

## **Nature *in* and Nature of MCDA**

by

**Felix Rauschmayer**

*UFZ Centre for Environmental Research*

*Leipzig-Halle, Germany*

In this section, I will carry on the topic of T.J. Stewart who wrote in the 2000's fall edition of the Newsletter. He took up the question of how MCDA practice should respond to behavioural research findings. An answer definitely needs a normative point of view. Without a clear idea about what the nature of decision aid is (or should be), we can not identify any shortcomings of different MCDA streams. What is the point of reference toward which we can define biases (as Stewart calls the shortcomings)? Talking of biases implies that there is a true reference which we ? as analysts ? should attain. But, at the same time, it is clear that this true reference (i.e. the preferences of the decision maker (dm)) does not exist as such. His preferences may be, and actually are, influenced by all sorts of decision frames: the weather on the decision day, the mood of the dm, the organisational setting, the intellectual (and emotional) capacity of the dm, the decision aid model with all its variables (thresholds, preference functions, etc.), the mood, etc. of the analyst, and many things more. Consequently, we arrive at a complex interrelationship between all these variables without any indication at all of which combination yields the "true" preferences, i.e. our reference point. But it is this point which enables us to define biases, to compare different MCDA (and other) models. Talking of biases implies an underlying idea of optimisation of decision aid which has no place here.

Instead, we should look for a *satisficing* decision aid. Whom do we (the analysts) want to satisfy? Or, rather, *should* satisfy (in order to make the normative aspects clearer)? What are we responsible for? And whom are we responsible to?

As you may suppose, there is a huge debate about these questions of responsibility in Ethics, and it is far beyond my scope to give an answer to them. But in each decision case, the analyst has to have an ethical point of view, and this point of view must be clear to her ? otherwise, she may not define the goodness of the decision aid. I will make the topic clearer in using the first part of the heading: "Nature *in* MCDA". Whenever decisions have impacts on nature, the range of concerned beings gets very large. Especially decisions in land planning, conservation issues, traffic and energy systems, agriculture, fishery and forestry have large impacts on nature. Currently living as well as future human generations are concerned by these decisions as well as other currently living and future animals, plants, and ecosystems. In aiding the dm to take decisions, the analyst is not only responsible to the dm, but ? at least ? to present human beings. Her responsibility is not as large as the responsibility of the dm himself, but well existent, as she inevitably influences the decision. In my view, and there are good arguments for it, the analyst also has to assume responsibility to future humans as well as to other living beings (to decreasing extents). She is not responsible for the decision itself but for (the part of) the decision process on which she is acting.

How can this responsibility be reflected in the analyst's attitude and action? First, there are limits of co-operation: The analyst is not obliged to accept all types of preferences of the dm, her responsibility to others might outweigh her responsibility to the dm. In extreme cases, she might drop the case, or falsify the decision process. Second, and more importantly, the analyst should influence the preferences of the dm openly, if the latter neglects his responsibility to others. This open influence is not only legitimate, but might be a necessary part of the decision process, and could be made explicit by the proposal of integration of specific stakeholders, of specific criteria, or of forms of evaluation which consider, for example, the interests of future generations. In supporting the "process of learning

and discovery" (as Stewart says), the analyst directs it in some way, and she should do it openly in such a way that she can bear the responsibility of the decision process.

This, then, highlights the value of behavioural decision research to the practice of MCDA. The analyst needs the preference model (constructed with the help of results of behavioural decision research) in order to be able to bear the responsibility for the decision process. It is part of her responsibility to the dm's and to other interests that she models the *ex ante* preferences as best as she can, that she influences them openly, and that she uses the possibly changed preferences to help the dm to come to a resolution (if he wants to do so).

This also highlights the value of (positive and normative) ethical research to the practice of MCDA. Without such a background, the analyst may not assume her responsibility for the decision process.

Let's come back again to "Nature in MCDA": There are two domains: 1) Responsibilities to future generations (and for other living beings) are not well reflected in democratic decisions, and to a still smaller extent in markets. But, they are widely acknowledged by the public (at least responsibilities to future human generations and to some vertebrates). It is the duty of the analyst to take up her responsibility. 2) The preferences of a concrete dm who weighs up the pros and the cons of some actions in *nature conservation*, play a far less important role than his preferences in some business decision. Mostly, it is the role of a dm in topics of nature conservation to represent public and private interests of existent and non-existent, human and non-human interests (compare, for example, the preamble of the Convention on Biological Diversity). It is the role of the analyst to remind him of these preferences, and to propose appropriate decision models: Future generations and/or sentient animals (for example) might be treated as decision actors (with the problem of how to represent the preferences of non-existent decision actors). Or they might be represented as criteria (with the problem of how to put weights (or importance) on them).

As you noticed, I have come back to the "Nature of MCDA". Both topics are heavily interrelated, and it is not possible (in my view) to extend the field of application of MCDA to questions involving nature preservation or nature destruction without changing the understanding of MCDA itself.

P.S.: By the way, the heading of my small contribution is also the title of the 55<sup>th</sup> meeting of the working group which will take place from 14<sup>th</sup> to 16<sup>th</sup> of march 2002 in Leipzig and to which all of you are very welcome.

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## **Answer to Felix Rauschmayer's article**

**Jacques Pictet**

**Bureau AD, Lausanne, Switzerland**

**jpictet@aide-decision.ch**

Felix Rauschmayer's article is a challenging one. He addresses the issue of the responsibility of the analyst. Whom and / or what is she responsible to?

The author's answer tends clearly in the direction of the Humanity, both present and future, and then of the Nature : "[...] her responsibility to [them] might outweigh her responsibility to the [decision maker]". This choice, that the author labels as ethical, generates direct practical difficulties, namely the ways to exercise this responsibility. To summarise the author's options, this can be achieved by "the integration of specific stakeholders, of specific criteria, or forms of evaluation which consider, for example, the interests of future generations". Her attitude and action to do that? "In extreme cases, she

might drop the case, or falsify the decision process. [...] more importantly, the analyst should influence the preferences of the [decision maker] openly, if the latter neglects his responsibility to others" (our emphasis).

As an individual and a professional, I do share most of the author's concern for the future and proposals. But there is a limit beyond which I cannot follow him. Namely, his proposal to falsify the decision process. I am convinced that the analyst influences the decision process anyway, both consciously and unconsciously, and I can live with that. But falsifying the decision process is something different, something about legitimacy. The analyst can have a strong feeling of responsibility to someone or somewhat, but has she the legitimacy to act in their name? This question is difficult for unborn beings. In my opinion, the only way to pretend to this legitimacy is to do it in the open and to accept to be challenged by other people pretending the same. The usual place for this is politics. I am very respectful for those - NGOs, political parties, pressure groups - who try to be the heralds of those who cannot defend themselves, because they are too poor, too far, too young or not even born yet. (The same holds for those defending the animals and the nature.) The mistakes and sometimes abuses made while trying to represent them should not prevent people to continue in that direction. Coming back to the analyst, whatever she tries to do in order to influence the decision process, she must do it openly. She can propose everything - new goals, stakeholders, alternatives, constraints, criteria, etc. - and remains free to adapt her behaviour according to the fate of her proposals. I share the author's view that sometimes, the only honourable action is to withdraw from the decision process, as mentioned explicitly in (Pictet, 1996 : 143 ss.). The analyst's position - not to mention the facilitator's - is a precarious one. Her participation to the process depends on her acceptance by all the actors. If she loses their trust, the game is over. The risk is not only the loss of professional prestige ; it deals also with the opportunity for the analyst to influence significantly or not the process in the direction she believes to be the right one. Assessing this risk is everyone's duty. For myself, I am convinced to be more effective by influencing openly the processes I am involved in. In a recent case, I have been asked to participate for this very reason. Up to now, I never had to withdraw - even though I had once to threaten to do so - and hope I never will have to.

#### References

Pictet J., 1996, D'Épasse l'Évaluation environnementale, Presses polytechniques et universitaires romandes, Lausanne.

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### **Commentary to Jacques Pictet's answer**

**Felix Rauschmayer**

**UFZ - Centre pour la recherche environnementale Leipzig-Halle GmbH, Section Öconomie, sociologie et droit, Leipzig, Allemagne**

I appreciate Jacques Pictet's support for most of the concerns and proposals expressed in my article. He disagrees with my proposal of falsification for most extreme cases of decision aid. My most extreme cases are those no one of us will never be confronted with (at least, I very much hope so). These cases are found in history (especially Germany is "famous" for it), but also in our times: "Dear analyst, could you help me to decide about the best way to a genocide?" In those cases, it mostly is a case of very great courage for the analyst to withdraw from the task, but it might be better to falsify the process. The rarity of those cases might justify not to talk about the possibility of falsification, but it must be clear that

1. there is something above a professional code of conduct; and
2. the limit between "legitimate" influence and falsification is fuzzy.

This last point became clear to me when I thought about J. Pictet's answer. As the limit is fuzzy, and as there are both sides of the limit, the legitimate and the (nearly always) illegitimate, we have to think about getting the limit clearer. This can't be done without ethics.

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## **"Biases" in Decision Making: Some Responses to Felix Rauschmayer and [Mordecai Henig](#)**

**Theo Stewart**

**Professor of Statistical Sciences**

**University of Cape Town**

**7701 Rondebosch**

**South Africa**

I am gratified and not a little flattered that my brief article in the Autumn 2000 Newsletter gave rise to two responses, both longer than my original article. Thank you colleagues!

As I read and re-read the articles by Felix Rauschmayer and Mordecai Henig in the Spring 2001 Newsletter, I found myself in essential agreement with the sentiments and views expressed. I was a little perplexed, therefore, to detect a sense, especially from Mordecai, of adopting a debating stance as if there were substantial points of disagreement between us. I can only think that somehow I had not expressed myself clearly. The fault is entirely mine, but I am grateful to the editors for giving me the opportunity to clarify one or two points.

A primary source of confusion appears to derive from my use of the word "bias" in what I believed to be the sense implied by Kahnemann and Tversky. "Bias" in this context does not have the technical meaning that it has in statistics, where bias is a measure of systematic deviation from a "true" parameter value. Rather, I use the word in the common language sense of any tendency to move towards one type of conclusion rather than another. The Chambers' English dictionary talks of "any special influence that sway's one's thinking". In this sense, bias in human judgement can be described without there needing to be any true reference (Rauschmayer) or axiomatic systems (Henig).

This can perhaps be illustrated by considering the well-known "anchoring and adjustment" bias in cognitive tasks. Although this is usually demonstrated in the context of estimating subjective probabilities for example (where there might, but need not necessarily be a true "correct" answer), there seems to be every reason to believe that it would apply equally well to tasks in MCDA such as assessment of importance weights. In essence, the phenomenon of anchoring and adjustment is that numerical judgements or assessments are strongly influenced by whatever initial value is first tabled, which in turn may be a product of many influences unrelated to the actual decision problem at hand. For example, suppose the facilitator of a group discussion around importance weights makes use of a software system in which weights are displayed on bar graphs, where the height of each bar may be dragged up or down to represent the weights. The facilitator might well adopt one of the following strategies (and I have certainly used both):

1. Start with all bars of equal height;
2. Start by suggesting a rank ordering of weights, on the basis of which the bars are initially set to heights corresponding to the centroid weights of SMARTER.

On the basis of research results on anchoring and adjustment, I would conjecture (although I have not carried out the experiments - anyone like to try?) that the finally accepted weights would show less dispersion in the former strategy than in the latter. This would be a bias which we can describe without implying in any sense that "true" weights exist. I recall (but

couldn't find the reference in the last minute rush of preparing this article) John Buchanan reporting similar anchoring and adjustment phenomena in the context of interactive methods. The concern I was expressing in my previous article was that those involved in applying MCDA should be more sensitive to the existence of such biases or influences, where these influences may even be generated by the analysts/facilitators themselves. In contrast to Mordecai, I am not convinced that we yet understand the extent of such influences. I do share with Felix Rauschmayer the sense that this has to do with the ethics of MCDA practice. Analysts need to realize that there are many subtle ways in which they and their models can "bias" the results obtained, in the sense of generating tendencies towards one type of solution rather than another. For example, in applying value function methods, over-linearization will lead to the exclusion of convex-dominated solutions, and to the encouragement of extreme solutions (very good on some criteria, very poor on others). It is not constraining the value judgements of decision makers in any way to point this out; in fact it is our ethical duty to do so!

Another point of potential confusion relates to the concept of a "satisfactory" or "satisficing" solution. I did not mean to imply that there exists a "solution" to an MCDM problem in any objective sense. But I do believe that the aim of MCDA should be to take decision makers to the point at which they are content or satisfied that the issues have been adequately explored, and that they do fully understand the choices or recommendations they are making. In group decision-making contexts this implies also that the resulting policy choices can be fully motivated, and that the interests of all interested parties have been given fair consideration. There have been times when I (as facilitator/analyst) have been uncomfortable with decision makers foreclosing on options too early, leaving the potential for serious post-decision regret and conflict, and have felt obliged to make this known. In this sense, I agree with Felix Rauschmayer that I am not always "obliged to accept all types of preferences". I find Mordecai Henig's statement that the contribution of MCDM includes "... complying with revealed preferences" a little simplistic and even perhaps dangerous. If we simply reflect back preconceived answers, are we adding much value? If I know that there is potential for judgemental biases, and have reason to suspect that there will be substantial post-decision regret, I need at very least to point this out to decision makers.

In conclusion, however, there is no doubt concerning the one point on which we all agree, namely Mordecai's final sentence: "There is more to decision making than selecting an alternative".