Systems Intelligence in Decision and Negotiation Support

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Extended Abstract

Multicriteria decision and negotiation support are not only about mathematical models for eliciting preferences and reaching efficient solutions. By today we have already understood the importance of the decision support process itself and that it must be interactive. Thus also the way the participation is arranged matters. Participation engages the analyst or facilitator into the process with all the complexities related to human interaction. People react to the environment and to the way the issues are presented and framed. Problem structuring and framing is unavoidably systemic in the attempt to include all the impacts found important by the different stakeholders. People's beliefs and beliefs about the beliefs of others can have an impact, too. Recent research emphasizes how values are not constant but constructed in the situation by learning and experiencing (Lichtenstein and Slovic 2006).

We are dealing with a phenomenon in which the agents as well as the environment and elements of the decision such as criteria and alternatives are interconnected. So we have a systemic problem which should be approached as such. In the early days of applying systems thinking (Jackson 2003) in problem solving the analyst easily fell into the trap of only describing the system from outside. It was thought that providing such a systems description would be a useful way to approach the problem. As the systems thinking approach has not really been widely accepted, the systems thinking community is starting to recognize that this is not the way people are willing to have problems solved for them by an outside facilitator. People want to be in real interaction and feel engaged in the system of solving their problems. The Systems Intelligence (SI) approach builds on systems thinking and complements it by an explicit view from within the system (Saarinen and Hämäläinen 2004, Hämäläinen and Saarinen 2006, 2007).

Here we propose that problems especially related to multicriteria decisions and negotiations should be approached with the perspective of Systems Intelligence.

By Systems Intelligence we mean intelligent behaviour in the context of complex systems involving interaction and feedback. A subject acting with Systems Intelligence engages successfully and productively with the holistic feedback mechanisms of her environment. She perceives herself as part of a whole, the influence of the whole upon herself as well as her own influence upon the whole. By observing her own interdependence in the feedback intensive environment, she is able to act intelligently.

We believe that Systems Intelligence is a key form of human behavioural intelligence.

We feel Systems Intelligence is also the key skill of any facilitator.

It is unfortunate to see that multicriteria decision making research has drifted away from supporting the decision maker to only developing new less and less transparent mathematical models which try to give the right answer to the decision maker. The field of MCDM is methodologically relatively mature and now we would indeed benefit from focusing on the practice of the profession. The need for MCDM support is growing in environmental policy problems such as the global climate change in which the multicriteria approach is the natural and important one to use (Hämäläinen 1988, Marttunen and Hämäläinen 2007, Rauschmayer and Wittmer 2006). Environmental issues are always explicitly systemic. In facilitating multidisciplinary and multicultural decision and negotiation processes the need for a systems intelligence approach is clear (see e.g. Siitonen and Hämäläinen 2004, Viluksela 2007). We are all part of the system whether in the role of facilitators helping people to deal with their own preferences or as stakeholders trying to reach a consensus on an issue under conflicting interests. There is growing literature on participation and deliberation which emphasises and develops good practices (see e.g. Fisher, Ury and Patton 1994, Moffitt and Bordone 2005, Schuman 2005). This is naturally very relevant to decision support even if multicriteria methods are not as much in the focus of this literature as we would like. Another field of interest here is the work done on organizational learning (Senge 2006).

In many successful practical MCDM projects the result does not even need to be a decision recommendation. Often the most important benefit has been the improved understanding and learning that has taken place (see e.g. Slotte and Hämäläinen 2003).

Group interaction and decision support are systemic phenomena. Now that we have a wide set of mathematical tools available we can and should focus on how to improve the process of helping the decision makers. By introducing the concept of Systems Intelligence as an essential skill and working method for the facilitators and stakeholders, we hope to help all the participants understand and improve their impact on the problem solution. Before eliciting preferences and trade-offs there needs to be systemic thinking with interaction and learning.

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