



PREFACE

What role should formal models play in the social sciences? We are thinking primarily of sociology and political science: the application and function of formal models in economics are obvious. The use of formal models in sociology and political science is often referred to as the application of economic methods in these sciences, but the problems to which they are applied often have nothing to do with economics. “Formal models” are primarily the use of approaches derived from widely understood mathematics, although economics has often played a significant role as an intermediary in their assimilation in other social sciences.

The expression “use of formal models” suggests that formal models are intended only as a tool. But this is only part of the truth. Yes, “formal models” are a tool. But the intention to use them – especially in the social sciences – also arises from a specific approach to the essence of research problems. The use of formal models is related to the need for accuracy. It may be a desire to closely describe the observed reality, and thus to measure its various characteristics, the one-dimensional and multidimensional properties, the intensity and the strength of the relationships between them. From this need grows the development of statistical methods in the social sciences, measurement theory, or social network theory. It may also be the desire to closely describe and understand the nature of the “mechanisms of action” of the various phenomena. Here the example may be the use of game theory models and – broader – rational choice models.

The “accuracy” to which we refer is primarily about the precise description of the model. A scientist who uses “formal models” should be able to clearly explain the meaning and role of each parameter, even each digit, each letter and any other character that appears in the model. The model must be understandable and interpretable in every detail. Unfortunately, social reality is far more complex than its most complex models – and we will

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never be able to fully understand it. This means that by creating formal models of reality we are condemned to simplification; we are condemned that at best the model will reflect reality in a very imperfect mirror. But this is a kind of deal: we risk that what we create will be only a distant image of reality, but we will know exactly what we have created.

The papers we present here deal with very different issues, and as the “formal models” that are available in the social sciences are also many, at first glance finding their common denominator may not be easy.

The articles in this issue of “Studies in Logic, Grammar and Rhetoric” can be ordered in a couple of ways. First, they can be divided into those that deal with the methods and models themselves, and those that are examples of their use. Second, they can be divided according to the field or problems to which formal models are to be applied. Third, because of the type of formal tools the article deals with, or to the use of them it refers. None of these divisions, however, will be strictly accurate, as it is not possible to strictly separate applications from the presentation of a given method or model.

The presented articles do not create a well composed set exhausting – or even covering – the whole of the issue of “formal models in social sciences”. We only wanted to show a multitude of possible approaches, a multiplicity of meanings that “formal models” can be attributed to, and a variety of areas to which they can be applied. We hope that this small sample will encourage readers to their own exploration and their own attempts at using formal tools in sociology or political science.

Jacek Haman
Jan Poleszczuk