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*“...collective action must be, under our postulate,  
composed of individual actions.”*

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### **Can Public Participation lead to an increase in the efficiency and effectiveness of decision making? A preliminary assessment of the relevant concepts.**

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#### **Abstract**

This paper outlines a theoretic concept for combining the notion of deliberative democracy and constitutional economics for the implementation of public participation. Due to inefficiencies in decision making in natural hazard management, the main hypothesis is that public participation can lead to an increase in efficiency and effectiveness in natural hazard management decisions. This hypothesis is tested twofold, on a theoretical and an empirical basis. This paper will focus on the first one and conclude with a proposition of a method that can be capable of combining the two theoretic concepts through compromising between process and outcome based decision making.

This version of the paper does not include the empirical part since this will be subject of a separate paper. Nonetheless, a few comments on the empirical work will be made during the presentation.

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## *I. Introduction*

Decisions made in natural hazard management in general and for protective measures in specific, can be characterised as environmental decisions, not only because the issue in question is nature, but also because of the characteristics generally known from environmental decisions. Environmental decisions affect a multiplicity of parties, from individuals to organisations of producers and consumers. From a socio economic perspective the environment is a public good. Contrary to private goods, there is no market which takes over the decision process for allocating the goods. This market failure with public goods is compensated by the state taking over the decision responsibility whereby a choice has to be made how to decide collectively, e.g. how to organise a democracy. In the case of environmental issues, and therefore protective measures against natural hazards, politicians are confronted with a complex choice. Also, the modes of environmental decision making, as well as the underlying assumptions, tools and criteria are highly diverse and add on to this complexity in decision making. Taking protection measures as an example: for the proper installation of avalanche protection measures the civic, geological, legal or meteorological experts' opinions have to be considered as well as environmental, economic, ecological and social criteria regarded. Therefore, the information structure is complex as well as the interests highly conflicting. Hence, the critical question is whether the decision on protection measures should be left to public participation or should remain in the experts' decision responsibility.

The latter is the current mode of decision making in Austria, where the law on forestry stipulates that (§104.(5)) the *Federal Service for Torrent, Erosion and Avalanche Control (WLV)* is responsible for the proper protection and thus instalment of protection measures against natural hazards (except for water related protection measures which is regulated in the Austrian water rights legislation). It can currently be observed that this mode, as already mentioned in the beginning, shows inefficiencies since demand for protection measures is higher than its supply. Budget restrictions are one reason, but an improvement in efficiency might come about through a change in decision making. In this paper it is argued that participation might be one way to bring about this desired goal. This paper offers a discussion of the relevant political economic concepts in order to introduce the thought that participation (as described in the theory of deliberative democracy) can increase efficiency through achieving the pareto criterion claimed in

constitutional economics. This work will later be followed by an empirical study about current influence of participation in Austria's and Switzerland's decision making in natural hazard issues (current work in progress). The discussion will lead into the proposition of a new environmental economic method, namely Multi Criteria Decision Aid that could as a decision rule be an alternative way to implement participation into practice while at the same time fulfil the requirements of the democratic ideal.

## *II. Political Economic Theory*

As Mouffe (2000) claims in an introduction to one of his articles on democratic theory, it can currently be observed that there is large discontentment among the 'governed' people in liberal democratic systems in the Western world. People appear to feel more and more misaligned with current actions taken from parties and their respective representatives; that means people do not feel that their preferences are represented in the political decisions taken.

One thing seems to be evident. Democracy, from its early routes in Athens, aims at organising the coexistence of large groups of people and representing their will in the decisions stemming out of its mechanism. Instead of the market as a possible decision mechanism, where one is confronted with a simple exchange problem between two affected parties about a private good or service, democracy faces the problem of bringing together a multiplicity of interests in the instalment and organisation of public goods and services. In the market-case it is a fairly simple matter of one buyer and one seller that are both looking for mutual gains in their trades. In a collective decision beneficiaries and bearers of the costs following a 'trade' are numerous.

This paper aims at looking how democracy operates in order to bring about decisions that reflect individual preferences. From an economist's and a political scientist's perspective, it can be said that unanimity, the case where all individuals decide unanimously, is the ultimate state democracy is aiming at. In the economist's view unanimity represents a pareto-superior situation where everyone benefits from a decision and, in the political scientist's view unanimity is what they call the 'ultimate truth statement'. Now, there are two specific research disciplines behind the views that can be presented here. The first idea of pareto-superiority is, among others, represented in the concept of constitutional economics, the second one in the political science theory of

deliberative democracy, and of course in many other democratic theories that are dispensed with here.

In the following, it will be shown how both concepts approach the idea of preference representation in political decision making and what role unanimity plays in their objectives. In order to understand these viewpoints, the present paper will start off by analysing the different behavioural assumptions about individuals as decision makers in politics. This understanding will be the key to the evaluation on how the two methodologies approach the problems of conflicting preferences and actual achievement of consensus. Following that, both schools of thought will be presented in a concise manner. Since both show their problems in being implemented to what one can call 'day-to-day politics', the aim of this paper is to show where both ideals appear to have their weaknesses but also strengths in increasing the contentment, and therefore the level of achievement of individuals' preference representation.

At the beginning though, some behavioural assumptions of the individual in politics are analysed in order to understand the two approaches' origins and their subsequent modelling. This differentiation is important to make since deliberative democracy, among others, emerged from the critique of behavioural assumptions in politics stemming from economic theories. Therefore the differentiation between the political and the economic approach to individual behaviour in politics is indispensable for the subsequent discussion.

Following this theoretic introduction to the economic approaches to public participation, a practical tool, namely Multi-Criteria-Analysis that is currently applied to a wide range of application areas, will be presented to show how participation can be alternatively implemented into practice on a day-to-day political basis as well as how a tool can serve both economic approaches, the output-oriented one known from welfare economics as well as the process oriented one commonly associated with constitutional economics.

### *III. General Behavioural Assumptions of the individual in politics*

In conventional economics, it is assumed that individuals are rational, have stable preferences and act according to their own utility function, i.e. maximizing their own welfare.

If economic assumptions such as that every individual acts according to its own interests holds true for society life as well, the question is whether a peaceful society that is based on the compliance with certain rules is even possible. The logical consequence of economics is to say that individuals need incentives in order to behave in the way e.g. a functioning society is asking them to. Even though individuals may seem to behave that way automatically in the market place, even though they only seek their own maximisation of welfare (given their resource restrictions), this is not quite the case. Even in the market, there are incentives that make individuals behave the way they do. As a consequence, the assumption that they act according to their own interests seems to hold true (in the eyes of an economist) in all areas of an individual's life. This, in turn, means that in order so to make a society work for all, incentives need to be created in order so that individuals comply with rules.

So, the classical economic approach looks at citizens' behaviour in politics in terms of their usual acting in a market. The underlying assumptions consist of the rational-choice model that, in this respect, assumes citizens to be passive consumers whose democratic influence manifests in voting only.

As a consequence, deliberation of the public does not exist and preferences of the civic are based on aggregative models.

Social Choice theories make similar assumptions about the individual in politics. They also depart from the ideal that individuals are rational and have stable preferences that can together make up decisions for the common good by aggregating them. The problem with these theories is that individuals do not directly express their preferences and the outcome of these aggregation procedures could then lead to a decision result that no one is satisfied with (Elster, 1997).

This situation does neither fulfil the economic criterion of a political decision that no one is made worse off (like market actions achieve among the cooperating partners) nor the political ideal to perform just actions in the interest of all citizens.

After having outlined these assumptions, it seems that there are a few problems arising if the theory of politics or the organisation of life among all individuals is based on individual welfare economic assumptions. If these assumptions are taken up in order so to create common decisions for the common good, we saw that social choice theory can produce outcomes that may not always be desired by the citizens. But how can this conflict be resolved if individuals really behave according to this economic concept?

Rather than assuming given preferences and the possibility of aggregation and filtering of preferences, the original democratic ideal brings in a new perspective on things. The underlying hypothesis of original democratic thought was that politics are about open and public activities distinct from the isolated and private expression of preferences that occurs on the market (Elster, 1997). The theory of deliberative democracy that is rooted in the ideal of discourse ethics takes up these original democratic thoughts by assuming that preferences can be transformed by public debates and confrontation of different individuals having different views. In some sense, the individual behaviour then takes up a picture of an informed political person that is considering others and not just herself when taking a political rather than an individual decision. Politics then turn out to have educative effects on the participants and can possibly lead to a preference for public life (Elster, 1997).

These two very distinct behavioural assumptions play a profound role for the underlying two paradigms of this paper. After briefly outlining the key characteristics of both concepts, it will be discussed where and how they are similar to one another as well as what potential emerges if the two concepts want to be combined along certain characteristics.

#### *IV. The two underlying concepts*

##### IV.1 Constitutional Economics

Inspired by the liberal and democratic legitimisation principle of unanimity, Buchanan became one of the vanguards to transform the economic thought of market principles to the political spectrum. In his eyes, the private exchange situations of the market, where two actors have to agree unanimously in order for an exchange to take place, equally occur in politics. In a political environment, the exchange may be more complex, it nonetheless prevails: the state exchanges its activities with the citizens; therefore unanimous consent among all citizens is required for a state to act (Buchanan, 1962, 1987a, 1987b).

The problem with this ideal arises when politicians do not actually act the way citizens would want them to. Hence, constitutional economics can be understood as the

paradigm that looks at situations in which politicians behave in favour of or against the welfare of the citizens. It does so by establishing rules<sup>2</sup> in order so to restrict and lead rational politicians towards the desired end. Institutions become the focus point of the analysis.

Again, equal to the market place, rules design the way competition takes place and the way consumers (citizens) are served by producers (politicians).

The difference, though, is that different institutional arrangements are not measured against the efficiency criterion known from the market but rather undergo comparative analyses and also a unanimity criterion test (see more detailed arguments on the difference between process and outcome criteria below in this paper). According to the latter, actions and their results are only legitimate if and only if they took place under legitimate rules. And again rules are only legitimate if they were established under legitimate rules. This continuum ends at the establishment of meta-rules that create the legitimacy for all following rules and actions. This legitimacy can only be gained through the unanimous agreement of all citizens (Buchanan 1987a, 1987b).

The key to the actual achievement of such a consensus lies in finding levels of rules that are abstract enough. Pies and Leschke (1996) give an explaining example for this: it does not make sense to ask a criminal whether he prefers a legal or illegal way of earning his salary since the answer is already manifested in his behaviour. The same criminal will however agree that a method where everyone should obey a legal system should be preferred over one where everyone acts against the law since the criminal is the one that benefits of a situation where everyone else complies with the law.

As a consequence, constitutional economics aims at presenting alternative rules on which a ballot is taken and finally a unanimously agreed rule chosen. Consensus is therefore not a simple ideal that can not be reached in reality, but rather a realistic goal that determines the best outcome for everyone. In economic terms, unanimous agreement can be seen as a pareto-optimal situation where everyone is made better off (otherwise, it is assumed, that she would not agree to a certain rule).

This criterion of pareto-optimality that results from a consensual agreement is a similar measure applied to the efficiency criterion in welfare economics. The difference that Buchanan always emphasises though is that in welfare economics the pareto-criterion has developed as an outcome criterion (e.g. a successful exchange of goods between

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<sup>2</sup> Buchanan (1991) defines rules as „the institutional-constitutional structure that constrains the workings of politics.“

parties results in a pareto-optimum) rather than as a process criterion (e.g. the exchange process itself is pareto-superior). In constitutional economics, Buchanan wants to emphasise that the pareto-criterion is an important measure since every rule applied has to find agreement among all in order so that it can be implemented. Other than in welfare economics though, Buchanan emphasises the need that focus is laid on the process itself, therefore the pareto-superiority criterion, rather than the outcome itself (Buchanan, 1986).

Therefore, this internal process criterion takes up an important discourse function in politics. In order to reach consensus and therefore pareto-superiority, conflicts among citizens have to be resolved. This again means that discourse needs to take place. The function and form of discourse in constitutional economics is therefore an interesting and important part and will thus be considered more detailed latter in this paper.

Rawls (1999) suggests that public reason, which means the active involvement of the public in politics, is only needed on certain levels. What constitutional economists might call the meta-decision level is described as fundamental matters such as constitutional essentials or questions of basic justice by Rawls. In his paper from 1997, Rawls defines constitutional essential more closely, looking at it as government structure or the political process as well as basic rights and liberties of the public (Rawls, 1997).

Addressing all questions through public reason would e.g. mean to include questions of specific tax legislations. However, Rawls (1999) acknowledges the fact that active public reasoning is desirable in all questions concerning the public. He nonetheless argues that in some ways public reason takes place on all levels of decision making since e.g. judges or political parties can be seen as part of the public reason since they have to represent what is perceived as right according to the constitution and legislation.

So the key of Rawls' elaborations, and this is closely linked to the idea of constitutional economics, is the differentiation of different decision levels. Public reason and therefore participation is essential in creating the fundamentals in a society in terms of politics (i.e. the constitution). Based on these foundation pillars, day-to-day politics and lower ranked decisions on laws and rules can be conducted (Rawls, 1997).

Another close link to the ideal of constitutional economics builds Rawls' idea of consensus. He claims that on fundamental issues, hence the constitution, the public needs to assent in order so that the public reasoning, for example, gains legitimacy and can build the basis for all political considerations and questions thereafter (Rawls, 1997).

Rousseau takes a similar step here by saying that the majority rule can only then be applied if the public consensually agreed on it. As a consequence of this, Rousseau acknowledges the fact that the public can only insofar influence politics in that it takes part in establishing the decision rules. The public consequently has only an indirect influence on the final outcome of politics (Estlund, 1997).

One objection raised against constitutional economics is the one of the original point of the setting of constitutions. In all these discussions, authors assume that societies create constitutions within which frames for day-to-day politics and lower levelled rules and laws are established. Furthermore, it is assumed that these societies unanimously agree to these fundamental pillars and act according to them. The problem is what sort of consensus is being claimed here if each generation is born into constitutions others have made for them. So, first of all, they did not directly agree to them consensually and secondly, it is the question at what point the rules for the rules, hence the origins, were established.

Before these open questions will be addressed, the concept of deliberative democracy will first be described in order so to introduce parts of the idea to possible solutions.

## IV.2 Deliberative Democracy

Deliberative democracy has emerged during the last two decades. It arose in the 1970's and emerged as a new political theory in the 1980's where society became to realise that politics was something they had no control over (i.e. the war in Vietnam), which lead to great dissatisfaction. The call from some theorists for more participatory politics that can bring about more consensual forms of government became to enjoy popularity. Instead of looking at politics in an economic way where rational choice prevails and aggregation of preferences is undertaken, deliberative democracy pled for more actively taking part in politics on the affected parties' sides (Bohman/Rehg, 1997).

So, deliberative democracy can generally be defined as "the idea that legitimate lawmaking issues from the public deliberation of citizens" (Bohman/Rehg, 1997) or in a broader sense, as "an association whose affairs are governed by the public deliberation of its members" (Cohen, 1997). Or, more radically, as Habermas (1992) puts it, politics can only work and gain a legitimate status if constant participation of the public in the

political process is exercised. And again, for decided upon laws to be legitimate, they furthermore have to be reached by a consensus.

According to Cohen (1997), the ideals of deliberative democracy can be traced back to the democratic ideals described by Rawls whose viewpoint is that democratic politics consist of debating about different ways of organising public goods.

Rawls' normative strand goes along the ideals of deliberative democracy. In his view, discussions in politics for the installation of public goods need to be taken from a public standpoint, rather than a narrow, interest group specific one. The core then lies in developing the conception for public goods in the discussion with all involved people. Furthermore, these people need to be valued as equals, no matter what economic or social background they appear to have. In order to achieve this, Rawls suggestions reach from progressive tax measures over public financing of parties and the securing that political issues are not primarily formed by economically and socially dominant groups. In general, politics are required to contribute to a sense of justice (Rawls, 1971). In another piece, Rawls (1999) describes some behavioural assumptions that people need to adopt in order so that deliberative democracy can achieve its ideals. Calling it public reason, Rawls believes that people first of all can and should always be able to exercise political power based on the prevailing constitution. In order for this participation to be legitimate, people should adopt a moral that implies the ability to explain opinions to one another as well as to listen to what the counterpart is saying. As a result a fair mind-set can bring people to change their opinion as far as others bring arguments that persuade them enough.

These conditions for a deliberative democracy need to exist in order so that participation rights and consequently fair distribution as designed in constitutions can be put forward. The conditions make up the ideal for achieving collective decisions, namely by establishing an ideal of deliberation for social and political institutions. Cohen (1997) shares this ideal for finding solutions to collective choice situations and furthermore claims, that all participating members need to regard the basic institutions that regulate free public deliberation as legitimate. Moreover, Cohen believes that besides this, deliberative democracy is characterised by people accepting it as an ongoing (also in the future) and independent association whose results they believe to be the product of their deliberation. In Cohen's conception, deliberative democracy accepts the reality, namely that diverging preferences and aims come together in social choice situations, nonetheless, members aim at finding deliberative solutions rather than fulfilling solely

their own aims. This requires that members trust in each other's deliberative capacities as well as believes that deliberations and outcomes are evident (Cohen, 1997).

Apart from the theoretic model, Cohen (1997) tries to bring the concept of deliberative democracy more down to the application in actual political decision making. He does that by describing the ideal deliberative procedure. This procedure is characterised by a proposal of alternative solutions to the problems on the agenda, the support of those solutions with reason and the conclusion which comprises the decision in favour of one of the alternatives. The fundamental goal all efforts are aimed to achieve in this procedure and therefore the concept of deliberative democracy is that of rational consensus.

The way this rationality can be explained is by looking at Habermas' ideal of deliberation that claims the only thing that can make that process work is when everyone strives for good arguments in order so that others can agree on a specific concept. That means in the end, the better argument counts (Habermas, 1975). In that way, it is rational for members that have so far had different opinions to agree on a consensual solution since the other offer had better arguments than their own in favour of its implementation.

Cohen (1997) admits that this consensus might not be reached at all times. If this is not the case, deliberative democracy installs voting rules.

One would think that at this point, deliberative democracy reaches its ideal's limits and arrives at the same solution as the aggregative collective choice model. However, Cohen (1997) insists, that even if voting rules have to be applied in certain cases, the decision reached will certainly differ from the one that uses voting rules from the outset.

Rawls looks at the difficulties of such situations in a slightly different manner: if the point is reached where too many diverging options for e.g. distributing public funds to public goods are available, a vote can be taken. However, this vote is taken by the public with the perception of the political ideal of deliberative democracy in the back of its minds. This problematic situation should nonetheless not take place with fundamental issues (Rawls, 1997).

The regulative ideal is consensus, which means deliberative democrats are aware that actual consensus can not be reached in deliberation and discussions usually need to end in a voting procedure. Moreover, as Gaus (1997) puts it, politics would be rendered impossible if everyone had to consensually agree on every issue. Instead, deliberative democrats either offer the abovementioned voting rule or a different level of consent,

one on which only those people's assent is needed that have rational and reasonable beliefs and 'good' intentions.

It needs to be further evaluated whether this assumption of 'good' and 'reasonable' persons is generally made in this research discipline since the implications would pose a problematic question to the concept: who has a say about who is 'reasonable' and 'good' and how is this valuation made as well as where the is assertion of treating all affected individuals equally left in such a case?

On the other hand, if a fair procedure is applied (as i.e. flipping a coin to decide on progressive or flat income tax rates), that does by far not mean that the outcome must in any case be fair. If the sole focus is put on the fairness of the decision procedure, then reasons in favour of specific alternatives count for nothing. The same conjecture can then be made for democratic procedures, therefore deliberative democracy as well. So the question arises why one does not simply choose the fairest alternative from the available set. The reason why this is probably not what deliberative theorists favour is because they share the belief that if the public deliberates on political issues and takes part in the decision, then the outcome at least represents some, if not of all, of their views. Estlund (1997) suggests that such random decision procedures, as coin-flipping is or also "Queen for a Day", where a random person is chosen to take the decision, are fundamentally fair. Such procedures can also incorporate deliberation before the decision rule is applied. A counter-hypothesis to this is given by Christiano (1997) who claims that people need the incentive of voting power otherwise they would not be willing to deliberate.

#### **IV.2.1 The role of discourse in a Deliberative Democracy**

As already mentioned in the above outline of the concept of deliberative democracy, the underlying operational notion constitutes of the public expressing their preferences in discourses, e.g. discussion forums and the like. Instead of voting on subject matters, discussions can reveal not only the public's preferences, but also their intensities and underlying reasons, which can subsequently lead to shifts in preferences and as a consequence to a more consensual agreement according to the ideal of deliberative democracy.

These arguments show the significance of discourse theory in the concept of deliberative democracy. Discourse theory offers a set of relevant procedures and notions that need to be applied in order so discussions can be organised and preferences among the affected parties revealed. Discourse theory was originally coined by Habermas (1991), but several authors in the field of deliberative democracy have also taken it up in their research activities (Elster, 1998; Bohman/Rehg, 1997). As a consequence, discourse theory and its relevance for deliberative democracy and its combination with constitutional economics needs to be addressed.

#### **IV.2.2 Deliberative versus Direct Democracy**

One frequent objection against deliberative democracy stipulates that direct democracy is the only way of putting the concept of deliberative democracy through as an institutionalised political procedure. Cohen (1997) refutes this by arguing that direct democracy does not necessarily build the right circumstances for the 'ideal' deliberative prevailing circumstances and is consequently not necessarily the only institution to introduce deliberative democracy to.

Unfortunately Cohen does not give an example for how he believes deliberative democracy should be implemented. A possible implementation level builds once again the communal arena, rather than national political matters, where the set of affected parties can be evaluated, the discourse context set and the consequent decision taken collectively.

Opposed to this, Frey and Kirchgässner (1993) show an example where discourse (i.e. deliberation) is institutionalised within the direct democratic procedure of referenda referring to the Swiss case of abolishing the Swiss army in the late 1980's.

The fundamental question that remains to be evaluated in this context is whether direct democracy shows to be the only legitimate condition for applying deliberative democracy and if not, what other institutional and democratic settings can support the idea of the concept.

## *V. Deliberative Democracy and Constitutional Economics: a Discussion.*

Since both concepts appear to favour similar democratic ideals while still taking two different approaches, it is asked in this paper whether the two concepts of constitutional economics and deliberative democracy can be combined with one another in order to enable both concepts to come closer to their democratic ideal. Several authors have already taken up this idea, yet the spectrum has shown to be too large to find a straightforward concept for the combination of the two. The reason for this can be found in the variety of research disciplines involved, from political scientists over philosophers to economists are engaged in the subject matter and bring in their viewpoints.

Aaken (2003) insists that the two concepts, as often argued, do not contradict each other but rather use “different perspectives”. The author argues why and how deliberative democracy can help increase the fulfilment of the economic criteria constitutional economics is not achieving with its own methods and suggests an integrating concept. She calls the venture ‘Deliberative Institutional Economics’ (or also the concept of ‘homo rationalis communicans’), a concept that seems to be a more complete approach than the two concepts on their own. Another way to combine the two concepts is offered by Dryzek (2003) whose preference lies in introducing deliberation to the constitution-making process (‘voice-strategy’) because of its capability to regulate sub-entities of a society (i.e. organisations) to organise themselves without authorities. Dryzek argues that discourse as another alternative to constitutionalism plays a crucial role since it can influence politics and constitutionalism. This argument is supported by the fact that today’s society is being more reflexive about what goes on in their surroundings and tends to question their traditions and rules rather than simply accepting it.

Pettit (2003) brings up a crucial weakness of deliberative democracy, namely that it does not explain how the process of decision making is actually designed. In particular, he criticises the concept for not offering a solution to aggregate preferences to a collective decision. The author thus calls attention to the resulting dilemma, namely the ‘discursive dilemma’ that implies that individuals give consistent votes themselves, even though, when aggregated, the result is inconsistent. The author then poses the important question about whether deliberative democrats should seek to come up with consistent collective answers or whether they should place more importance on individuals’ responses. His idea is that the final decision is not taken by the people at large but rather by a final decision making body (i.e. the parliament or also a community or even

the family) that is characterised by collective rationality. Consequently, in the preceding process of the decision, deliberation among all people concerned with the issue takes place and their judgements are taken into account for the final decision taken by a decision making authority. Pettit offers an innovative approach, but he does not think his concept through to the end where a problem might occur in that people taking part in deliberation lose their motivation since the final decision is always taken by someone else and their arguments might not have any influence at all.

The political scientist Christian List (2003) argues that the aggregation of preferences is an issue facing democracy in general and not just deliberative democracy. He recalls similar dilemma as the discursive one aforementioned, namely the Condorcet's Paradox and Arrow's impossibility theorem. List shows that Black's idea (1948) can be taken to overcome Condorcet's Paradox. Black suggests if different preferences can be placed along certain limits, methods like pairwise majority voting can be applied that come up with coherent results. Black introduces two agreement levels, namely a substantive and a meta-level agreement. Agreement at substantive level is a situation of consensus, where deliberation can substantially contribute to come to the desired state. List rightly brings in criticism of the deliberative democrat, J. Elster (1998), who argues that consensus is an unrealistic goal and therefore agreement at the substantive level not the most useful concept after all. Going back to Black's aforementioned limits, List clarifies that 'limits' means that preferences can be ordered along a dimension, i.e. from left to right (i.e. one individual can rank her preference on the left and another on the right of this line). Consequently, one can identify the median individual (single peakedness is given). Based on this concept individuals agree on a dimension and consequently on a meta-level for the final decision. So, if this dimension, or the single peakedness criterion, exists, democratic procedures like pairwise majority voting can be used to generate coherent collective decisions. The potential for deliberation in that respect is that it can help generate the design of the dimension and can also assist individuals in placing their preference along that dimension.

Voigt (2003) acknowledges constitutional economics' positive analytic aspects and builds on them. But since discourse theory substantially lacks this positive aspect, it is of interest to the author to assess how it can contribute to positive constitutional economics and the design of constitutional rules. Against Elster's argument (himself being a deliberative democrat rejecting the need for deliberative democracy in constitutional design), Voigt believes that deliberation is necessary to reach a self-enforceable

constitution. Voigt starts his analysis by developing indicators for participation and deliberation as well as for content and success of a constitution. The latter indicators should answer the question whether and how deliberation matters in these issues. The third part of Voigt's analysis consists of 12 hypotheses that are aiming at evaluating the impact of participation and deliberation on constitutional design, as for example that "inclusive participation in constitution-making will lead to less constitutional changes in subsequent periods".

The social and political scientists Goodin and Brennan (2003) do not directly dissociate from assumptions that rational choice theory is dealing with, but they rather extend it. They start from assuming that even if individuals share the same preferences over goals, there is still scope for differences in beliefs (therefore bargaining) underlying them that is i.e. the way goals should be pursued. Deliberative democracy is the vehicle to reveal these underlying beliefs and come up with an agreed upon way to put objectives through. This process, where different individuals deliberate and try to discuss their view with others, is necessary in order to guarantee that decisions are of sustainable success.

Opposing the view that the concepts in question are incompatible with one another, it was shown that there are strong arguments why the two can help achieving each other's ideals when taking an integrated approach. When it comes to implementation, though, one still faces the difficulty that the two concepts remain too theoretical. In order to follow their principles a concept will be suggested in the following that might enable an implementation on an operating political level.

## *VI. Multi Criteria Decision Analysis – implementing public participation into politics*

On the one hand, economics can provide decision makers with an assessment of environmental issues providing results and advice in the form of decision support systems, like Cost-Benefit Analysis (CBA). This outcome-oriented tool also aiming at efficiency improvements in decision making represents people's preferences indirectly via valuation methods that are incorporated into the analysis. On the contrary, the paradigm of constitutional economics can provide a process oriented approach (as constitutional economics is) where people directly decide themselves and preferences are aggregated in the political decision process. The first approach offers a decision

support system for politicians indirectly representing preferences as well as leaving final decisions to politicians. The second approach is one that directly asks people to state their preferences and take part in the decision process (whether via chosen decision rules or directly in the process of a prevailing matter).

A third approach, namely Multi-Criteria Analysis (MCA) offers a new approach to combine both elements of the economics' task so far. In itself it is, similar to CBA, a decision support tool. On the other hand, it offers a way to incorporate participation in its decision process, thus the direct representation of preferences as well as their intensities (through scaling of preferences in terms of objectives and criteria against which they are assessed).

The conventional environmental economic tool usually applied to the kinds of decision sets mentioned in this paper is CBA that tries to facilitate a more efficient allocation of society's resources (Boardman et al. 2001). The method seeks to translate all relevant considerations into monetary terms and can therefore select the most efficient project from a portfolio of alternatives (Hanley/Spash, 1993). MCA, which can be defined as "the study of methods and procedures by which concerns about multiple conflicting criteria can be formally incorporated in a decision making process" (International Society on MCDM, 2004) seems to complement CBA and moreover help overcome some of CBA's weaknesses. MCA includes techniques for comparing impacts in ways, which do not involve giving all inputs and outputs explicit monetary values, but could also include for example other numerical or qualitative measurements.

Similar to CBA, MCA builds on the idea of aggregating information flows of costs and benefits of different alternate projects. Like CBA, MCA is considering the wide range of preferences and valuations arising when a group decision is faced. The way preferences are incorporated into the analyses, is quite different though. CBA's preference revelation depends on the respective assessment method; consequently preferences are gained through direct or indirect procedures of observing individual behaviour. MCA considers preferences directly through stakeholders' (who act as representatives of individuals' preferences) involvement in the process of the analysis. The main difference of the methods in that respect lies in the level of preference disclosure. While CBA can generate a value that is applicable to a certain number of project areas, like i.e. the value of statistical life in the area of natural hazards, MCA gains preferences for specific project alternatives.

In the following, a brief outline of the procedure of MCA will be given in order to then show MCA's strength in its application to a wide range of political areas.

## VI.1 MCA – the procedure

In short, MCA can be drafted as follows:  $O$  is a finite set of  $n$  feasible options and  $G$  is a set of  $m$  evaluation criteria, it is possible to build a  $n \times m$  matrix ( $P$ ), whose elements  $p_{i,j} = g_j(o_i)$  ( $i=1,2,\dots,n; j=1,2,\dots,m$ ) represent the evaluation of option  $i$  by means of criterion  $j$ . An option  $o_1$  is evaluated to be better than option  $o_2$  (both belonging to the set  $O$ ) according to the  $j$ th criterion if  $g_j(o_1) > g_j(o_2)$  (Munda, 1995).

More detailed, the procedure follows the subsequent path: in a first step the decision context is established which involves outlining the aims as well as identifying decision makers and other stakeholders. An institutional compilation, performed mainly on historical, legislative and administrative documents, can be used to achieve this. The map of actors resulting from this analysis might find adjustments during the process of the MCA (De Marchi et al., 2000). A shared understanding of the decision context that is the political, social, economic and administrative structure, is essential because the impacts can be manifold and a lot of people may be affected whose preferences and perceptions need to be recognised (Omann, 2004).

Then, objectives can be created either using a top-down approach, in the case of having a larger project where objectives need to be set by a central body, or a bottom-up approach, where various stakeholders participate in generating objectives (Edwards-Jones et al., 2000). An overall objective can be broken down into a subset of objectives, thus higher level goals are dependent on lower level ones: in natural hazard management, a higher level of security might be the main aim when installing protective measures against avalanches, but at the same time a sub-goal could be to minimise the environmental impact (i.e. the loss of biodiversity incurred through the building of high altitude feeder roads). Goals need to be clear, specific, measurable, agreed, realistic and time-dependent, that means being classified into long-term or immediate goals.

Only MCA identifies the criteria that allow measuring the strength of the options in fulfilling the objectives in this step. To meet this requirement, a criterion needs to be measurable, if not quantitatively, then qualitatively, to show how well an option performs in relation to that criterion (Dogson et al., 2001). In the example above, a possible criterion could be the number of species lost through human induced behaviour. The

finalisation of the chosen criteria requires assessing them against a range of qualities: criteria should be complete, operational, decomposable (two factors should not be in opposition in a single criterion), non-redundant, minimal and defined in terms of time. The time-definition (temporary consequences or permanent ones) brings in difficulty when aggregating and comparing the results. With monetary techniques, discounting is a reasonably well established procedure for aggregation. Apart from the fact that this might not always be plausible to do, this does not solve the problem with criteria measured in terms other than monetary.

In MCA, criteria should be developed through participation of the stakeholders, in order to make sure all interests are represented and can then be regarded when conducting the analysis.

The third step involves identifying the all relevant options for achieving the objectives. The number of options may vary between 2 (e.g. should a certain project be undertaken or not?), any discrete number (i.e. 10 different ways for building protection measures against avalanches) and infinity (Fandel/Spronk, 1983). In the first case, we speak of a 0-1 choice system where one chooses between the current and a new situation (Munda, 1995); in the second case we have a finite number of options available. Fandel and Spronk (1983) suggest creating a subset of alternatives in case of a high number of options. Given the complexity of decision making problems, it is not always possible to define the set 'A' a priori. In a continuous situation, the set of options 'O' is progressively elaborated (Munda, 1995) such as MCA is used to specify the best option under given constraints, like i.e. costs (Dogson et al., 2001).

There are different techniques of MCA available; some require complete information from decision makers about their objectives, others are more participative working with decision makers to clarify their priorities. Again others analyse problems without relying on preference information at all (Edwards-Jones et al., 2000). Nonetheless, there are steps that all MCA's have in common. (A comprehensive overview of the available MCA techniques is given in Omann (2004) and Gamper (2004)).

The creation of the performance matrix requires the analysts to determine relationships between options and their impacts on criteria. More precisely, this step follows in two parts: scoring and weighting.

So far, the different options have different measures (i.e. biodiversity loss is measured in numbers, direct costs are measured in monetary units) attached to them. Because one cannot compare different measures straight away, a common one in terms of a scale

needs to be found. If we face multiple attributive decisions, a numerical scale is created to deal with this complexity. For more simplified decision structures, this is not necessary and an easy dominant or outranking relation can be evaluated (for further details see Fandel/Spork, 1983 or Vincke et al., 1989). Usually a scale is chosen between 0 and 100. So, for example, if there are 3 different technical solutions to build avalanche barriers and the first one costs 30 Million Euros, the second 40 and the third 50, then the first solution will be allotted with a score of 100 as it is the cheapest option and the last one with a score of 0 as it is the most expensive one. Now, the way the analyst processes this information (what is the score for technical solution 2?) depends on the particular MCA method she is using. Basically, one can go about this scoring process by building a value function and simply reading off values in a function given the lowest and highest scores. Another approach is to use an interval scale through the integration of expert judgements (direct rating). In a third way, one can choose an indirect method through letting experts make verbal pairwise assessments. Analytical Hierarchy Process or Rembrandt and Macbeth are examples for conducting these steps. Once the alternatives and the relevant criteria are defined, the criterion scores can be determined and consequently an impact matrix can be constructed (second part) taking the following exemplary look (Table 1):

<b>Criteria/Options</b>	No Avalanche Barrier	Technical Solution 1 for an Avalanche Barrier	Technical Solution 2 for an Avalanche Barrier	Technical Solution 3 for an Avalanche Barrier
<b>Economic</b> Direct (financial) costs	0 Mil. Euros	10 Mil. Euros	20 Mil. Euros	30 Mil Euros
<b>Environmental</b> Environmental Impact Assessment – loss of biodiversity	0 loss	Loss of 50 species	Loss of 25 species	Loss of 10 species
<b>Social</b> Number of People being protected	0 people saved	200 people saved	100 people saved	300 people saved
<b>Institutional</b> Subsidisation at national level	None	70%	50%	40%

Table 1: Example of an impact matrix of a protection measure

Alternatives still can not be compared as a unit of preference since the values do not as yet reflect preferences as such. In taking the exemplary matrix from above, this could mean that a local governor might find the subsidisation criterion more important than the biodiversity one, as opposed to the ecologist's expertise who finds biodiversity utmost

important. As a consequence, weights can be seen as trade-off values, indicating how much of one criterion you would be prepared to give up in return for an improvement on another criterion (Belton/Vickers, 1990). Again, these weights are taken into the impact matrix, this time an option's score on a criterion is being multiplied with its weights. After assigning this to all criteria the sum of these products gives the overall preference for that option. This process is repeated for each of the option and finally a rank can be given to each option's score (Dogson et al., 2001). These scores can be re-built into the adjusted impact matrix. With these results it will be possible to give a ranking of the options (or in the case of simpler models, one option can be recommended).

MCA seeks to support the selection of projects and policies which are most efficient and optimal. The interpretation of MCA results can be illustrated in costs and benefits graphs where a relative value-for-money comparison can be shown (Dogson et al., 2001) and also dominating options drawn out (being cheaper and more beneficial). In all ex ante as well as ex post cases of MCA, the analyst must make predictions concerning future physical flows, future relative values, as well as a number of criteria and stakeholders, therefore a sensitivity analysis, as an essential final stage, is conducted (Hanley/Spash, 1993).

MCA's application can be seen in a wide range of application areas. In the UK government, for example, it is a binding decision tool for road extension decisions and other traffic issues. In Austria, a study has been conducted including all relevant interest groups (e.g. decision makers, experts and the public) for evaluating the country's energy scenarios for the future based on which energy policies can be set. MCA can therefore be applied for decisions on specific projects and project options or on a larger scale, deciding on the institutional framework for certain policy areas.

Participatory MCA takes deliberation as a key goal in the evaluation of either all or at least one step (preference measures through the weighting process) of decision process. Through the discussion among all affected parties the pareto criterion of constitutional economics is tried to be fulfilled using deliberative democratic tools as a vehicle to achieve this.

## *VII. Conclusion*

This paper has drawn attention to the question what concepts can be used theoretically as well as in day-to-day political situations to install public participation for more efficient and effective decision making. It was shown that deliberative democracy might be a vehicle to implement constitutional economic ideals into political practice.

Based on these assumptions, empirical studies have to be carried out in the future. It will be necessary to test whether today's participation elements in decision making do actually influence the final decision outcome and whether the instalment of a binding decision rule using MCA could offer a securing of the democratic ideals deliberative democracy and constitutional economics are aiming at. The first hypothesis on the influence of participation on the final decision outcome is being tested using Austria's danger zone planning legislation. For the creation of danger zone plans engineers and spatial planners are appointed to judge the danger potential in areas of human activity (infrastructure, houses, recreation areas etc.). After the planning process is finished, plans are being opened for public discussion. Opinions from all interested parties should then be taken into account to reconsider the plans before being finalised. The influences of these judgements (that are being recorded in protocols by local authorities) are being tested in an empirical study.

The usability of MCA will later be tested by applying the method to a natural hazard decision context, e.g. the preferences for the instalment of protection measures.

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