Philosophical Aspects of Incommensurability and Incomparability [*]

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Abstract. Ex ante decision analysis has other problems than ex post analysis. One of the problems is the nature of the value system of the deciding person. Mostly, it will contain different values (criteria, points of view) which are not reducible to one measure. These cases of incommensurability are one reason for the incomparability of the decision options. There are other reasons why it seems highly unrealistic that we may assume the comparability of options as a general case for a rational decision maker.

Key words: multi criteria decision analysis, philosophy, incomparability, incommensurability, rationality.

1. Introduction

Munich wants to participate in the organisation of the world cup 2006. Therefore, the Olympic stadium, built in 1972, has to be adapted to the norms of the FIFA. At the same time, the two great football clubs of Munich (especially Bayern München) want a new stadium which should be optimally designed for football. The mayor of Munich (assuming contrafactually that it is only him who decides) has at least 5 major alternatives:

- A: the smallest adaptation of the Olympic stadium that is necessary to fulfil the norms;
- B: complete reconstruction of the Olympic stadium into a football stadium;
- C: some compromise between A and B;
- D: reconstruction of the nearby Olympic cycle arena into a football arena;
- E: new construction of a football arena on the university's sports grounds.

The decision is guided by 5 points of view: the costs (to the city); the legitimacy of subsidising stadiums that might create violence; the disturbance of the public (noise, ways of access, etc.); architecture and landscape (the Olympic stadium is one of the most renowned buildings of Munich, finely integrated in the Olympic parc); functionality of the stadium (for football matches, for other sports, for music events).

This (short and uncompleted) scenario sets a frame for this article. Are the options commensurable and/or comparable to each other? And under which conditions? How might the mayor claim that his decision is rational?

Philosophers concerned with problems of incommensurability and incomparability are mainly discussing *intra*personal decision problems. In the example, this is reflected by assuming away problems of coalition forming in the city council, etc. Most of the philosophers are interested in the evaluation of specific objects, not of abstract values such as freedom, justice, etc. In the following, I will always talk about the goodness of options for a decision problem at hand, not about goodness of something in general. The philosophical debate about incomparability is marked by three oppositions:

(1) About the plurality of value(s): either there is only one good, or there are plural values that are not reducible to each other. E.g., for Public Choice theorists, everything could be reducible to the one and only good of the mayor's augmented probability of re-election.

(2) About the origin of value(s): they are either objective or subjective; subjective values either are somehow given and not subject to conscious change, or they are constructed by practical reason in the decision process.[1]

(3) About the nature of value(s): 'values' might be the fulfilment of obligations, or something like 'good things' that can help us make our lives better. It is not clear whether the difference about the nature of value(s) makes a difference for decision analysis, and it is not clear how to evaluate the differences if there are some. In this paper which focuses in the philosophical tradition on *intra*personal decision problems, I will leave open the nature of the points of view. The term 'points of view' will be used as an equivalent to the term 'value' which is current in the philosophical debate (even if some philosophers (e.g., Millgram (1997), p. 151) do not know what values are). Both terms will be used equivalently to criteria, thus assuming that the construction of such a decision tool is not hindered by insurmountable difficulties. This means for out football example that the mayor may translate his values into points of view (costs, architecture and landscape, etc.), and those into operational criteria.

It should be helpful for decision analysis to clarify why incomparability exists. A first differentiation is possible in separating (a) epistemic and (b) value spheres.

a) The appearance of incomparability might be due to a degree of complexity that becomes too high. In our example, there are evident links of the football project with housing development schemes, public transport, recreation, etc. Such a type of incomparability could be called technical or epistemic incomparability. This type depends on the evaluated object, but also on the level of knowledge and the capability of reflection – scientists have a better knowledge and are more used to complex systems, but at the same time they see complexity in cases where laypeople observe rather simple relations.

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[1]Cp. the article of Wright and Goodwin (1999) and the following debate. Most practitioners of multi-criteria analysis seem to agree that, in practice, alternatives induce values and vice versa.

b) Incomparability might also be due to the nature of the value system. It is this type of moral incomparability that is in the centre of this paper, and its existence might demand for other rational principles than maximising algorithms[2]. If the mayor is not only interested in his re-election (or any other one good), but in some different values at the same time, or if he can not determine the importance of, e.g., noise avoidance for his re-election, then there is no algorithm that can be maximised. If one takes the existence of incomparable options as a starting point, then maximising paradigms (which presuppose a unique 'good', and, herewith, do not leave place for incomparability) are at best helpful (but normally also biasing) algorithms. *A priori*, maximising paradigms do not seem to be rational ways of deciding between incomparable options.

In this short paper, I cannot go into much detail regarding these problems. Rather, I will analyse the conditions and arguments for the incomparability of options, and the relations between incomparability and different notions of incommensurability.

If, in a first approach and for theoretical or practical reasons, we assume plural and irreducible values, then incomparable options are probable (trivial cases left apart). What does it mean that we decide, nevertheless, between options which appear incomparable? The assumption of revealed preferences deduces comparability from such a factual decision making. This *ex post* statement can not separate rational from a-rational or irrational decisions. The example: The mayor needs a tool that allows him to identify beforehand the rationally best option, i.e., the option that fulfils best his wishes (values, preferences). If these values are plural and irreducible, the following case appears to be relevant: we judge about options that we judge incomparable.

Raz (1997) sees the final decision stage as a-rational, and proposes that wants or the will make us choose option *A* instead of *B*. In many cases, this does not seem plausible (Regan, 1997 and Sunstein, 1997). Anderson (1997) proposes that, in practical cases, the (non-scalar) account of obligations makes it evident which decision to take. She evades the problem of incomparability by a non-scalar way of practical reason (She relies on: without measurement no incommensurability, and without incommensurability no incomparability). But an account of obligations is not always a useful concept in public decision-making. By making incommensurability a necessary condition for incomparability, she avoids technical incomparability, but not necessarily moral incomparability, as we will see later.

In the rest of the paper, I take it for granted that normally, we do not want to renounce scalar measurement, even if we cannot use scalar reasoning in all stages of all decision problems. In the next part, I will differentiate between two notions of incommensurability and examine their links with incomparability. This will be followed by an assessment of reasons for the existence of incomparability.

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[2]The separation between these two types of incomparability is a *prima facie* distinction that might not be justified on further reflection.

2. Incommensurability and Incomparability

In Multicriteria Decision Aid (MCDA – see for an introduction (Vincke, 1989) or more deeply (Roy, 1996)), incomparability mostly means that the analysis of the decision problem does not permit to identify a relation of overall preference or indifference between two or more alternatives. This first definition is sufficient for the moment. Its implication that the identification of preference relations has to be done with regard to some specified, at least ordinally measurable value, serves as the 'main assumption' throughout the paper.

Furthermore, it will be assumed that, normally, it is not possible or not satisfying to evaluate options holistically, but that they are analysed according to some criteria. Hereby, it is not meant that there are plural and irreducible values, but that it is rational to approach a decision problem analytically. In the stadium example, a decision based only on the view of the different architectural models would not be judged rational.

Following Sunstein (1997, p. 238), the term 'incommensurability', will be used as follows: Incommensurability occurs when the options cannot be aligned along a single metric without doing violence to our considered judgements about how these goods are best characterised[3]. It will be useful to split incommensurability into two different notions. Therefore, I will introduce the notions of criterial, and aggregate incommensurability (Fig. 1).

- Criterial (in)commensurability means that the relation of the options A and B on an at least ordinally scalable value (criterion) Φ can (not) be specified. Criterial incommensurability leads necessarily to incomparability, if the criterion is important (I will not consider the case of non-relevant criteria): if the mayor can not measure the options on one and the same scale, e.g., of functionality, then the options are incomparable.

- Aggregate (in)commensurability means that one can (not) find an at least ordinally scalable covering value Γ for different criteria so that the importance of the relevant criteria ρ and π can (not) be determined. In the example, this means that the mayor is (not) able to assess the importance of the five criteria.

If it is possible to find different cardinally scalable criteria that enable jointly an overall judgement of the options, and if the covering value Γ is cardinally scalable, then the assumption of plural values does not produce problems for the comparison of the options (a correspondence in MC analysis is multiple attribute utility theory). Difficulties arise, though, (apart from the trivial case of criterial incommensurability) when the criteria are not cardinally scalable (e.g., ordinal criterial commensurability), and/or when Γ is not

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[3]Some philosophers identify (in)commensurability and (in)comparability, with different implications, though: One group defines commensurability as a necessary condition for rationality, declares most decisions as rational decisions, and concludes that commensurability and comparability of options is the general case. Another group (following Raz) combines the first axiom (commensurability as a necessary condition for rationality) with an understanding of most decisions as a-rational based on something like "mere wants" or "will". For them, rationality (and commensurability) only serves to identify the eligible options that are incomparable to each other.
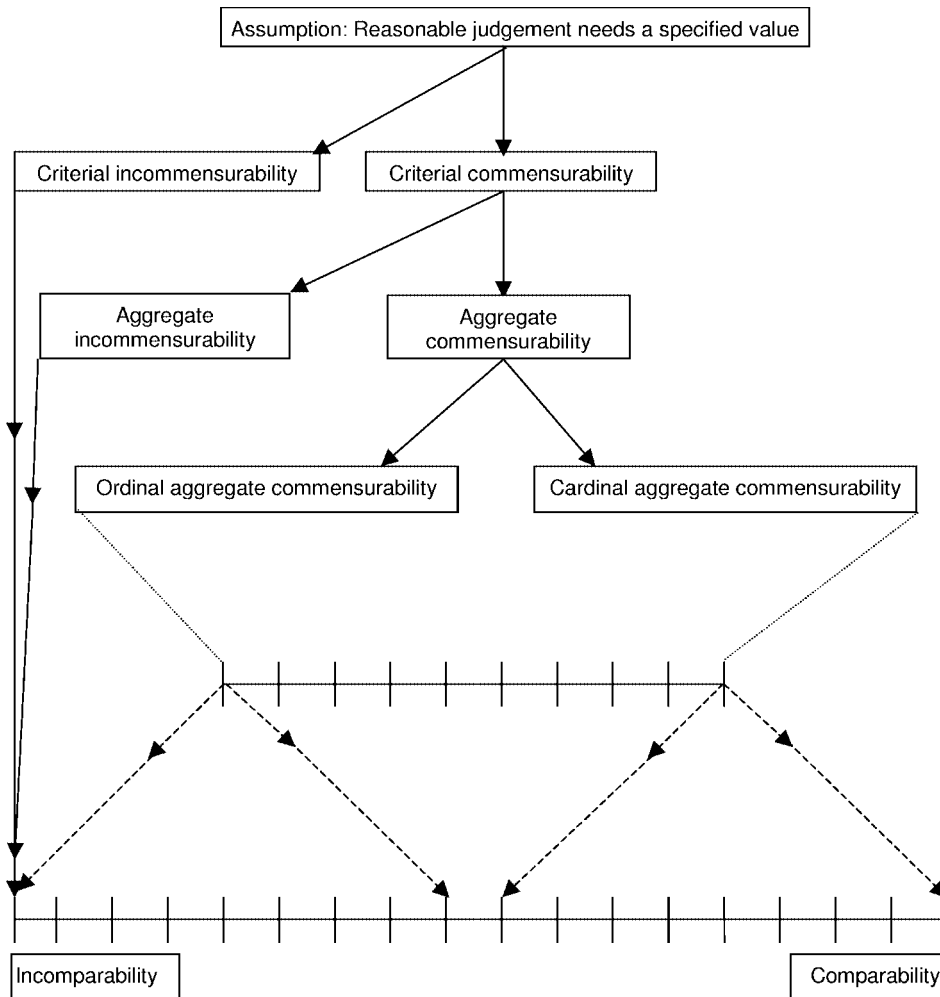
Fig. 1. Taxonomy of (in)commensurabilities leading to (in)comparability.

cardinally scalable (e.g., ordinal aggregate commensurability or aggregate incommensurability).

In the figure, I show the two notions of incommensurability and their relations to the incomparability of the options. The transition from ordinal to cardinal scales, as well as the transition from incomparability to comparability (in the case of more than two options) is represented by a scale. It depends, inter alia, on the scalability of criterial commensurability whether ordinal aggregate commensurability will lead to complete incomparability or only to certain degrees of incomparability.

Some reasons for incomparability may be assessed with the help of this taxonomy. Other reasons (see below Chapter 3, points 4 and 6) cannot be explained by this table. If comparisons only are possible with respect to a value that has been specified sufficiently

to make ordinal judgements reasonable (main assumption), then cases of criterial and aggregate incommensurability are cases of incomparability.

So, if we want to assume comparability of options as a general case for a rational decision maker, we have to assume *inter alia*:

i) existence of the same cardinal criterial evaluations for all options (**cardinal criterial commensurability**), and

ii) existence of a covering value and of a cardinal ranking of the decision criteria onto it (**cardinal aggregate commensurability**).

A closer look to some definitions of incomparability will be necessary before analysing the reasons for its relevance.

- Roy (1996, p. 87) defines incomparability as the absence of clear and positive reasons that justify any of the three relations indifference, strict preference, and weak preference. This residual definition of incomparability certainly is useful to practical decision aid, but it might be helpful to have a closer look on the cases of and the reasons for incomparability. Beforehand, it is not evident what clear and positive reasons are.

- The definition of Chang (1997, p. 6) looks similar to Roy's: "[T]wo items are incomparable with respect to a covering value if, for every positive value relation relativized to that covering value, it is not true that it holds between them". Her definition accentuates the necessary connection of the value relation to a certain value, which she calls the covering value. She enlarges the traditional relations of preference and indifference by the relation 'on a par' (Chang, 1997, p. 25–27). She defines this relation as a nonzero evaluative difference that neither favours nor disfavours an option. By including this relation she wishes to exclude all cases of incomparability. This would be the case if incomparability would arise only out of a special type of scalar reasoning. As we will see below (Chapter 3, point 6), the relation 'on a par' does not cover all cases of incomparability. Furthermore, the significance of the introduction of 'on a par' for practical decision making is not clear, as its definition amounts to the same thing as the description of incomparability in practical decision problems.

Two positive definitions might be mentioned:

- Griffin (1986, p. 80) speaks of incomparability, when we decide that values are unrankable. Without a closer specification of 'unrankability', it is tempting to suppose that unrankability is just the absence of preference and indifference: thus, we would come back to something like the residual definition of Roy.

- Chang (1997, p. 24) formalised an argument of Raz into a definition of incomparability: "In general, if (1) A is neither better nor worse than B (2) $A+$ is better than A, and (3) $A+$ is not better than B, then (4) A and B are incomparable." There might be some incomparable options for which this definition holds, but it also holds for options which do differ so little that the difference does not matter to us (this phenomenon is treated in MCDA literature as 'preference thresholds'). It is certainly helpful to differentiate these cases of 'vague equality' from those of incomparability.

- Incomparability in a colloquial sense should not be disregarded immediately. The colloquial statement 'The aesthetic quality of the Olympic park is incomparably more valuable than a higher football functionality' has different interpretations: 'Incomparably more' might be used as a synonym to 'very much more'. The rightness of this interpretation could be unveiled by putting the speaker in front of different choices. It would certainly be possible to find trade-offs in dealing with a small aesthetic deterioration and large improvement in functionality. 'Incomparably more' might also be interpreted as a synonym to 'incommensurable to', as Sunstein (1997) suggests. Both goods can not be measured on the same scale, the measurement in functionality is inappropriate to aesthetic values (and both to money). This interpretation will be explained below.

For the moment, no definition appears completely convincing. The next chapter analyses reasons for incomparability. This will elucidate differences between the definitions given above.

3. Arguments for Incomparability

Some parts of the following list of arguments for incomparability are based on a literature survey made by Chang (1997). The arguments are mostly characterised with the help of the two notions of incommensurability, and confronted with the main objections against them.

1. The '**diversity of values without covering value**' argument: the contributory values are so different that no covering value could be found, i.e., it is argued for a case of aggregate incommensurability due to the diversity of values. A standard example for this: what shall I do – maw the lawn of my apartment house (meet my obligations) or go to cinema with Jane (her and my pleasure)? As stated in the introduction, the ideas about the nature and plurality of contributory values differ. Harsanyi (1997, p. 139), for example, proposes the following list of "good things" (that can help us make our lives better from our own point of view): "Material comfort; physical security; freedom to control our own lives; good health; a job suitable for our personal abilities and interests; deep personal relations in mutual love, in marriage, and in true friendship; to have children and to be a good parent; to achieve better understanding of the world and of our place in the world; enjoyment of beauty in nature and in art; to have worthwhile accomplishments of some kind; and to make our own behavior consistent with our moral values". A similar list could be drawn up concerning obligations. One argument against incomparability arising out of diversity is the following: most of the non-trivial decisions are made up by such a conflict, and we have to, and we do decide in these cases. These decisions cannot all be non-rational. But this 'factual' argument against incomparability is not convincing, as the fact of making an (*ex post* rationalised) decision does not tell anything about its rationality or rightness.

   The argument that there is some covering value, even if we cannot specify it, seems to be more appropriate – Chang (1997, p. 32) speaks of nameless covering values.

To speak of nameless covering values, or to take a name without material content such as 'preferences' comes very close to the 'factual' argument against incomparability. Chang calls the phenomenon of finding no covering value 'noncomparability', and defines it as a formal failure of comparison. Incomparability, on the other hand, is a substantive failure (ibid.: p. 28): Two items are comparable or incomparable if the pair belongs to the domain of application of the comparability predicate; they are noncomparable if it does not. I do not see the use of this differentiation for practical decision making. The difficulties for the decision maker are the same whether (1) she knows that there is some covering value, but she cannot name it, and, consequently, cannot determine the relative importance (weights) of the contributory values (incomparability), or whether (2) she just knows the contributory values without a covering value (noncomparability).

The argument that there is a (potentially unknown) covering value above the *prima facie* important contributory values, is not convincing.

2. The '**diversity with covering value**' argument is sometimes confounded with the first diversity argument (e.g., Chang, 1997). It states that incomparability may appear, even if one has identified a covering value and contributory values, but when the contributory values are too diverse. A standard example is the comparison between Michelangelo and Mozart with respect to their goodness as an artist. I can neither say that one was better than the other nor that both were equally good artists. Here, we have the ordinally scaled criteria 'good composer' and 'good sculptor', but cannot determine how to weigh the criteria with respect to the covering value 'good artist'. Nevertheless, we are able to state that Mozart and Michelangelo were better artists than I would be (if I would try these arts).

Chang and Broome (both 1997) try to solve this puzzle by the nominal-notable argument: according to them, it is possible to build a range between the nominal artist (me) and the notable artist (Mozart). If Michelangelo may be compared to me, then there is no reason why this comparability should stop somewhere on the range between me and Mozart – so we should be able to compare Michelangelo to Mozart. It is possible to reconstruct this argument differently: As long as a covering value is distinguished, contributory values may be identified. Then, it is possible to detect a point close to zero (nominal), as well as a point close to maximum (notable) of each contributory value. It is not necessary to assign explicit weights to the contributory values, but a (range of) weight(s) can be deduced from decisions about comparable options (Michelangelo and me). Following this nominal-notable argument, these cases of incomparability would then result in something like 'indifference', 'rough equality' (Griffin, 1997, p. 38), or 'on a par' (Chang, 1997, p. 25). This argument against 'diversity with covering value' causing incomparability is theoretically valid for traditional preference orderings. As will be shown in the next points, it is not clear, though, that we may take traditional preference orderings as starting points.

3. The '**bidirectionality' of comparative merits** argument: this argument is well-known to MCDA. It is another claim of aggregate incommensurability. Incompara-

bility appears when option *A* is valued high on criterion *E*, and low on Φ, whereas option *B* is valued oppositely; due to this 'bidirectionality', *A* and *B* are incomparable.

Different reasons might lead to the claim of incomparability of *A* and *B* due to their bidirectionality:

a) aggregate commensurability and lack of reflection;

b) aggregate commensurability and misinterpretation of indifference as incomparability;

c) commensurability with restrictions (fuzzy weights of criteria and minimum requirements on credibility, veto thresholds, combination of ordinal aggregate and ordinal criterial commensurability, etc.);

d) aggregate incommensurability, justified by the diversity of values without a covering value or by the claim of non-scalar reasoning.

In the cases (c) and (d), incomparability can be justified. Reasons for the restrictions in (c) will not be given here[4], and on (d), see point 4 below.

4. The **'noncalculative' practical deliberation** argument: Anderson (1997) denies the importance of incommensurability and incomparability for two reasons: First, rational choice is guided by value judgements otherwise than by statements of value relations (expressive theory of rational choice). Second, the structure of value is generated by practical reason itself (pragmatism). "Pragmatism implies that goods are incommensurable whenever we have no reason to compare their values in practice." (ibid.: p. 91). Anderson argues in a Kantian tradition that our decisions are not guided by values that are somehow external to our reason, but that our practical reason guides our values. We do not optimize values; for example, it does not make sense to aggregate our parental love for one child with that for another (and still less with our filial love towards our parents). "We justify actions not in terms of the value of the consequences, but in terms of the values of the people concerned with them, regard for which we express in principles that take a distributive rather than an optimizing form and that are often embodied in claims of right and obligation" (ibid.: p. 106). Anderson does not acknowledge our assumption that a reasonable judgement needs a specified value (see Fig. 1), but assumes that reason creates the values it needs without aggregating, optimizing, etc.

But the argument is not convincing for all cases. The use of scalars facilitates the integration of quantitative scientific results, and makes the decision process more comprehensive to oneself and to others. Using scalars forces the decision maker to make not only his reasons explicit, but also their respective weights (or to justify the non-existence of weights or scalars). In decision making, scalars play some role, but they are not externally given and should surely not always be used as crisp cardinal numbers. In cases of "calculative deliberation" which lead to incommensurability and to incomparability, it is certainly necessary to deliberate without

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[4] See for example (Munda, 1995) for the first example and (Roy, 1996) for the second.

calculi or with as few as possible in order to come to a rational decision (with a problem, though: once the calculi exist, it is difficult to come back to non-scalar reasoning).

5. **Constitutive features** of certain goods, **or** the **norms** governing appropriate attitudes toward them: this is just a special case of the first 'diversity' argument. It means that parental love is defined such that it prohibits the measurement of the child's life with money (it is a constitutive feature of parental love not to be measured with money). Here, we cannot find a covering value (apart from something like 'sense of life', or the Moore'an 'good'). Others argue that aggregate incommensurability might be "constitutive of some forms of freedom, and these forms are not easily dispensable. The presence of incommensurability helps make possible certain relationships, attachments, and attitudes that otherwise would be unavailable" (Sunstein, 1997, p. 242).

This argument gives a reason why it is not possible to find a covering value. This is the reason why Chang's critique of this argument fails: "constitution and norm arguments misunderstand emphatic betterness as incomparability" (Chang, 1997, p. 21). Emphatic betterness of what? It can at best be an unknown covering value. Pragmatists as Anderson argue that the question 'your child's life against a certain amount of money' is the wrong question, and that we have to look closer at the context and at the different obligations and rights. Others might say that it is self-deception not to want to measure different values on a covering value consciously. We should, they say, face the reality that we trade a 1 % higher mortality rate of our child for x Euro. According to Sunstein, incommensurability may not be translated (as Regan (1997) does) as a sharp quantitative difference in value but as a refusal "to do violence to the way that they value the good (a child, a vote, a body part) in question" (Sunstein, 1997, p. 242).

People often show both attitudes (refusal and trade-off), sometimes even in the same questionnaire (Stevens *et al.*, 1991), without indicating which one is more important. Given that both attitudes are present – is it more rational to trade off, resp. to decline any trade-off, or to decline on one hand and trade on the other? Neither of the two choices satisfies the decision maker. Outranking procedures of MCDA (see Roy, 1996) allow for softer forms of compensation with more differentiation between the values in question.

6. The argument of the **multiplicity of legitimate rankings** of the alternatives[5]: incomparability holds if there are multiple legitimate and contradicting rankings of items and if none of them is privileged. There are at least three reasons for the multiplicity:

   a. The decision maker has different preference orderings (POs) according to, e.g., his societal role, but he has to make a decision in his joint function of football supporter and mayor.

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[5]I am grateful to Wlodek Rabinowicz for the indication of this possible reason for incomparability.

b. The decision maker cannot determine his values with sufficient precision (Hansson, 1996): He may feel well as a mayor with a financially better-off city, but also as with a new and splendid football arena (both in one year's time). After some time, he will have adapted his preferences to the new situation (Finnis, 1997, p. 220).

c. The case of interpersonal aggregation as a question of social decision making will not be examined in this paper. There is, however, interpersonal aggregation in the case of an internal (altruistic) consideration of other's POs. In this case, each of the persons might even have only one complete personal PO, but different aggregations procedures (which might be incomparable, or between which the decision maker is indifferent) yield different rankings. The mayor could be indecisive between an aggregation of his voters' preferences as they are, or as they will be or should be.

4 possible results can be obtained from such a multiplicity of different rankings:

i) comparability: all preference orderings indicate the same ranking;

ii) incomparability: the action A dominating PO_1 is only dominated by the action B dominating PO_2, and vice versa $\Rightarrow$ both dominating actions are wrong (descriptive approach [6]) or right (constructive approach [7]);

iii) vague equality: the action dominating PO_1 is roughly equal, i.e., their criterial evaluations differ only little or not at all compared to the action dominating PO_2 $\Rightarrow$ the rightness of the two actions is indeterminate[8];

iv) vague incomparability: two options are roughly equal according to two POs in the set of preference orderings, and incomparable according to another combination of two POs $\Rightarrow$ the options are wrong and indeterminate (descriptive approach), or right and indeterminate (constructive approach).

This last argument shows that the conditions mentioned above are not sufficient for the exclusion of the incomparability of options. We have to add a third condition:

iii) unambiguity of the ranking resulting from the preference orderings of the dm.

It seems highly unrealistic that these three conditions are met simultaneously.

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[6]As the descriptive approach starts from an existing and formed (set of) PO(s) (Korhonen and Wallenius, 1996), the conditions on the rightness of actions are stronger than in the case of a constructive approach where incomparabilities are also due to the incoherence of the PO(s). The constructive approach focuses on the organising effect of a decision analysis on the (set of) PO(s) (Roy, 1996, p. 223–229; Roy and Mousseau, 1996, p. 156; Bana e Costa and Pirlot, 1997). The difference is reflected in the normative implications: 1. Descriptive approach: An Action A is right iff it is not dominated by another action B. It is wrong otherwise. 2. Constructive approach: an action A is right iff it is only dominated by an action B that is dominated by A. It is wrong otherwise.

[7]Millgram (1997, p. 155) thinks, nevertheless, that in choosing between incomparables one's choice will not be wrong.

[8]I am conscious that I would need either a(nother) PO, a somehow objective standpoint, or a measurement of the strength of the preferences in order to determine that a difference is a small or a large difference.

4. Conclusion

There are some arguments for the moral incomparability of options that are convincing: The 'diversity without covering value' argument, restrictions on aggregate commensurability, and some forms of the 'multiplicity' argument. Their proponents argue from within the limits of calculative practical reason. It should therefore not astonish us that some options are incomparable to us. The arguments make clear that this is not only an interpersonal problem, but also an *intra*personal difficulty for rational decision making. I subsumed further reasons for incomparability under the notion of 'technical incomparability' (see Hansson (1996) for a philosophical survey on this subject).

I put forward several convincing arguments why incomparability is more frequent than the predominant decision theories make us believe. There are many cases, to take up the incomparability definition of Roy, in which it is not possible to establish clear and positive reasons that justify any of the three relations indifference, strict preference, and weak preference.

For decision aid, it is therefore not helpful to maintain the image of a decision maker using full rationality. Nevertheless, we have to develop a conception of decision maker's rationality in order to give normative power to decision aid. With multi criteria and other decision tools, we influence the decision maker and the decisions; as responsible analysts, we have to be clear and to make our models' assumptions obvious – of nature and of man. This is the most evident condition of scientific responsibility. Furthermore, in social sciences, models can not be value free. They are value laden and we, as analysts, are in a permanent tension between the decision maker's and our own values. This knowledge is – or should be – common place, but it has to be reflected not only in the singular decision case, but also in the conception of the decision maker's rationality while constructing a decision tool.

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F. Rauschmayer has been working for the last 7 years on questions concerning the relation between economics and the natural environment. In his graduation thesis (in economics), he elaborated on the topic of economic valuation of nature and ethical and methodological critics of the monetarisation of nature. In his doctoral dissertation (also in economics), he focussed this conflict firstly by having a closer look to the politics and decision-making in nature preservation, and secondly by going into more methodological details of proposed decision tools in ecology, land planning and economics. Confronting these tools with ethical reflections was a major task. This lead him to multi-criteria decision aid as a tool that allows to integrate results from different disciplines without loosing the normative foundation which is necessary if one wants to recommend a decision. In the last 18 months, when he worked in the philosophical institute of the University of Leipzig, he refined his philosophical arguments concerning rationality, incommensurability of criteria and incomparability of options. Starting in April 2001, Dr. Rauschmayer will work as a research fellow in the centre for environmental research (Umweltforschungszentrum) in Leipzig. Here, he will put methodological propositions concerning the ethical foundation of multicriteria decision aid into practice, i.e., into decisions concerning nature preservation in a context of sustainable development as a co-evaluation of social, economic and ecological states.

Filosofiniai nebendramatiškumo ir nepalyginamumo aspektai

Felix RAUSCHMAYER

Analizuojant ex ante sprendimus kyla daugiau problemų negu ex post analizėje. Sprendimų priėmėjo vertinimų sistemos prigimties, išreiškiamos skirtingais, nesuvedamais į vieną matą būdais (kriterijai, požiūriai), tyrimas yra gana svarbi problema. Taigi, nebendramatiškumas yra pagrindinis nepalyginamumo šaltinis. Todėl negalima tvirtinti, kad racionalaus sprendimų priėmėjo požiūriu palyginamumas visada gali būti apibrėžtas. Šiame straipsnyje bandoma išnagrinėti nebendramatiškumo ir nepalyginamumo santykį racionalių sprendimų priėmimo požiūriu. Pateikiami keli metodai ir aptariamas jų efektyvumas.