

Some Thoughts on Future of MCDM and our Schools

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Forecasting is difficult - I mean to forecast the future. This has been a very popular expression in Finland, ever since our late prime minister Mr. Ahti Karjalainen used it in a TV-interview about 20 years ago.

Forecasting is really difficult if we have no decisions variables to control it. Fortunately, the future of MCDM is not out of our control, but into some extent we are able to make our own future - provided that we know what we want. If we do not know what we want, there is no way to get it. That's why it is very important to discuss what kind of a future we like to prepare for ourselves. I am sure that perfect unanimity is impossible to reach, but if we can find at least a fuzzy unanimity which gives us some guidelines where to go, let's take it as a satisficing solution to us. In the following, I will discuss some issues I consider important, and remain to wait for your comments.

I will divide my discussion into two parts: the future of MCDM as such and that of our community. I will use the abbreviation MCDM (Multiple Criteria Decision Making) as a generic abbreviation to refer to all those abbreviations (MCDS, MCDA, MDA, etc) what we use to refer to our discipline.

First we may ask ourselves: Who are we? Are we Operations Researchers/Management Scientists or something else? If we regard us only as Operations Researchers/Management Scientists, I am afraid we are in trouble! OR/MS does not do very well as we can easily recognize by reading e.g. ORMS-today. For instance, his article Pursuing the Wrong Objectives in the April 1997 of ORMS-today Papageorgiou discusses the decreasing role of OR/MS at Business Schools. He believes that the situation can be changed by teaching OR/MS in a new way. The article is a response to Gepfer's letter to the editor in the December 1996 issue regarding the bad reputations of the label of OR/MS in practice. So, our marriage with the OR/MS cannot be very happy! In addition, we are not very well recognized in the OR/MS-community. Take almost any Operation Research or Management Science textbook, and what do you find about us? If you are lucky, something on Goal Programming as an extension of LP or perhaps a few words on the AHP (Analytic Hierarchy Process), but hardly anything else.

If we are not Operations Researchers/Management Scientists, so what is the most suitable title to describe us? We believe that people are willing to make rational decisions - even if we disagree what rationality means. Decisions cannot generally be made by using a single criterion, but many. We also believe that all features of a decision problem cannot be put into a single model and solved without interaction of a decision maker. Perhaps these are some typical features to describe us. In a way, we are interested in both soft and hard features of problem solving. On the soft side, we investigate problems such as structuring, behavioral aspects, value focusing, supporting, etc. On the hard side, we are interested in mathematical and computational features. Some research areas consist of soft and hard features. Theory of preference modeling is a typical example. It is highly mathematical, but is based on the behavior of a human being. That's why it plays an important role in our field. It seems that the abundance of various characteristics makes it hard to find any common label to characterize us. So, let it be MCDM!

What are then the most important challenges for the future of MCDM? First of all we need more publicity. The lack of publicity is perhaps one of our most serious problems. In the community of OR/MS - especially in USA, we are not very well recognized. Many Operations Researchers/Management Scientists still consider the whole field a simple generalization of LP or a technique to aggregate various criteria using weighted-sums for this purpose. Fortunately, we seem to have a more visible role in the OR/MS-field in Europe. There are many MCDM-clusters/streams in EURO-conferences and we have some other visible activities such as summer schools on MCDM. We are a truly international discipline. In the MCDM-directory published in MCDM-Worldscan (April 1997), there is listed 1133 names of MCDM people from 77 countries?? However, although we have spread around the world, we have not been able to take a benefit from that.

Next, how successful we have been in selling our ideas to practitioners? How many decision makers know the concept of Multiple Criteria Decision Making - even if they make multiple criteria decisions all the time? I bet if you tell a problem owner that you are a specialist in multiple criteria decision making, you do not get a contract. Internationally we are very well known - but only in our community. We have a nice community, but we have a "bad habit" to isolate, and to keep discussing to ourselves. We like to organize "special" meetings on "MCDM", and we love to meet our colleagues (= friends). We are also open to the new members of our "MCDM-family", and in my understanding, many young scientists also consider our society easy to enter. We are a "happy family", but it should not be a reason not to advertise us to the outside world.

I think we should advertise our knowledge much more. Some multicriteria techniques are used quite often in several published papers, but how often you see the techniques advanced applied? (Of course, our own papers are exceptions.) Are our methods too advanced to practitioners or are they just unknown to them? In both cases, we have to do something. I strongly believe we could also be very useful to other scientific areas as well. Consider e.g. Data Envelopment Analysis (DEA). The scientists in that field have been very successful in marketing their research achievements, but perhaps we could contribute to their area as well. For instance, our scientific achievements concerning e.g. an efficient frontier might be very useful to them. Currently, they use weighted sums to characterize that frontier. On the other hand, we could learn from them how to make your ideas widely used. To us "inefficiency" means a theoretical concept "inefficiency", but to the DEA-researchers "inefficiency" is more or less related to the concept "performance", "productivity" etc., and thus "inefficiency" means something what is produced in an efficient way. Another good example on the area from which we could have mutual benefit is Finance.

What then are promising research topics and directions within our field? Behavioral aspects (including preference modeling), structuring decision problems, and decentralized decision making are surely the areas which will play an important role in our field in the future as well. In which form - it is another story. Many other fields may list the same topics as well, but I believe that we have our special flavors for the soup.

Last, I would like to discuss our various "schools" and organizations. We have The International Society on Multiple Criteria Decision Making, The European Working Group "Multicriteria Aid for Decisions", ESIGMA, several national organizations, and organizations focusing on one topic like AHP. Often there is very little communication between the societies. It is a pity, but not a catastrophe as long as we have at least some common activities like special sessions in conferences and summer schools. Especially, it is important that different societies organize summer schools together to the young scientists entering the field. These summer schools provide an excellent opportunities to attend the lectures given by researchers from different "schools", and to observe that there is not only one truth, but the same problem may be approached in several ways. The Ph.D.-students can also see that we do not always agree with everything, and still it is possible to discuss problems in a constructive way. I hope this spirit is kept in Turku this summer, and we also discuss the future of summer schools as a joint activity of various schools.

MCDM has a great past. I hope that we can make a great future as well.