

SELF DUALITY AND CONFLICT RESOLUTION
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A mathematical model of a goal-oriented thinking with feed back is described. Basic notions: *criteria, decision graph, ranking, hierarchy, duality and self-duality* are introduced and explained. Mental process of conflict resolution is considered and its mathematical model is made as a decision hierarchy with feedback. Some real world examples (intelligent mobile robots, risk-as-feeling hypothesis and government budget re-evaluation) are solved calculating the fixed point of the self-assessment operator.

A standard approach to conflict resolution is to reconsider the goals and their preferences or to add some new options or actions into consideration. In this article we suppose that decision maker exhausted all possibilities to add some other option into consideration, i.e. that he ***does not change the structure*** of the hierarchy and ***does not change the preferences*** of the objects inside the hierarchy. The ***source of the conflict*** is the ***unknown importance*** of his goals.

Self-duality in a decision process arises when some objects are also criteria for themselves. A typical example of self-duality is a group of decision makers who attempt to rank themselves.

In ***internal conflict***, a decision maker reconsiders his goals from the point of view of actions. For each action there are some goals which support the action more than other actions. This means that each action have a tendency to rank the goals, directly or indirectly using some extra criteria. This means that the goals, using actions, are ranking goals.

In the ***choice under risk***, precisely in risk-as-feeling model introduced by Loewenstein (2001), people are assumed to evaluate risky alternatives at a cognitive level, based largely on the probability and desirability of associated consequences. Such cognitive evaluations have affective consequences, and feeling states also exert a reciprocal influence on cognitive evaluations.

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