

Comments on *Mindsets, Rationality and Emotion in Multi-criteria Decision Analysis*

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The paper's call for a linking of facts and fact-based theory across disciplines and, in particular, the fields of ethics, neuro-physiology and decision sciences to create a common groundwork of explanation, raises some important issues, long ignored by the MCDA community. Much of the literature on MCDA has been and still is to a large extent bogged down in developing clever computational techniques for finding the 'best' or 'preferred' solution to decision problems with multiple objectives, while remaining stuck in the hard OR paradigm that problem situations are clearly defined, i.e. the objectives, their importance, and trade-offs between them are given or can be elicited from the decision maker(s), that constraints and decision choices are known, and people are mainly seen as passive information sources and recipients and not an integral part of the problem situation. Most approaches are based on the illusion that the interpretation of facts is objective, i.e. independent of the worldview of the observer or analyst, when in fact we, as humans interpret the real world through our perceptions, which by definition are subjective. (In my prevailing 'mindset', the only operational meaning of objectivity is Ackoff's (1974) 'consensual subjectivity', namely the [temporary] 'social product of the open interaction of a wide variety of individual subjectivities'.) The explicitly or implicitly accepted assumption is that facts (or 'beliefs' in Wenstøp's terminology), values, and the relevant context or system defined for the problem situation are separable.

However, Ulrich's 'eternal triangle' (Ulrich, 2000, p. 252) of judgements about boundary choices, values and facts, made explicitly or implicitly for both the 'system of concern' and the 'context of application' (the latter being all those aspects that either affect or are affected by the system of concern considered), clearly illustrates the selectivity of these choices in any decision process. Different facts become relevant or their interpretation changes as we modify our boundary choices or modify our value set. For example, when evaluating the effectiveness of a medical procedure, expanding the boundaries to include quality of life requires new facts and may change the interpretation of other facts. Our value set, the importance of the corresponding objectives, and the criteria used for their evaluation may change as we consider new facts or change our context of application. Martinson (1977) reports that decision makers have been observed to change the importance weights for objectives after observing the projected outcomes (i.e. new 'facts') of an analysis. Similarly, the boundaries of both the system of concern and the context of application expand or contract depending on which facts we consider relevant for inclusion and which values are explicitly considered in the analysis. Unless the context of application includes the entire universe, the choice of which facts are seen as relevant is therefore selective and largely arbitrary. It depends on such factors as the amount of resources available (time, funds, staff available, computing power). Furthermore, the choice of values and corresponding objectives to include, the importance given to them, the surrogate measures used to capture them, and the evaluation criteria used are subjective and influenced by which stakeholders are explicitly recognised (including nature), as well as their power to influence the decision process.

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It seems to me that the present paper still remains unclear about these aspects. Although it accepts that 'facts' are our perception of reality, its discussion implies a confusion about the meaning of objectivity, as indicated by the statement in the Introduction that 'beliefs [facts] can be right or wrong.' How can a perception by an individual be wrong? If I experience the weather as cold and you find it warm, this does not imply that one of us is wrong. Our perceptions are simply different. Similarly, the paper adheres to the notion of separability of facts and values, as indicated by the statement in the section on Elicitation of Emotions that 'the decision maker be cajoled into a consequentialist [?] mindset, followed by a careful separation of virtues and end values. Then, emotions must be elicited to assign value; otherwise we know that the result will be unreliable [meaning what?].'

Including the findings of the extensive literature on critical systems thinking and problem structuring methods would have considerably enhanced the impact of the paper. In particular, it remains silent on the central importance of boundary critique on the inseparability of the choice of facts and values in any form of decision making. Problem structuring methods only receive a passing reference to the 1997 paper by Belton and Ackermann, when in practice a majority of the problem situations tackled by problem structuring methods involve conflicting and/or incommensurable multiple objectives and multiple stakeholders

with different worldviews or mindsets (hence values), as well as different power to influence the decision process. The literature on problem structuring methods has numerous reports on real-life applications that culminate in effective solutions which are systemically desirable and culturally feasible, rather than simply computationally efficient as is often the case with traditional MCDA methods (which may leave decision makers with the nagging suspicion that the cranking of the handle only 'solved' a distant shadow of their real problem as perceived by them). Finally, any analysis that fails to undertake a sufficiently comprehensive boundary critique is technically and professionally deficient. This is the major reason why so many 'solutions' breed new and often more difficult problems.

REFERENCES

- Ackoff RL. 1974. The system revolution. *Long-Range Planning* 2–20.
- Belton V, Ackermann F, Shepherd I. 1997. Integrated support from problem structuring through to alternative evaluation using COPE and V·I·S·A. *Journal of Multiple Criteria Analysis* 6: 115–130.
- Martinson FK. 1977. Multiple objective linear programming for multiple land use management. *Ph.D. Dissertation*, University of Colorado, Boulder.
- Ulrich W. 2000. Reflective practice in the civil society. *Reflective Practice* 1(2): 247–268.