92	8.0	.00
ATTRIBUTE	3	6	.53	4.6	.00
2-Way Interactions	18	90	.20	1.7	.00
USAGE BRAND	4	24	.15	1.3	.14
USAGE ATTRIBUTE	3	18	.17	1.5	.09
BRAND ATTRIBUTE	11	48	.24	2.0	.00
3-Way Interactions	16	144	.11	.9	.56
USAGE BRAND ATTRIBUTE	16	144	.11	.9	.56
Explained	55	251	.22	1.9	.00
Residual	29	252	.11		
Total	84	503	.17		

The results of the 3-way Analysis of Variance in Table F4 indicate that all three factors (Usage, Brand and Attribute) taken individually have a strong effect on the Repeat-Rates (the significance of the coefficient F in the Main Effect section of the Table is .00 in all cases). This is in line not only with the results of the K-W test at the brand level discussed above, but also with the findings discussed in Chapter 9 relating the size of the Repeat-Rates to the size of the Response Level and the market share of the brand. By the same token, again as discussed in Chapter 9, Repeat-Rates also vary with the size of the attributes.

As expected we did not find any significant 2-way interaction between Usage and Brand and Usage and Attribute, nor any 3-way interaction among the three independent variables which would affect our results.

The significant 2-way interaction between Brand and Attribute emerging from the Analysis of Variance in Table F4 merely reflects the known fact that higher Repeat-Rates are brought about both by larger brands and by their corresponding higher attribute responses. On the other hand, as we discussed in Chapter 9, there is no interaction between brand size and attribute size in the sense of affecting the differences in Repeat-Rates between "large" and "small" brands which, apart from a "ceiling" effect for the Repeat-Rates corresponding to very high response levels, are not affected by the size of the attribute.

In conclusion, the results of both the K-W test and Parametric (on transformed variables) Analyses of Variance confirm the results obtained by means of Between Group Analysis in Chapter 11, i.e. that Repeat-Rates - RR are affected by variations in Response Levels - RL arising from differing Usage claims at the two interviews.

APPENDIX G

UK DATA

For comparison with the equivalent American results in Chapter 9, in this Appendix we report the results obtained in the United Kingdom.

In brief summary, as in the US, British aggregate responses appear stable over time spans between interviews ranging from 1 to 12 months (Table G1). This is in contrast with very variable individual responses (Table G2). On average only about 50% of individual respondents give the same answer at subsequent interviews, no matter how far apart (except for a small blip after one month - see Table 9.7. in Chapter 9).

Variations between brands around the average 50% Repeat-Rates are related to the size of the initial response (Table G3), as for the known DJ pattern (see Chapter 6).

Finally, we found no interaction between the size of the brands and the size of the attributes (Tables G4 and G5).

All results in the UK closely match those in the US.

TABLE G1

Aggregate Responses Over Time - United Kingdom

(The Average Brand)

	CLAIMED BRAND USAGE					ADVERTISING RECALL					ATTRIBUTE BELIEFS*					LIKELIHOOD TO BUY				
	Deterg.	Cereals	Soups	Tooth-pastes	Fizzy S. Drinks	Deterg.	Cereals	Soups	Tooth-pastes	Fizzy S. Drinks	Deterg.	Cereals	Soups	Tooth-pastes	Fizzy S. Drinks	Deterg.	Cereals	Soups	Tooth-pastes	Fizzy S. Drinks
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
1st interview	15	30	15	16	27	20	23	6	19	14	17	22	18	27	16	19	36	25	22	27
2nd int. after 1 month	14	28	16	17	26	23	28	7	22	17	21	27	21	33	19	21	39	31	24	32
3 months	15	28	14	14	18	21	25	7	16	15	19	22	16	27	14	20	33	24	23	27
6 "	15	27	17	14	18	23	24	9	18	12	18	24	19	25	16	21	34	26	23	30
12 "	15	30	17	17	23	23	25	7	19	15	19	24	19	28	18	19	35	27	23	29
Av.(3 to 12m)	**15**	**28**	**16**	**16**	**21**	**22**	**25**	**8**	**18**	**14**	**19**	**23**	**18**	**27**	**16**	**20**	**34**	**26**	**23**	**29**
Av. Diff. with 1st interview	**0**	**-2**	**+1**	**0**	**-6**	**+2**	**+2**	**+2**	**-1**	**0**	**+2**	**+1**	**0**	**0**	**0**	**+1**	**-2**	**+1**	**+1**	**+2**

* Average attribute

TABLE G2
Repeat-Rates - RR - United Kingdom
(Average split sample)

Brands by Usage	CLAIMED BRAND USAGE						ADVERTISING RECALL						ATTRIBUTE BELIEFS*						LIKELIHOOD TO BUY						AVG
	Det.	Cer.	Soups	Tooth-paste	Fizzy Soft Drinks	Avg. Prod.	Det.	Cer.	Soups	Tooth-paste	Fizzy Soft Drinks	Avg. Prod.	Det.	Cer.	Soups	Tooth-paste	Fizzy Soft Drinks	Avg. Prod.	Det.	Cer.	Soups	Tooth-paste	Fizzy Soft Drinks	Avg. Prod.	
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
1st	71	83	79	69	79	**76**	62	72	68	55	67	**65**	60	62	80	64	56	**64**	76	81	89	76	82	**81**	**72**
2nd	54	76	51	58	64	**61**	43	68	41	42	70	**53**	52	55	52	56	45	**52**	62	80	49	66	61	**64**	**58**
3rd	59	71	43	68	53	**59**	67	45	32	56	29	**46**	53	47	56	56	45	**51**	65	71	64	66	63	**66**	**56**
4th	56	67	57	52	53	**57**	35	41	-	54	51	**45**	48	42	42	48	49	**46**	65	66	52	57	58	**60**	**52**
5th	67	59	52	53	52	**57**	36	22	-	35	48	**35**	46	42	47	45	43	**45**	61	63	63	54	65	**61**	**50**
6th	68	58	52	44	49	**54**	42	45	37	22	18	**33**	49	37	51	47	36	**36**	59	65	63	53	47	**57**	**46**
7th	58	63	42	62	38	**53**	34	34	-	43	0	**28**	48	41	41	49	34	**43**	64	63	49	60	43	**56**	**45**
8th	43	37	-	40	48	**42**	-	37	-	40	21	**33**	39	36	-	47	33	**39**	53	49	-	53	51	**52**	**42**
Average	**62**	**64**	**54**	**56**	**55**	**58**	**46**	**46**	**46**	**43**	**38**	**44**	**47**	**45**	**50**	**51**	**43**	**47**	**63**	**67**	**61**	**61**	**59**	**62**	**53**
r(RL,RR)	.65	.86	.88	.71	.95	.81	.97	.90	.99	.88	.90	.93	.92	.96	.95	.94	.91	.94	.92	.88	.86	.94	.90	.90	.90
r(U,RR)							.79	.84	.97	.62	.76	.78	.97	.97	.94	.93	.85	.93	.91	.93	.83	.93	.88	.90	.84

* Average Attribute

TABLE G3

Absolute Response Levels (RL) and Repeat-Rates (RR) - United Kingdom

(Average split sample)

ABSOLUTE RL	Average Detergents 13 Attributes			Average Cereals 12 Attributes			Average Soup 12 Attributes			Average Toothpaste 12 Attributes			Average S. Drinks 12 Attributes			5 Products 61 Attributes		
	(No. of cases)	Av. RL	AV. RR	(No. of cases)	Av. RL	AV. RR	(No. of cases)	Av. RL	AV. RR	(No. of cases)	Av. RL	AV. RR	(No. of cases)	Av. RL	AV. RR	(No. of cases)	Av. RL	AV. RR
		%	%		%	%		%	%		%	%		%	%		%	%
70-79	-	-	-	(1)	71	81	-	-	-	-	-	-	-	-	-	(1)	71	81
60-69	-	-	-	(1)	61	77	(5)	63	89	-	-	-	-	-	-	(6)	63	87
50-59	(1)	56	80	(6)	54	74	(2)	58	85	(3)	51	68	(1)	51	80	(13)	54	75
40-49	(4)	44	68	(10)	43	64	(4)	45	73	(11)	43	65	(4)	43	71	(33)	43	67
30-39	(14)	35	64	(14)	33	56	(3)	34	69	(18)	34	58	(5)	33	61	(54)	34	60
20-29	(26)	23	53	(19)	24	48	(16)	23	57	(35)	25	50	(21)	24	55	(117)	24	52
10-19	(43)	15	45	(22)	15	37	(39)	14	48	(27)	17	43	(37)	14	43	(168)	15	44
0-9	(16)	7	34	(23)	6	25	(27)	6	34	(2)	9	30	(28)	5	24	(96)	6	29
Average (weighted)	(104)	20	47	(96)	24	45	(96)	19	50	(96)	27	51	(96)	16	43	(488)	21	47
r (RL,RR)			.99			.99			.99			.98			.98			.99

NOTE: All Averages are weighted by number of cases in each category

TABLE G4

Response Levels (RL) and Repeat-Rates (RR) Across Brands and Attributes - United Kingdom

(For Attributes of different "sizes")

(Average split sample)

Attribute Size:	Laundry Deterg. (No. of Cases)	Av. RL	Av. RR	Break. Cereals (No. of Cases)	Av. RL	Av. RR	Soups (No. of Cases)	Av. RL	Av. RR	Toothpaste (No. of Cases)	Av. RL	Av. RR	Fizzy S. Drinks (No. of Cases)	Av. RL	Av. RR	**Overall Average** (No. of Cases)	Av. RL	Av. RR
		%	%		%	%		%	%		%	%		%	%		%	%
High	(4)	23	**52**	(3)	32	**55**	(6)	21	**52**	(4)	35	**56**	(4)	22	**51**	(21)	26	**53**
Medium	(3)	19	**49**	(6)	21	**41**	(4)	18	**53**	(5)	25	**52**	(4)	18	**46**	(22)	21	**48**
Low	(6)	15	**43**	(3)	18	**42**	(2)	14	**38**	(3)	21	**45**	(4)	8	**29**	(18)	15	**40**
Average	(13)	20	**47**	(12)	22	**45**	(12)	19	**50**	(12)	27	**51**	(12)	16	**43**	(61)	21	**47**

TABLE G5

Interactions Between Brand Size and Attribute Size - United Kingdom

(Average split sample)

Attribute Size	**Differences: Large - Small Brands**											
	Laundry Detergents		Breakfast Cereals		Soups		Toothpaste		Fizzy S. Drinks		**Av. Product**	
	RL	RR	RL	RR	RL	RR	RL	RR	RL	RR	RL	RR
	%	%	%	%	%	%	%	%	%	%	%	%
High	25	**29**	23	**20**	46	**40**	20	**15**	24	**25**	28	**26**
Medium	15	**22**	22	**21**	45	**36**	17	**18**	28	**31**	25	**26**
Low	15	**17**	22	**23**	29	**35**	16	**18**	12	**17**	19	**22**
Average	18	**23**	22	**21**	40	**37**	18	**17**	21	**24**	24	**24**

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