PREFACE TO JEMS (INTERNET) EDITION OF REPEAT BUYING.

This presentation of Repeat Buying reproduces the Second Edition: Ehrenberg, A. S. C, (1972, Second edition 1988), Repeat Buying, published Charles Griffin and Company, London and Oxford University Press, New York.

The development of the models described in Repeat Buying started some forty years ago with the study of consumer panel data for particular brands showing the number of panel members making 1 or 2 or 3 and so on purchases in a year. The Negative Binomial Distribution (NBD) was found to fit this distribution well, and also that for product categories. It fitted also the distributions over time periods of other lengths.

Over some years it was realised that the average number of purchases (as opposed to volume or value) over a period was a possible measure of loyalty, and then it was observed that these averages tended to be much the same for every brand in a product category, and that this was true for many categories. This observation now seems the result of an obvious analysis, but at the time was not obvious: indeed, to many it is still not an accepted conclusion. Only for large brands over long time periods when penetration approaches 100 per cent are differences in sales volume (as measured by the number of purchases) accounted for by variations in the rate of sale.

The necessary relationship between penetration and rate of sale for a particular brand, an effect described as Double Jeopardy, was first described by the approximate formula $w(1-b)$ = a constant for the product field, where w is the number of purchases per buyer of a brand over a given period, and b is the proportion of the population purchasing that brand in the same period.

These relations suggested a model with realistic assumptions about:

(1) Individuals' purchasing rates for the product category, the distribution of purchasing rates of different individuals
(2) Individuals' choices of brand on particular purchasing occasions according to a set of probabilities for each brand (a brand portfolio for each individual consumer)
(3) A particular distribution of these portfolios between consumers.

The NBD-Dirichlet distribution, as described in Chapter 13 provides such a model, with the properties subsuming the earlier partial models LSD and NBD.

Since 1984 the Dirichlet model has been found to apply to many product categories in many parts of the world (insert table). The model has been found surprisingly applicable to non-stationary and segmented markets. New computing methods and software have made the fitting of the model easy, although the simpler approximations described in the book remain useful.

The book itself now stands primarily as an historical record. The Logarithmic Series Distribution (LSD) model of Chapter 8 now in retrospect appears to be only an approximation for the more appropriate model arising from the NBD-Dirichlet Distribution described in Chapter 13, and modern computing renders its use now not particularly convenient. The NBD-Dirichlet Distribution also implies that the Negative Binomial Distribution (NBD) described in Chapter 7 is the way the total number of purchases in the product category is distributed. The specimen calculations set out in Appendix C now appear unrealistic, and there are some errors in the computations shown. Appendix C still shows however the logic of the fitting process.

The end paper of the original edition bore the statement, repeated in the second edition:

> *Of the thousand and one variables which might affect buyer behaviour, it is found that nine hundred and ninety-nine usually do not matter. Many aspects of buyer behaviour can be predicted simply from the penetration and the average purchase frequency of the item, and even these two variables are interrelated.*

Over the years this assertion has been shown time and time again to be true. Were the rest of the book to be lost, this statement would still contain the essence of the book.

I write as a long-time colleague and privileged friend of the author.

John Bound.
South Bank University, London, October 2002.

May 3, 2000 revised Oct 31, 2002.