

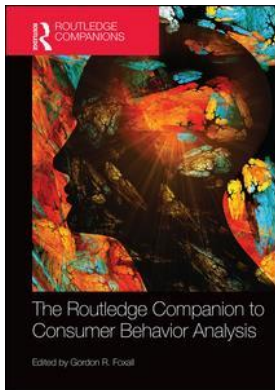
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## The Routledge Companion to Consumer Behavior Analysis

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### Consumer behavior analysis comes of age

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# Part I

## Introduction

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# Consumer behavior analysis comes of age

Gordon R. Foxall

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## Consumer behavior analysis

Consumer behavior analysis combines behavioral psychology, behavioral economics, and marketing science to increase understanding of the behavior of consumers. Its principal focus has until now been on consumer behavior in affluent, marketing-oriented economies but there is no inherent reason why it should not concern itself with the study of consumption in any context. It has also tended toward the analysis of human economic behavior in natural settings, though this is far from inimical to experimental analyses which are in fact essential to the evaluation of the approach. In this chapter, I should like to introduce the research program that stems from consumer behavior analysis, describe its central model, and discuss its evaluation through empirical research, and the applications and interpretations to which it has led.

A primary objective of the *Consumer Behavior Analysis Research Program* (Foxall, 2001, 2002) has been to ascertain the contribution that behavioral psychology, also known as behavior analysis, behaviorology, and radical behaviorism, can make to the study of consumer choice (Foxall, 1994, 1998). A second objective, equally important, has been to discover the “bounds of behaviorism” as a means of explicating consumer choice, the point, if any, at which a behaviorist explanation breaks down, and therefore the point at which we have to resort to intentional, including cognitive, explanation. The first endeavor in either case has been the development of a behaviorist model of consumer choice and its testing, to destruction if necessary, in the process of defining and determining the role of behaviorism in making consumer choice more intelligible. The second of these objectives, the development of an intentional model of consumer choice, has been the subject of other works (Foxall, 2004, 2007a, in preparation). It is the first stage in the research program, the generation and evaluation of the *Behavioral Perspective Model of consumer choice* (BPM; Foxall, 1990/2004), with which this volume is predominantly concerned.

The current chapter presents the behaviorist depiction of consumer choice, the BPM, that is the primary vehicle for the intellectual inquiry I have briefly described, and describes the scope of the research that has been concerned to test it and to establish the behaviorist explanation of consumer choice. In addition, the chapter introduces the chapters that follow, which provide state-of-the-art discussions of the most recent research. This research has two interconnected strands: behavioral-economic investigations of consumer choice, and interpretive analyses of complex consumer behavior that is not directly amenable to experimental or

correlational research. While some of the chapters involve both facets of the research program, Parts II and III of the volume comprise contributions that, for the most part, deal respectively with these themes.

## The Behavioral Perspective Model

Consumer behavior is influenced by both the economic and technical properties of goods on one hand and the social meaning of acquiring, owning, and using them on the other. People drive cars to get around *and* to be seen getting around, wear clothes for protection from the elements *and* to signal to everyone how well they are doing as earners and consumers, adorn themselves with jewelry *not only* to impress their fellows or fit in with social expectations *but also* to raise or confirm their own self-esteem. To the extent that consumption is influenced by consequences such as these, it is operant; to the extent that it reflects both the functional and the social, it is under the influence of a complex of utilitarian and informational reinforcers. Businesses meet these consumer wants by offering marketing mixes that stress product attributes of both kinds, advertising and distribution channels that complement and enhance them, and price levels that are consonant with both the technical-economic purposes and the social-psychological meanings that the resulting brands address. Both sources of reinforcement must be included in a behavior-analytic model of consumer choice. So must the punishing consequences associated with each, for every economic transaction meets with aversive outcomes as well as those that reward. These consequential causes of behavior are depicted on the right-hand side of the BPM (Figure 1.1).

The BPM is essentially an elaboration of the “three-term contingency” that is the basic explanatory device of operant behaviorism:

$$S^D \rightarrow R \rightarrow S^r$$

in which a discriminative stimulus,  $S^D$ , is an element of the environment in the presence of which a response,  $R$ , has been rewarded by the appearance of another environmental element,  $S^r$ , which because of its “strengthening” effect on the behavior is known as a reinforcer.

### *Behavior setting scope*

The consumer behavior setting comprises the stimuli that set the occasion for these causal consequences should particular acts of purchase and consumption be enacted. The consumer behavior setting is composed of stimuli that signal the outcomes of behavior – the availability of particular brands, for instance, within a supermarket – and stimuli that motivate the behavior – say, a point-of-sale advertisement that emphasizes the unique taste or value-for-money that buying the item will generate. The stimuli that compose the consumer behavior setting are, first, *discriminative stimuli*, elements of the environment in the presence of which the individual discriminates behaviorally by performing only those behaviors that have been previously reinforced in similar circumstances; and, second, *motivating operations*, aspects of the environment that enhance the value of a reinforcer. For instance, while the wording of an advertisement for a washing powder that promises “Our brand produces whiter clothes!” may be a discriminative stimulus for buying this product, the accompanying picture of a child wearing pristine, clean clothes might enhance the efficacy of the reinforcer if this symbol has previously been associated with sound parenting: i.e., it acts as a motivating operation (Fagerström et al., 2010).

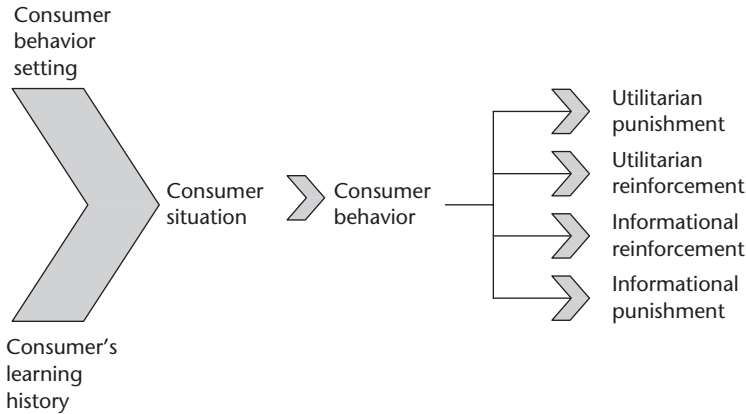


Figure 1.1 Summative Behavioral Perspective Model

Note that the essence of the model is the *consumer situation* → *consumer behavior* link. At the initiation of any particular instance of consumer behavior the only relevant behavioral consequences (reinforcement and punishment) are those that have occurred in the past when similar behaviors were enacted within similar situations. These are now embedded in the consumer's learning history and the consumer behavior setting (comprising discriminative stimuli and motivating operations), the interaction of which comprises the consumer situation

Motivating operations are, like discriminative stimuli, pre-behavioral stimuli under the control of which behavior may fall: specifically, a motivating operation enhances the relationship between a response and its reinforcing consequences (Michael, 1993). Motivating operations have been discussed in the literature of consumer behavior analysis by Fagerström, (2010; see also Fagerström et al., 2010; Fagerström et al., 2011). Sigurdsson et al. (2013) integrate motivating operations with utilitarian and informational reinforcement in an examination of the appropriateness of the BPM to managerial decision-making in e-mail marketing. The addition of this source of stimulation expands the three-term to the four-term (and, indeed, the *n*-term) contingency (Sidman, 1994).

The *scope* of the consumer behavior setting is of prime importance in gauging its likely influence on consumer choice (Schwarz & Lacey, 1988). Relatively *open* settings permit a wider range of behaviors to be enacted – they offer more choices – than relatively *closed* settings in which just one or a few behaviors are possible. Consumer behavior settings can be described on a continuum from relatively open to relatively closed. This conceptualization is especially relevant to the study of consumer behavior, and particularly, retail research. Generally, though not inevitably, in the relatively closed setting, persons other than the consumer arrange the discriminative stimuli that compose the setting in a way that compels conformity to the desired behavior. The open setting, however, is marked by a relative absence of physical, social, and verbal pressures to conform to a pattern of activity that is determined by others (what ecological psychologists call a behavior program; see Schoggen, 1989); it is comparatively free of constraints on the consumer, who, thus, has an increased range of choices. He or she has some ability to determine personal rules for choosing among the products and brands on offer, which stores to visit, and so on. A typical open setting is represented here, considering there, making a purchase or leaving altogether to find another store, or even giving up on shopping and going home.

In contrast, extremely closed consumer behavior settings are exemplified by the dental surgery or the gymnasium where only one course of action is reinforced and removing oneself from the situation, while not impossible, is fraught with social and, ultimately, health-related costs. Less extreme but still distinctly closed for the consumer behavior context, a bank is usually a physically closed setting, arranged to encourage orderly queuing by customers and to discourage behavior that detracts from the efficient execution of transactions. Social and verbal elements also enter into the closed nature of the setting: the single-file line that leads to the teller window does not encourage conversation, at least not to the point where the business of the bank is likely to be delayed. Social and regulatory aspects of the consumer behavior setting are also apparent in less formal contexts such as having to purchase a birthday gift for a friend, which is closer to the center of the open-closed continuum. The setting is closed insofar as the consumer conforms to social rules that describe moral or material rewards for reciprocity or punishments for ignoring generosity in others, though it has facets of openness stemming from the capacity of friends to depart from social norms or even break the rules on occasion, not only without censure but with a strengthening of the relationship.

### ***Consumer situation***

Also on the left of the BPM shown in Figure 1.1 is the consumer's learning history for this and similar products, what he or she has done in the past, and the reinforcing and punishing outcomes this has had. The learning history primes the discriminative stimuli ( $S^D$ ) and motivating operations (MO) that make up the consumer behavior setting and evokes the behavior that will generate or avoid the consequences on offer.

The term "contingencies of reinforcement" refers to the setting in which behavior occurs, the behavior itself, the rewarding and punishing consequences of the behavior, plus the relationships among them. These determine the *rate* at which the behavior is performed, the basic datum of behavior analysis (Skinner, 1950, 1963): for now it is enough to note that rewards or reinforcing consequences have the effect of increasing the rate at which it occurs while punishers reduce it.

It is the consumer situation that results from the interaction of learning history and consumer behavior setting that is the immediate precursor of consumer behavior. The consumer situation induces or inhibits particular consumer behaviors depending on whether the consumer behavior analysis is relatively open or relatively closed. In this non-intentional construal of the BPM, the consumer situation thus amounts to the scope of the setting, i.e., its degree of openness or closedness, weighted by the individual's consumption history, which directly impacts upon the probability that particular consumer behaviors will occur.

### ***Patterns of reinforcement***

The stimuli that comprise the consumer behavior setting and that enter into the consumer situation prompt the consumer to discriminate his or her behavior by purchasing or consuming certain products and services, marques, and brands rather than others. The behaviors performed are those that have been reinforced in the past, and the discriminative stimuli, motivating operations, and learning history that interact to form the consumer situation are associated with utilitarian or functional and informational or symbolic reinforcements that will result from current behaviors. These consequences of behavior, shown on the right-hand side of the model in Figure 1.1, may be positive or aversive, reinforcing or punishing in their effects on future consumer choice. Utilitarian reinforcers, which are mediated by the products themselves,

	Low utilitarian reinforcement	High utilitarian reinforcement
Low informational reinforcement	MAINTENANCE	HEDONISM
High informational reinforcement	ACCUMULATION	ACCOMPLISHMENT

Figure 1.2 Patterns of reinforcement and operant classes of consumer behavior

Source: Foxall, G. R. (2010). *Interpreting Consumer Choice: The Behavioral Perspective Model*. New York: Routledge

are associated with the technical and operational qualities of the item bought and consumed. Informational reinforcers are socially mediated, however, and consist in performance feedback on the consumer behavior in question or other behaviors instrumental in making it possible. Almost any car will provide the utilitarian benefits of “getting from A to B.” But a Porsche usually delivers the performance feedback that comes from recognition of the owner’s occupational status, social position, and other sources of honor and prestige. Like other socially constructed, symbolic outcomes of behavior, informational reinforcers are relative to the values of the community: in a social system conscious of CO<sub>2</sub> emission or fossil fuel consumption, a prestige car might not confer the positive social feedback just assumed.

Consumers acquire combinations of utilitarian and informational benefits in the course of buying and using products, represented as a *pattern* of low/high utilitarian reinforcement and low/high informational reinforcement. The idea of a pattern of reinforcement replaces that of a schedule of reinforcement, something applicable more to the precision of the laboratory than interpreting complex choices in the marketplace. Defined in terms of a pattern of reinforcement, consumer behavior falls into one of four operant classes: maintenance, accumulation, hedonism, and accomplishment (Figure 1.2).

### **Patterns of consumer behavior**

The BPM contingency matrix (Figure 1.3) comprises eight distinct categories of contingencies, the outcome of combining consumer behavior setting scope and reinforcement patterns (Foxall, 2010). The following chapters reveal that the generic BPM shown in Figure 1.3 can be construed in both extensional and intentional forms and that these offer different levels of explanation of consumer behavior. Thus far, empirical work has emphasized the extensional construal of the model; this chapter argues for an intentional construal based on research into the role of emotionality in consumer choice.

## **Behavioral economics meets marketing science**

### **Summary of research**

A large volume of empirical research which has had the dual purposes of testing the predictive capacity of the BPM and of elucidating the nature of consumer choice by viewing it through the lens of behavior analysis has been inspired by the model.<sup>1</sup>

This work has increasingly incorporated techniques pioneered in behavior analysis and, especially, behavioral economics (Hursh, 1984; Hursh & Roma, 2015; see also Foxall, 2015a) to investigate behavior in the non-intentional terms that are the hallmark of operant psychology



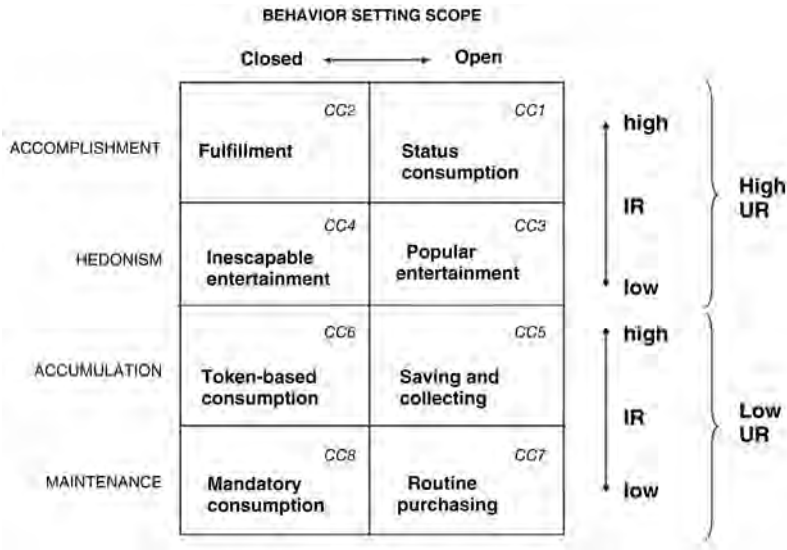


Figure 1.3 The BPM contingency matrix

CC = contingency category, each of which locates a class of consumer situations defined functionally in terms of a unique combination of pattern of reinforcement and consumer behavior setting scope

Source: Foxall, G. R. (2010). *Interpreting Consumer Choice: The Behavioral Perspective Model*. New York: Routledge. Reproduced by permission

and experimental economics. Defining economic choice as the allocation of behavior within a framework of costs and benefits (Staddon, 1980), this perspective adopted matching and maximization techniques to the study of consumers' brand and product choices (Fagerström et al., 2011; Foxall, 1999a; Foxall & James, 2002, 2003; Foxall & Schrezenmaier, 2003; Wells & Foxall, 2013; see also Curry et al., 2010).

Experimental research based on testing predictions and applications suggested by the BPM has involved both food retailing and offline and online marketing (Sigurdsson et al., 2011; Sigurdsson et al., 2013; Sigurdsson et al., 2015; see also Foxall & Sigurdsson, 2013). An important facet of this research has been the use of field experiments, typically in retail organizations, which allow the full force of the marketing mix to be investigated in its effect on consumer behavior. Sigurdsson et al. (2013), for instance, tested the BPM in the context of Norwegian retailing with an econometric analysis of the effects of the pattern of reinforcement specified in the model. The predictability of each individual predictor (utilitarian, informational, and pricing) was tested and compared with multiple regression models, based on all three predictors, and to previous findings. This was done based on the analysis of buying behavior of brands for ten different product categories. The results revealed that informational level was the best individual predictor for consumer buying behavior, but the combination of the three behavioral consequential predictors together (relying on the BPM) tended to give the best prediction.

*Matching and maximization.* This translational research program has demonstrated that the matching phenomena explored by Herrnstein (1961, 1970, 1997) provide insights into the psychological measures of standard microeconomic variables such as product and brand substitutability, complementarity, and independence (Foxall et al., 2010; Romero et al., 2006) which also serve to define product categories, sub-categories, and brands (Foxall et al., 2010). In a

significant development, Oliveira-Castro et al. (2010) integrated matching with the BPM variables of utilitarian and informational reinforcement as well as price.

*Price elasticity of demand.* Further behavioral economics research has involved the operational measurement of utilitarian and informational reinforcement and the estimation of price elasticity of demand coefficients for brands that feature varying combinations of these elements of reward (Foxall et al., 2004; Foxall et al., 2007; Foxall et al., 2010; Oliveira-Castro et al., 2006; Oliveira-Castro et al., 2008; Oliveira-Castro et al., 2008). This work underpins the BPM approach by showing that consumer demand is a function not only of price but also of the pattern of reinforcement delivered by goods. Of particular interest is the empirical research which demonstrates that changes in consumer behavior, measured as elasticity of demand for fast-moving nondurables, is a function of the pattern of utilitarian and informational reinforcement (Foxall et al., 2004; Foxall et al., 2013; Oliveira-Castro et al., 2011; Yan et al., 2012a, b).

*Consumers' utility functions.* Consumers' utility functions demonstrate that consumers maximize measurable combinations of these goods: Oliveira-Castro et al. (2015) show that consumers maximize selected combinations of utilitarian reinforcement and informational reinforcement in accordance with the following Cobb-Douglas utility function:

$$U(x_1, x_2) = x_1^a, x_2^b \quad (1)$$

where  $U$  is the total amount of utility obtained by consumption of  $x^1$  and  $x^2$ ,  $x_1$  is the quantity of utilitarian reinforcement consumed,  $x_2$  is the quantity of informational reinforcement consumed, and  $a$  and  $b$  are empirically determined parameters such that  $a + b = 1$ . The implication is that consumers maximize the utility that derives from particular combinations of utilitarian and informational reinforcement subject to the constraint imposed by their budget for the goods in question.

The chapters that follow are divided into two sections, *Behavioral economics meets marketing science* and *Behavioral interpretation of consumer choice*. Both of these are concerned with the first of the two issues mentioned in my opening to this chapter: the determination of the contribution of behavior analysis to understanding in consumer research.

## Chapters in Part II: Behavioral economics meets marketing science

The first chapters that form Part II are concerned principally with experimental analyses of consumer choice and they gradually elide with chapters that employ time-series analyses of consumer behavior based on panel data.

### *Chapter 2: Experimental analysis of consumer choice (Fagerström and Sigurdsson)*

This chapter argues that experimental analysis is the most fundamental element in consumer behavior analysis because it links other research with the explanatory basis of natural science. Without an experimental research program to generate and test the ideas on which behavioral explanations and interpretations are founded, consumer behavior analysis might indeed descend into speculation. It is important, however, in the quest to understand consumer behavior in natural settings that consumer behavior analysts work within a progression of experimental styles, from the laboratory to the field. This chapter expands on the nature of experimentation at all these levels, from those of the closed setting of the lab to those that feature more open settings provided by in-store contexts and consumer brand choice.

***Chapter 3: Behavior analysis of in-store consumer behavior (Sigurdsson, Larsen, and Fagerstrøm)***

The authors explore in greater depth the methodologies involved in in-store consumer behavior analysis. The authors show how in-store experimental consumer behavior analysis differs from conventional marketing research, the importance of establishing and maintaining rapport with retailers, and the relevance of particular experimental methods to research questions and available retail contexts.

***Chapter 4: Behavior analysis of online consumer behavior (Sigurdsson, Larsen, and Menon)***

This chapter addresses the paucity of studies of online consumer behavior from a behavioral point of view which is anomalous given the vast opportunities this area of research offers for experimental work in the operant tradition. The chapter discusses the methods in use for research into online consumer behavior, comparing and contrasting it with more mainstream behavior analytical research. Online studies of consumer behavior form an intermediate position between traditional laboratory investigations and field studies: the settings are relatively closed, an experimental research design is readily achieved, and yet the results provide a rigorous examination of consumer behavior as the outcome of the entire marketing mix which is normally available only in more open retail settings.

***Chapter 5: Equivalence classes and preferences in consumer choice (Arntzen, Fagerstrøm, and Foxall)***

This chapter extends research on the phenomenon of stimulus equivalence and transfer of function to the realm of consumer and marketing research. Individuals who are trained to respond with stimulus B when stimulus A is presented, and then with stimulus C when A is presented, show a tendency to respond with C when presented with B. This emergent relationship has never been trained: the individual's selection of C has never been reinforced in the presence of B. Research on equivalence class formation and transfer of function has not yet been conducted within the context of consumer behavior and marketing communication. This chapter indicates, on the basis of experimental analysis, that this is a promising line of investigation for consumer behavior analysts and that it has important implications for marketing research, brand extension, and new product development.

***Chapter 6: Experimental analyses of choice and matching (Sigurdsson and Foxall)***

The possibility of applying microeconomic analysis in the operant-psychological study of behavior arises from the fact that both disciplines involve the allocation of scarce resources to competing ends (Foxall & Sigurdsson, 2013). The matching paradigm, inaugurated by Herrnstein (1997), is based on the finding that when faced with alternative behaviors that have different payoffs, both nonhuman and human animals allocate their available responses in the same proportion that marks the reinforcements received from each choice. This behavioral outcome, known as matching, has important parallels with the ways in which consumers allocate their brand purchases over a series of shopping trips. This chapter traces the evolution of matching research from animals behaving in the closed confines of the operant chamber to

consumer choice in the open settings of the modern marketplace. It also marks the range of methodologies available and indeed necessary for such research, from experimental studies to correlational studies based on panel data, a theme that is characteristic of several of the ensuing chapters in Part II.

### ***Chapter 7: Consumer store choice (Bui Huynh and Foxall)***

This chapter builds on the large volume of research into matching and maximizing in the purchasing of nondurables by extending the work into the field of retail choice. It makes use of the concept of the *scope of the consumer behavior setting* by comparing consumption patterns for large supermarkets (representing *open* settings on the basis of their having a wide range of products and brands) with those for smaller convenience stores (representing relatively *closed* settings because of their restricted ranges). The findings are consonant with earlier research on product and brand matching, showing that consumers' store patronage exhibits amount matching, upward sloping relative demand curves, and a tendency toward maximization.

### ***Chapter 8: Dimensions of demand elasticity (Oliveira-Castro and Foxall)***

A major impetus for the matching research we have pursued has been the identification of the effects of the market's mix (variously represented by differences in utilitarian and informational reinforcement, and in price) on the quantities of products and brands purchased by consumers. Research on aggregate patterns of consumer brand choice had previously assumed that the price differentials exhibited by competing brands would have little effect, but the matching research showed this emphatically not to be the case. This chapter develops this theme by examining research on the price elasticity of demand for consumer goods. It summarizes the results of the research on price elasticity inspired by the BPM: that consumers buy larger quantities when paying prices that are lower, both within and across brands; that consumers who buy larger quantities tend to pay lower prices, both within and across brands; that purchase quantities vary with the magnitude of informational and utilitarian benefits provided by the brands; and that intra-brand price variations, especially those associated with consumers switching across package sizes, account for the largest portion of changes in quantity bought across shopping occasions. The chapter also describes the application of a behavior-economic approach to the conceptualization of demand elasticity in terms of essential value to consumer behavior for nondurables.

### ***Chapter 9: Essential value in the BPM (Yan and Foxall)***

This chapter develops further the idea of essential value in the context of the BPM by showing how the patterns of contingencies presented by the model impact the behavior of consumers relative to changes in price. Utilitarian and informational reinforcement, and the open-closed scope of the consumer behavior setting, all influence consumption when price changes. The studies on which this chapter is based have extended research on essential value to human consumers of nondurables in natural settings in the face of competing brands that differ in terms of the pattern of reinforcement they offer. The inclusion of informational reinforcement as well as utilitarian benefits introduces a social dimension to the analysis of essential value, while the comparison of open and closed consumer behavior settings (represented by supermarkets and convenience stores, respectively) demonstrates the centrality of behavior setting scope to any

study of consumer behavior. The results are highly confirmatory of the BPM variables, showing their relevance to the study of human consumer behavior in natural settings.

### ***Chapter 10: Triple jeopardy in a behavioral perspective (Rogers, Morgan, and Foxall)***

The phenomenon of double jeopardy (DJ) in the marketing context reflects the fact that small brands not only attract fewer consumers than larger ones but that those scarcer customers buy less of the brand. This finding has implications for the notion of brand equity, as a measure of brand performance, of which it is potentially undermining. This chapter reveals that the utilitarian and informational reinforcement provided by brands enters significantly into their equity, over and above the effects of price elasticity of demand and DJ. A conclusion, which helps reconcile the concepts of DJ and brand equity, is that the BPM-defined pattern of reinforcement is the basis of a triple jeopardy effect; brands with larger market shares prosper by providing increased utilitarian and informational benefit compared with brands with smaller market shares (over and above the effects of price or DJ). The reconciliation is suggested by the view that this triple jeopardy might constitute a source of brand equity.

### ***Chapter 11: Consumer purchase and brand performance (Porto and Oliveira-Castro)***

This chapter draws attention to the difficulties of determining how firms' market shares are established. Even though consumers' past behavior and the firm's use of the marketing mix explain sales to a large degree, there remains the task of understanding market shares in a competitive marketplace. The authors describe two experiments designed to elucidate the role played by these behavioral antecedents, the interactive effect of which represents the consumer situation, the interaction of learning history and current setting stimuli. The initial experiment, which had the advantage of taking place in a natural environment, showed the importance of the magnitude of the pattern of reinforcement in influencing sales. In the second experiment, the proposition was tested that this consumer situation would forecast day-to-day sales. That it did so enables the authors to argue that the mechanisms that comprise the consumer situation are crucial to the definition of brand market structure.

### ***Chapter 12: What do consumers maximize? (Oliveira-Castro, Cavalcanti, and Foxall)***

An intriguing possibility is that what consumers maximize is a combination of utilitarian and informational reinforcement. This likelihood is inherent in the original formulation of the BPM, and is supported by research into consumer behavior as matching and maximization, by the research on price elasticity of demand and other behavioral economics work reviewed in this volume, and from the discussions of market structure and brand equity in the preceding two chapters. Yet the evidence from this research, while indicative, does not clinch the matter. The discussion of utility functions in this chapter takes us an important stage further. A utility function embodies the satisfaction gained via consumption as a function of the quantities of the goods consumed. This chapter examines the proposition that what consumers maximize is the quantities of utilitarian and informational reinforcement that they can consume within the limitations of their budgets. The results demonstrate that consumers do maximize utilitarian and informational satisfactions, that each product category exhibits an optimum benefit bundle

that is peculiar to itself, and that individual differences in utility are consistent over time, which suggests that each pattern of consumer satisfaction derives from a specific indifference curve.

### **Chapter 13: The BPM in the Latin-American context (Sandoval-Escobar and Medina)**

Chapter 13 is an account of research testing the BPM which was undertaken in Latin America, notably Colombia. Three areas of study are featured. First are analyses of consumer panel data concerned with inter- and intra-consumer consumption patterns, revealing relations between consumers' matching behavior and the levels of utilitarian and informational reinforcement provided by brands. Second are two panel-data analyses for various product categories, and with a specific focus on "green" or "eco purchase" consumption, and the variables that influence this choice. Finally, the authors undertake a review of the conceptual basis of the BPM. The empirical studies are particularly welcome for their extension of the theme of environmental conservation, which has long been a feature of the Consumer Behavior Analysis Research Program (see, most recently, Foxall, 2015b) to a new context.

### **Behavioral interpretation of consumer choice**

Radical behaviorists have for many years proposed that behavior that lies beyond the confines of an experimental analysis can be the subject of an interpretive analysis in which the principles of behavior established in the laboratory are employed to disambiguate observed environment-behavior relationships (Skinner, 1969). The obvious problem with such an approach is that the contingencies that control the behavior cannot be isolated with the precision that is possible in the experimental space which provides the investigator with considerable capacities to control dependent and independent variables. As Skinner (1957) noted in his interpretive analysis of verbal behavior, one can generate a "plausible" account of complex behavior of this kind, but as an interpretation rather than an explanation such an account would be "merely useful, not true or false" (Skinner, 1988, p. 364). Interpretations of this kind mark an advance on mere speculation conducted in the absence of an underlying experimental analysis. Even though knowledge cannot be gained with the aid of definite means of identifying uncontentiously the stimuli under whose control the behavior in question falls, nor even the behavior itself defined as rigorously as the operant chamber allows, the principles derived from the experimental analysis can be directed toward the purpose of plausibility (Foxall, 1996, pp. 339–345; Lee, 1988).

Unfortunately, neither Skinner nor any other practitioner of behavioral interpretation has specified just what such plausibility consists in. Skinner's own interpretation of verbal behavior has been criticized for its substitution of "vague, analogic guesses" for scientific knowledge (Chomsky, 1959), and for ignoring the empirical knowledge on language generated by other scholars (Staats, 1996). The interpretive account of human verbal behavior provided by Skinner (1957) was therefore largely an extrapolation based on the behavior principles acquired from the animal laboratory, the basic notion of contingency-shaped behavior being a function of discriminative and reinforcing stimuli employed in the control of the limited food-producing behavior of hungry rats and pigeons. I am not here making the widespread criticism of radical behaviorism that it seeks to explain human behavior by experiment results obtained from nonhuman animals, though that view is not without force. Rather, I would point out that very few years after the publication in 1957 of *Verbal Behavior*, on which work had begun three decades earlier, Skinner announced that behavior was not only subject to direct contact with the contingencies of reinforcement: it might also be the outcome of rules (Skinner, 1966). The admission of

rule-governed behavior to the canons of scientific analysis available to behavior analysts reveals the vast limitations of a behavioral interpretation that fails to comprehend the scope of its subject matter. Some greater effort to understand the range of phenomena one is attempting to deal with must surely precede its behavior-analytic interpretation.

The interpretations of complex human behavior provided by Skinner in the last section of his *Science and Human Behavior* (1953) also reveal a somewhat imperialistic approach that is not sufficiently in touch with the details of the behavior they seek to deal with or with the disciplines that got there first. They tend to be vague and lacking in conviction, hardly acknowledging that other intellectual communities had made progress in studying economic behavior, political behavior, religious behavior, and many more aspects of human activity, contributions to these spheres that must be counted as vast by comparison with those of behavior analysts.

The problem of behavioral interpretation has been at the heart of the Consumer Behavior Analysis Research Program since its inception and the BPM was envisioned initially as primarily an interpretive tool (Foxall, 1990/2004, 1996). The initial phase of the research program was involved with the generation of behaviorist interpretations of such aspects of consumer behavior as attitude-behavior relationships (Foxall, 1983), the adoption and diffusion of innovations (Foxall, 1986), environmental conservation (Foxall, 1984), purchase and consumption (Foxall, 1990/2004), saving and domestic asset management (Foxall, 1994), consumers' emotional reactions to consumer environments (Foxall, 1997), and marketing management (Foxall, 1999b). All of these continue to be foci of interpretive research. However, just as important as the execution of a program of interpretive research aimed at elucidating complex consumer behavior is the accompanying refinement of the nature of behavioral interpretation itself. Three volumes have been devoted to the nature of behaviorist interpretation: *Consumers in Context: The BPM Research Program* (Foxall, 1996) describes the origins of the research program and the early approaches to interpretation; *Context and Cognition: Interpreting Complex Behavior* (Foxall, 2004) deals with general issues arising from the need to interpret in behavior analysis; and *Interpreting Consumer Choice* (Foxall, 2010) discusses the way in which the nature of behaviorist interpretation is relevant to consumer behavior analysis.

What seems essential to the behavioral interpretation of complex behavior is the generation of models of the focal human activity in terms that span the fundamentals of behavior analysis (such as the three-term contingency) and the disciplines primarily concerned with the study of that activity. In the case of the behavior-analytic interpretation of consumer behavior this would entail a model that combined the conceptual and methodological purviews of behavior analysis on the one hand and economics and marketing on the other. The aim of this integration is to increase investigators' awareness of any elaboration required for an operant interpretation that is not apparent from consideration of the three-term contingency itself. The development in due course of the BPM made clear that human economic behavior is a function of both utilitarian and informational reinforcement, for instance; that emphasis must be placed on the interaction of the consumer's learning history and the current consumer behavior setting he/she is facing to form the consumer situation; and the role of the consumer behavior setting itself as the repository of a field of discriminative stimuli and motivating operations rather than the simpler configuration of antecedent stimuli that are manipulable within the operant laboratory. The *scope* of the consumer behavior setting emerges also as a determinant of consumer behavior, as do the eight categories of contingency that are uniquely associated with particular patterns of consumer behavior. The BPM appears to be the sort of model of the middle range required to make behavioral interpretation an activity that is grounded in both an underlying methodology and explanation, and a level of understanding of consumer behavior that is in touch with its discernable characteristics.

## **Chapters in Part III: Behavioral interpretation of consumer choice**

The chapters that form Part III are concerned with the critical exploration of these theoretical and methodological extensions of behavior analysis in the field of interpretive consumer choice.

### ***Chapter 14: Gambling behavior (Dixon and Belisle)***

Dixon and Belisle provide a general context for the study of gambling in the context of behavior analysis, drawing on a large volume of experimental and survey evidence on disordered gambling. Their review is of interest for its coverage not only of gamblers' public behaviors like buying a scratch ticket or pressing a spin button, but also of their private events such as neurochemical changes and covert verbal behavior. It also brings the analysis of gambling into contact with the understanding of the contextual nature of gambling made available by Relational Frame Theory (RFT; Hayes et al., 2001). RFT builds on the phenomenon of stimulus equivalence (Chapter 5), and offers a unique approach to the analysis of disordered gambling behavior, decision-making, and choice, which has far-reaching implications for consumer behavior analysis in general.

### ***Chapter 15: When loss rewards (Foxall and Sigurdsson)***

A particular aspect of gambling is the subject of this chapter, namely the tendency of a "near-miss" in slot machine gambling (scoring, say, two matching symbols when three are required for a win) to motivate rather than suppress further play. This contradicts orthodox reinforcement theory where failure punishes behavior. This chapter comprises a critical review which examines neurophysiological correlates (and perhaps causes) of this effect, revealing that near-misses recruit similar reward-oriented brain regions to those implicated in wins. Two additional research traditions complicate this picture. So-called cognitive distortions that may also motivate play following the experience of a near-miss are also reviewed, as is the possibility that contextual factors, inherent in the programming of the machines and the physical arrangement of gambling milieu, modify responses to near-miss outcomes. A recurring theme in all research traditions is the role of a possible source of reinforcement separate from the effect of monetary wins and a potential link between this secondary reinforcement and arousal in players. The authors argue that informational reinforcement can account well for the near-miss effect as a result of the sounds and sights generated by slot machines in the wake of gambling outcomes that apparently come close to genuine successes.

### ***Chapter 16: A functional analysis of corruption from a behavioral-economic perspective (Luque Carreiro and Oliveira-Castro)***

Luque Carreiro and Oliveira-Castro argue that the capacity of the BPM to explicate human behavior transcends its original application to consumer behavior. Their chosen vehicle to illustrate this is the interrelationship of officials and bribers in the course of corrupt behavior. They discuss models of crime and corruption developed by important economic theorists, and then suggest a model of corruption on the basis of typical cases of these phenomena. They go on to describe corruption in terms of the BPM approach, showing the multiple consequences of corrupt behavior. Hence, contingencies are analyzed in terms of their effects on operant classes of behavior, including the behavior setting and learning history as antecedents, and the utilitarian and informational consequences of the crime, in a model that permits the systemic analysis of corruption.



### ***Chapter 17: From consumer response to corporate response (Vella)***

It is comparatively rare in the marketing literature for explanations of consumer behavior to be conducted in similar terms to explanations of marketing management, yet there ought to be an intellectual context in which their interdependence is more readily understood. The BPM and the model of the *marketing firm* that follows from it (Foxall, 1999b) provide this continuity of explanation. Previous empirical research (Vella & Foxall, 2011) establishes that the explanatory variables proposed by the Marketing Firm Model can be operationalized for the interpretation of corporate behavior. The idea of bilateral contingency between the firm and its customers is particularly valuable in analyzing corporate behavior on the basis of its effects on customer choice (Foxall, 2014, 2015b). This chapter suggests how further refinement of the variables might proceed in light of the requirements of further research on the firm.

If the process of behavioral interpretation is to remain a reflexive activity, maintaining a spirit of self-awareness and self-criticism to avoid the stagnation that can accrue when alternative perspectives are not taken into consideration, it is important that it be viewed in an informed but critical manner by practitioners of a variety of approaches, both within and beyond consumer behavior analysis. The remaining chapters were commissioned with this in mind.

### ***Chapter 18: Motivating operations and consumer choice (Fagerstrøm and Arntzen)***

Critics of behavior analysis frequently seem to assume that it is a system that was fixed in the mid-twentieth century, since when it has failed to show any sign of innovativeness. The huge contributions made by the analysis of verbal behavior in the last twenty years give the lie to this, as does the contribution of operant behavioral economics. Some developments may be smaller but they too are significant. The idea of motivating operations (Michael, 1993) drew attention to the capacity of some stimuli to alter the reinforcing effect of another stimulus event, and/or to influence the emission of the behavior related to that event. As such, motivating operations form a significant element of the consumer situation. The concept has numerous ramifications for the analysis of consumer choice and marketing activity, which this chapter discusses on the basis of empirical evidence.

### ***Chapter 19: Consumers as inforagers (Kim and Hantula)***

This chapter is based on the observation that consumers do not acquire goods alone: they search for and acquire information, too. That is, consumers can be regarded as “inforagers.” As such, their relationships with their environments may be represented in Darwinian terms as “ecologically rational.” Such a perspective can compensate for the limitations of consumer information-processing models based on rational choice assumptions. The implication is that “information is a communication between minds and immediate environments from an organismic perspective.” Consumer information search can be depicted as foraging, and the process can then be understood in terms of biology and evolution.

### ***Chapter 20: Decision-“making” or how decisions emerge in a cyclic automatic process, parsimoniously modulated by reason (Marques dos Santos and Moutinho)***

The biological theme is continued in this chapter whose authors state, refreshingly, that “We just do not believe in Psychology apart from Biology.” They contrast the “given view” which assumes decision-making to be a straightforward procedure, based on the simplifying notion

that decision-makers take informational outputs and transform them into behavioral outputs. But this is not the sole possibility. Marques dos Santos and Moutinho argue that the idea of decision-making is biased in its assumption that reasoning is inevitably involved. The model they introduce in place of the familiar computer metaphor eschews systematic reasoning but yields nevertheless decisions and actions that can be described as purposeful. This model is a hybrid of the S–R (stimulus–response) and the S–O–R (stimulus–organism–response) theories, which they discuss in the light of empirical research findings, notably in neuroscience, before producing a further theory through the incorporation of the BPM, with which they argue their original hybrid has overlapping elements.

### ***Chapter 21: Consumer behavior analysis (Desmond)***

In a wide-ranging chapter, John Desmond looks at consumer behavior analysis from the viewpoint of psychoanalysis, a psychological perspective which he has successfully exploited in furthering the understanding of consumer behavior. Arguing that the behaviorist and psychoanalytical perspectives on consumer behavior can act as foils not only to one another but also to cognitive psychology, he reminds us that these disciplines offer linkages to the evolutionary- and neuro-sciences. The foils they offer to each other are basic components of the clash of paradigms that some philosophers see as essential to scientific progress: behaviorism repudiates mentalism but psychoanalysis takes psychic causation as foundational; behaviorism explains behavior in terms of situational determinants; while, for the psychoanalyst, subjective experience is all-important. This chapter is an erudite and humorous contribution to the debate concerning the relative contributions that the psychologies can make to understanding the balance between biological, contextual, and psychic influences on behavior.

The remaining chapters, even where they have quantitative aspects, are primarily concerned with qualitative interpretation of consumer behavior.

### ***Chapter 22: Ethnographical interpretation of consumer behavior (Hackett)***

Hackett proposes using the BPM alongside consumer ethnography, and develops a mapping sentence (MS) framework, based on the statistical technique of facet analysis, for combining them. The proposed MS offers one possible way of conducting, analyzing, and bringing together research on consumer choice that uses the insights provided by the BPM framework for understanding consumer behavior. The MS offers a unique conjoint understanding of how elements of the BPM are related to aspects of ethnographic consumer research. The chapter defines and explains examples of consumer ethnography to demonstrate that ethnography used together with the BPM produces information that allows both behavioral understanding and prediction.

The next two chapters are concerned with the exploration of an approach to consumer behavior analysis that involves intentional interpretation along lines suggested by Foxall (2004, 2007a). Although this has not been a major theme of this volume, the development, where it is required for purposes of explanation, of an intentional interpretation of consumer choice is a major theme of consumer behavior analysis (Foxall, 2013). These chapters are included to elaborate the contribution of intentional behaviorism (Foxall, 2007b, 2007c, 2008) to consumer research.

### ***Chapter 23: Collective intentionality and symbolic reinforcement (Laparojkit and Foxall)***

The advent of internet-based consumer clubs provides a unique environment in which to examine the role of symbolic stimuli (both antecedent and consequential) in the analysis of consumer

choice. Comparatively little impetus for such research derives from the behavioral aspects of car consumer clubs, the reinforcers they offer, and the effects of the consumer situations they provide on consumer behavior. The study we describe aimed to establish whether, and if so how, the rewards received from brand community participation account for members' sustaining participation in virtual brand communities. This chapter shows how the rewards of participation in car consumer communities can be identified and how they affect members' behavior. The empirical investigation we describe is based on the intentional model of consumer choice (Foxall, 2013) and appeals to Searle's (2010) conception of *collective intentionality* as a principal means of interpreting club membership over time.

### **Chapter 24: Consumer confusion (Anninou, Pallister, and Foxall)**

The complexity of modern shopping environments means that consumers are more frequently than ever afflicted by anomie and confusion. The research described in this chapter is concerned with understanding consumer confusion in terms of the subjective experience of buyers: their desires and beliefs as well as their individual consciousness of how it feels to be shopping in a puzzling context. Anomie is a lack of rules; hence, the analysis of choice in terms of rule-governed behavior is inadequate. The extensional model of consumer choice (now known as BPM-E) is useful but limited in this regard, as is orthodox behavior analysis in general: the language of explanation must be enlarged to include intentional terms. The resulting intentional model of consumer choice (BPM-I) is then available to make sense of the customer's experience.

The concluding chapter seeks to integrate the qualitative approaches to the interpretation of consumer choice that have characterized some of the preceding chapters with the behaviorist agenda that characterizes the BPM. Dennett's heterophenomenology suggests a methodology for the incorporation of consciousness into a framework of analysis that explains behavior by means of its situation (including the current stimulus field and the consumer's history) and its potential pattern of reinforcement.

### **Chapter 25: Consumer heterophenomenology (Foxall)**

This chapter considers a novel route to qualitative research into consumer behavior that derives from a suggestion made by Dennett (1991) for obtaining verbal reports that relate to subjective consciousness, capturing first-personal experience (which is not scientifically admissible) into third-personal texts that can be used in scientific investigations. A serious problem in the study of consciousness is that the third-personal stance taken by science cannot easily accommodate the first-personal phenomena in which the subjective, possibly ineffable, experience of personal consciousness consists. Dennett proposes *heterophenomenology* as a means of approaching first-personal experience through transcribing verbal reports of thoughts and feelings into texts which can be analyzed by investigators. The chapter proposes that this methodology might be employed in Consumer Behavior Analysis, and suggests that the Behavioral Perspective Model of consumer choice might aid the interpretation of heterophenomenological texts.

### **Note**

1 Research is very actively underway in each of the areas mentioned and others. Several special issues of academic journals in behavior analysis, economic psychology, retailing and marketing management, and managerial economics have been devoted to this research: see the *Journal of Economic Psychology* (volume 24, numbers 5 and 6, 2003), the *Journal of Organizational Behavior Management* (volume 31, numbers 2 and

3, 2010), the *Service Industries Journal* (volume 31, number 11, 2011), and *Managerial and Decision Economics* (2015, in press).

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