

ABSTRACT

The diploma thesis aims at three different categories of manipulations which are used in statistics and probability diagrams (charts) and chooses one of them, *manipulation using graphical techniques*, for quantitative research that follows the theoretical part.

The three categories are analyzed in a diagram as a sign and their distinctions are investigated to prove singularity of each. This analysis is conducted twice. First, the manipulative diagram is analyzed in a system of signs created by Charles Sanders Peirce, with emphasis on the three phases of an *interpretans*. Then, the analysis is performed in terms of mythology of Roland Barthes. Finally, even the third analysis is made in the framework of semiology of Jacques Bertin, which, however, focuses solely on the graphical techniques of manipulation. Emphasis is placed on *visual variables* and *possible questions*.

Graphical manipulation techniques fall in two basic groups. The first represents graphical manipulation which uses its specific structure: axis, their intervals, location and size of labels, and the type of a diagram. The second group includes manipulation using general patterns of visual communication and representation.

The research was conducted in secondary schools in Prague. A sample of nearly 400 students which were given a written test of 30 items, some of which included manipulative diagrams. The effect of manipulative and non-manipulative (correct) diagrams is then compared.

The aim of this research was not to show that students can be manipulated by diagrams but to identify and describe cases in which the manipulation is effective. The results can serve to separate the effect of graphical manipulation in further research which should address the effects of manipulative diagrams on the average recipient of media communication – where diagrams function in a different way – and also two other categories of manipulation.

Key words

manipulation, diagram, chart, semiotics, Bertin, Peirce, Barthes, visual communication, myth, statistical quantity, context, sign, possible questions, visual variable