

R. Axelrod, Structure of decision, the cognitive maps of political elites,
Princeton University Press, 1976

Axelrod and his associates developed a content analytic instrument for documentary material and open ended questions in order to study whether policy makers behave in accord to their belief systems or to forecast future behavior on the basis of previous material.

However cognitive mapping is based on the assumption that politicians evaluate complex policy alternatives in terms of the consequences a particular choice would cause and ultimately of what the sum of all these effects would be it differs from decision analysis with respect to the graphs used and their analysis. Regarding choice criteria in decision analysis one searches from a variety of principles the rule which describes the best the data while in cognitive mapping consistency criteria are used which are not so far developed. In chapter 3 Axelrod defines a cognitive map as a "structure of the causal assertions of a person with respect to a particular policy domain to generate the consequences that follow from this structure". Subsequently the coding procedure and the analysis are explained in detail and appendix I gives the entire set of coding rules so that one could replicate the procedure. The results of the coding reliabilities are also reported and proved to be satisfactory. Cognitive mapping first consists of translating texts into simple assertions of the following type:

cause concept / verbal connector or linkage / effect concept.

The cause concepts are generally alternative policy options while the effect concepts are references to immediate policy objectives or value concepts to preferred final states. The main linkages between cause and effect concepts are "positive", "negative" and "neutral". Subsequently the cognitive map, i.e. a directed graph is built from this set of assertions. This step consists of combining all the assertions. In case that assertions have the same cause and effect variable they are combined into one relationship. Unfortunately this combination procedure is not entirely made explicit in the book.

Thereafter one can investigate whether a decision maker acted consistently with his beliefs. Given a cognitive map consisting of some policy alternatives and a utility variable the consistency criterion mentioned by Axelrod consists of selecting the strategy with a positive total effect.

(Appendix 3 explains the calculation procedure of all kinds of effects.)

This consistency criterion however, seems to be problematic in case of alternative strategies with a positive total effect. The procedure developed by Nozicka et al. (appendix 4) which makes use of a lexicographic decision algorithm in order to select the preferred strategy could be a solution to this problem.

The book further contains a variety of applications of cognitive mapping to policy situations like the "Decision for neoimperialism of the British Eastern Committee in 1918" (chapter 4) and the "Syrian intervention in Jordan, 1970" (chapter 6). The latter case is actually an example of forecasting. Prior to the crisis a cognitive map was drawn by experts and thereafter the cognitive maps of the hypothetical and the real life situation made up by experts were compared showing striking correspondance.

In conclusion "cognitive mapping" seems to be an interesting alternative approach to decision analysis especially for documentary analysis where decision makers do not use probability concepts. Also for those interested in the applications of graph theory Axelrod's book with its detailed appendices could be of some interest.

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