

Answer to Theo Stewart's article
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by

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When one looks backward to find what stands out in the MCDM literature one may distinguish the continuous effort, although not declaratively, to evade normative models of preferences. This is in distinction to DT (Decision Theory) which focuses on and develops such models. MCDM emerged from Operations Research and led to the Pareto frontier and interactive programming followed by decision aiding to shape and stabilize ill-defined preferences. The alternatives advanced to center stage. It is true that preferences are, and will be, always on the stage because, eventually, most of MCDM methods (except mainly those which generate the Pareto set) wish to come up with preferred alternatives. However, it is the difficulty (theoretical or operational) that the decision makers have in expressing "rational" preferences which motivates most MCDM methods. Somehow, human beings refuse to be "rational".

As a methodology which cares about real life and derives many ideas from it, the inclination of MCDM to bypass normative preferences is not surprising. Indeed, realizing the difficulties that DT underwent in experimentation and application this inclination is well justified. One might even say that the flourishing of MCDM is due, at least partially, to the difficulties that DT confronts in application (contrary to its brilliant theoretical achievements).

I was surprised therefore to read Theo Stewart's article (Opinion Makers Section, Newsletter of the European Working Group "Multicriteria Aid for Decisions", series 3, no 2, automne 2000) about "How should MCDA practice respond to behavioral research findings" which gives the impression that the agonizing discrepancies between "decision models ... and the results from behavioral decision science" is new to MCDM. As I suggested above, this is the "raison d'être" for the existence of MCDM methodology in the first place. MCDM methodology exists because of the incomppliance of the decision maker with normative models of preferences. By the way, similar calls were heard before (see references in Editorial MCDA: Theory, Practice and the future" J. Multi-Crit. Decis. Anal. 8: 1-2 1999).

It seems that Theo talks about the problems in utility theory which is backed by an axiomatic system. Only when you have a theory (i.e., scientific theorems) can discrepancy arise. However, no MCDM method, to the best of my knowledge, is backed by such a system of axioms, so they are not vulnerable to any paradox. Many MCDM methods are associated, naturally, with some assumptions, mainly to assure convergence, but they do not claim to be rules to be followed in order to attain the best "rational" decision.

The contribution of MCDM is not in establishing and formulating "rational" preferences but rather in understanding and even complying with revealed preferences. It is about accommodating the revealed preferences without any restriction, whereas normative models are, by their nature, presupposed and

expect a certain behavior on behalf of the decision maker. In MCDM we tailor the suit to the client whereas DT fits one from stock. Understanding is more general than mapping and assessing preference relations. It is less a functional representation of preferences and more an identification of the motivation, desires and expectations in terms of criteria, attributes and alternatives and relating them to each other. As an example consider a situation of a contradiction in preferences. In DT it will start a search into new postulates. Depending on the MCDM method it is either ignored, triggers a new iteration, or, which in my opinion is the right way, motivates a "soul search" for understanding.

Theo rightly observes the failure of constructing a preference model in terms of tradeoffs and value functions and that it "is not so much to refine our decision models any further". Then instead of elaborating he suggests "to gain greater understanding of how judgmental biases in user inputs affect the outputs and recommendations of the model". I doubt that we can do much beyond what we know now. Besides, even if we know the biases it will be a problem to apply them. I believe that we will never fully understand how we make decisions. It seems that Theo shares this opinion when he observes that our methods are "transparent and simple" versus the "infinitely rich complexity of real human judgments". There is a call to balance and integrate them, but this is what researchers are doing all the time. Is not it true that DT is a ping pong game played between behaviorists who find counterexamples and mathematicians who modify the theorems?

MCDM methodology may not be scientific enough (in terms of Popper's) for some researchers. Indeed, the methodology gave rise to a assortment of methods "which work" without a reasonable measure justifying the claim. Nevertheless, MCDM suggests a methodology which is close and tuned to the decision maker and by doing that has its share of "scientific" achievements.

Unfortunately, the flourishing of the MCDM literature has not led to a flood of MCDM applications. However, the reason for that is totally different than those observed in DT. The reason for the failure of many MCDM methods and the success of only few (like AHP) are in spite of circumventing the behavioral discrepancies. I believe that this failure, at least partially, motivated Theo's article (and motivates mine).

Theo is concerned about future research and advancement of MCDM. So let me direct him to his own words in the article. He writes rightly that "the role of MCDA is to support the process of learning and discovery". I cannot accept, however, the end of this sentence about "a satisfactory solution to the decision problem". What is "a satisfactory solution"? What is a solution to a decision problem anyway? This goal of finding a solution is, in my opinion, the source of many of the ad hoc solutions in MCDA (and possibly one of the reasons for the failure of these methods). I guess that "satisfactory" is there to soften any critiques of a solution: we never promised an optimal solution only a satisfactory one.

Let me dare to say that the goal of "finding a satisfactory solution" or even modeling the preferences may block real comprehension of the preferences and creativity. Instead let me suggest another goal (see, among others, my work with J. Buchanan, Solving MCDM Problems: Process Concepts, Journal of Multi-Criteria Decision Analysis 5, 1996, pp. 3-12): to ensure that there exists a good process of decision making and that such a process "will force the decision maker to comprehend his preferences and allow the set of alternatives to be expanded". There is more to decision making than selecting an alternative.