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BOOK REVIEW: THOUGHTS AND DATA BY FERENC MOKSONY

When turning the pages of Ferenc Moksony's work, the reader holds a methodological book in his hands which departs from the traditional genre. This book is innovative for several reasons. Maybe its most important feature is that it is not boring. Suspense dominates its pages which is appreciable and palpable even for young readers who were raised on crime stories - the suspense of consequent and logical thinking. Through discussing common and simple problems the author describes how inadequate and useless experience in mathematical statistics is if it does not go along with a knowledge of model-construction rules and a critical attitude, which facilitates discovery.

The in-depth study of this book can provide training for prospective researchers (or those who currently conduct empirical social research with certain methodological hiatuses). The questions which organise the chapters require independent thinking, and the exercises at the end of each chapter simulate the problems which can emerge in "live" situations and efficiently develop the critical potential in the reader.

The structure of the book is also new. Traditional methodological works usually discuss a given method in depth first; sometimes in a less exact way in order not to frighten off prospective researchers who get anxious at the sight of a double sigma notation, or sometimes present ideas in an absolutely correct way in terms of mathematical statistics, but do not show the slightest empathy toward the reader who did not take at least ten semesters of mathematics in college. After giving an exhaustive discussion of the method, these traditional books describe a specific problem for the social sciences, upon which that method is applicable. Of course, everyone knows that you do not seek a topic for a specific method, but seek a method to solve a certain problem. Therefore, the structure of Ferenc Moksony's book guides the reader through the process of reasoning, pointing to the conclusion that we have to take the four steps in theory construction: hypothesis construction - operationalisation testing - conclusion not once but several times if we seek an adequate answer. While guiding readers through these grades, the author warns of the dangers of false steps and teaches, almost unnoticeably, the essence of Lazarsfeld's paradigm, the logic of hypothesis testing, the basics of linear regression analysis and, most importantly, reveals the clear beauty of logical thinking.

The book consists of five chapters. The first chapter describes a simplified version of Lazarsfeld's paradigm, without assuming that the reader previously studied mathematics or statistics. Through a simple example, seeking an answer to the question of why women are more likely to be neurotic than men, it illustrates that two-dimensional thinking misleads us. The introduction of the concept of alternative answers takes the reader closer to understanding the logic of hypothesis testing, which is discussed in details later. Further examples in this chapter (Alzheimer's disease and social differences in higher educational opportunities) illustrate the problem of selecting empirical consequences and the process of successfully executing the critical experiment. Since a phenomenon can be explained in many ways, and the conditions established for accepting or rejecting an explanation is a key issue in the construction of explanatory models, the author also focuses on this problem throughout the

second chapter. Describing Durkheim's thinking strategy in accepting or rejecting potential explanations for suicide he emphasises, again, that you do not seek answers to "why's" through testing the validity of *one* potential explanation; instead, you try to choose from a multitude of potential explanations the one/ones which have a "real" role in the development of that phenomenon.

In the third chapter the author focuses on a standard concept in empirical social sciences: the measures of association between variables. This chapter describes linear regression models rather than covering all indicators of associations. Ferenc Moksony distinguishes two types of effects an independent variable can have on an outcome: unconditional and interaction effects. In the traditional methodological approach the concept of interaction is related to multivariate analyses of variance, which means that an independent variable can have different effects on a variable to be explained when its impact differs across various categories of another independent variable. This reciprocal effect is called interaction.

Understanding the concept of interaction is a very important element of handling explanatory models. Perhaps it would have been more helpful if the reader had not encountered the numerical expression of the interaction effects in a regression analysis first, or at least the author had not consider it evident that the new variable, defined as a product of two independent variables, was applicable to distinguish the interaction effect.

Necessarily, in this chapter the reader can find formulas and derivations, but their complexity never exceeds the required degree, while figures and explanations provide for relatively easy understanding. It is very useful to "allow" non-numerical, i. e., not interval- or ratio-indicating measurement level, independent variables in the regression model. The clear presentation of both dummy and effect coding helps us understand how independent variables of at lower levels of measurement can be included. Perhaps an additional aspect of the phenomenon could also have been useful to describe for those who wish to apply regression analysis in practice: to show, for instance, how you can use an occupation variable which consists of 18 categories as an independent variable, and what kinds of difficulties may emerge during the interpretation of such a model which contains 17 dummy variables, as well as a related analysis of residuals through transferring unexplained heterogeneity into a model which tolerates categorical variables.

As to regression, the author discards the bad reflexes and thoughtlessness common in many analyses triggered by the "I enter the variables into the SPSS, then just describe the output" approach. The potential interpretations of *B* vs. *beta* coefficients, as well as the coefficient of determination are useful for drawing attention again to the fact that even the most complex multivariate analysis cannot be a substitute for logical thinking. However, readers who have no experience in regression analysis have to have a closer look at the analytical logic criticised by the author, and decide to use and interpret various indicators depending on the specific question raised.

The appendix at the end of this chapter took on a difficult task, making an attempt to introduce the reader to the basics of using the software package SPSS for Windows. If the aim is to allow the reader who has never seen SPSS to use the program, then the author assumes really ardent readers - for the section which describes the use of SPSS brings up a number of procedures and parameters (skewness and shape of distributions, quintiles and cross-tabulations) which were not discussed in previous chapters. If, however, the appendix has the

sole function of helping users to run regression analysis, then the basic information on the software package is superfluous.

The fourth chapter discusses the last two components of the quartet of hypothesis construction - operationalisation - hypothesis testing - conclusion. The author clearly describes the logic of hypothesis testing (the definitions of a null hypothesis, type 1 errors and significance level), although it would have been worth guiding the reader through the logical chain of alternative explanations - type 2 errors - and type 1 errors again for didactical reasons. In addition, it is not practical to define the more generic notions of the null hypothesis and the P-value within the terminology of regression analysis only in the *Glossary* at the end of the book so it may easily mislead the inexperienced reader. The last chapter is entitled *Suppressor Effects*. Earl Babbie, in his book *Survey Research Methods* (Belmont: Wadsworth Publishing Company, Inc., 1973: 293), defines the notion of suppressor and distorter variables in relation to Lazarsfeld's paradigm. In Babbie's terms a suppressor variable conceals a relationship between variables, while the distorter variable switches the sign of a relationship between two variables. Ferenc Moksony is essentially right when describing this sign switch between the two original variables as a variant of the suppressor effect, but perhaps he could have added the terminology of Babbie's work, which serves as a textbook in one of the social sciences, sociology, at several universities. This observation does not at all mean that this chapter has little value. Like previous ones, the last chapter of the book teaches us to reason in multiple dimensions and the importance of scrutinising the validity of findings.

A logical flow and personalised questions popping up in the chapters encourage independent thinking and make this book even more outstanding within the series of works available on model construction and data management. I would recommend reading this book cover to cover to every newcomer in the social sciences.