ABSTRACT. In the present article the logical structure of applied social sciences will be discussed. Applied sciences don't regard causes and effects but only means and ends. Therefore the logical structure of means-end-argumentations in social sciences will be shown. One can perceive also the important part of normative statements. In summarizing, we can declare that in social sciences there is partly a need to reflect on the postulate of a value-free social science. But it is not our purpose to introduce normative statements as scientific ones. What counts is a liberal attitude towards all realizable norms.

1. STATEMENT OF PROBLEM

Probably no other perspective of German philosophy of science has found such a great resonance in the field of applied social science than the programmatical concept of the so-called "tautological transformation of empirical laws in technological hypotheses" going back to Hans Albert. Above all, they are basically oriented studies in economics, business science, and business administration, which are all engaged in adopting this concept of the philosophy of science. Although this idea is superficially well-known there still exist various misconceptions.

Therefore the main task of this study is to inform the English and American reader, to report on some ideas of Hans Albert, to give a precise formulation of the above mentioned metatheoretical concept and to present subsequently a critical analysis of the 'technological transformation', in an abstract way and as applied in business administration.

2. TECHNOLOGY MODEL

If there exists a (physical or social) law (nomological statement), it can be changed into a technological hypothesis or – speaking move precisely with Albert – the law can be transformed via a tautological operation in such a hypothesis. The transformation takes place by replacing the cause–effect...
terminology by a means–end — language; in other words by replacing causal statements by instrumental statements. We can designate the causal statements as nomological statements and the instrumental statements as technological. Bunge speaks of nomological statements respectively as nomopragmatic statements. In this way a “theory gets its ‘technological shape’ through tautological transformation. A set of statements is obtained from a set of nomological hypotheses, which inform us about the possibilities of human actions toward certain objectives. Such technologies are a result of “an analytical transformation of theories”. They do not contain normative ingredients in the object language, the language in which the theories and technologies are formulated. As a consequence it is possible to demonstrate and confirm the postulate of a value—free science in the domain of the social sciences.

The normative decisions which are required for a technological transformation belong to the basic decisions of a science. These decisions do not enter in the scientific systems automatically, but they are “fundamental principles of a science . . . . The basic problems of a science include the choice of the ends and the means. Means and ends however affect the construction of a technological system”. Means and ends are assumed hypothetically and fulfill certain desidera, which have to be taken into account in the creation process of a technology. In summary, this means: For the design of a technological system no object-linguistic judgements are required but meta-linguistic, hypothetically stated basic decisions. The concept used here is therefore a meta-linguistic concept of the technological transformation of theoretical statements in technological hypotheses.

This is the right opportunity to say something about the concept ‘meta-language’ and ‘object language’, because these concepts are in a central position in this study. With both concepts the ‘semantical theory of linguistic levels’ can be characterized. These levels are connected in a hierarchical way. The object-language means regularly a level of low order, speaking of the things of a non-verbal world, while in the meta-language we can speak about the object-language (or another lower meta-language).

This is demonstrated by the following example:

- ‘The level of aspiration of a person A has been changed in the last period’ (1)
- ‘(1) is a descriptive sentence of the object-language’ (2)