Logic trees for inclusive discourse

A research agenda proposal / request

Norbert Bollow <nb@bollow.ch>

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Abstract: Making political decision-making truly inclusive is always challenging. Diversity of concerns and perspectives to be considered is a significant driver of complexity. How much inclusiveness can be achieved is limited by how much diversity can be integrated without losing the ability to organize constructive discourses that lead to adequate decisions, and that achieve this within a reasonable timeframe.

I propose that “logic tree” methods of the so-called “Theory of Constraints” are highly promising as a means of managing this complexity in a logically and socially sound and inclusive manner. Mapping concerns by such logic trees allows to identify power structures (which turn up as root causes for concerns), conflicts, and to discover and discuss innovative ideas. The application of these methods to Internet governance and sustainable development objectives should be tried and researched.

Introduction: Threats to democracy

The essential principles of democracy include not only that everyone can in practice enjoy their human rights and decision-making by the people (either directly or through freely elected representatives) on the basis of the principle “every adult is entitled to one vote”. It is also essential that the process through which public policy proposals are shaped before they get voted on must be centered on a democratic and public discourse process.

Unfortunately, in matters of the information society in general and in particular in regard to the technical structures which shape the new “network society” aspects of our societies, what is happening is quite the opposite. This problem concerns not only the quite significant parts of society which are generally difficult to include also in traditional democratic public policy processes. Now even those segments of society where traditionally the democratic public policy discourse has been taking place are also not included in any real way anymore. What influential public policy discourses take place in regard to matters of Internet governance are almost entirely either completely in the hands of lobbyists for business interests and of techies who are mostly also employed by interested firms and who, while not always explicitly representing the interests of their employers, still engage on the basis of a mindset which is compatible with the business interests of the corporations which pay their salaries. Putting matters of public policy in the hands of techies means immediate and near-total corruption on the basis of the particular interests of not only their current employers and also significant potential future employers. Large ICT corporations are also the big potential employers of techies, and only very few people would be principled enough to take a position in the public policy discourse just because it is morally right from a public interest perspective, even if adopting the underlying mindset might potentially render them non-employable by one of the big potential employers in their area of professional expertise. This situation is often euphemistically referred to as “the multistakeholder model of Internet governance”.

The UN's Internet Governance Forum (IGF) is an exception to the above-mentioned trend towards techie-dominated discourses. However it is ineffective in regard to the substantive content of its discussions (with the exception of whatever techies attending the IGF afterwards take forward according to their own sole discretion into the more technical fora where the future of human societies is actually being shaped). Also there is a strong and so far growing focus at the IGF on promoting multistakeholderism as an ideology.

It is to a large extent the end of democracy if the discourses which are critical and decisive to the future of our societies migrate away from the interested public and into the exclusive domain of experts who are largely employed by companies with big particular interests, or who at least see these big ICT companies as major potential employers.

For further background on why in view of the current state of Internet governance and global governance in general, I see “preserving democracy” as a critically important and very urgent goal, see [Gurstein 2014], [Hill 2014] and [Purkayastha and Bailey 2014].

Complexity as a key challenge

It must be acknowledged that some of the underlying concerns which make many corporations and individual techies appreciate multistakeholderism have some genuine basis in reality. In several countries, attempts to use traditional political processes to develop policies or proposals for Internet governance have led to results which were clearly and objectively unsuitable, as everyone with an understanding of how the Internet works will agree. The problem here is not just that most concerned government officials and politicians lack in-depth understanding of the technical basics of how the Internet works. In fact techies in very much the same way lack in-depth understanding of the political basics of public policy. And both groups lack understanding of what the principle “people must be enabled to fully enjoy their human rights” means for the technical and legal aspects of Internet governance. As long as the people on both sides of the political-technical divide lack effective analytical tools and the capacity for effectively addressing concerns from outside their area of expertise, they all have a strong incentive to not understand or at least not acknowledge the validity of those points which don't fit well into their way of thinking. Just about all Internet governance related issue are very complex in the following sense: If all valid and important concerns which are relevant to the issue are to be seriously considered, the complexity of the required analysis becomes greater than what the concerned people have experience in dealing with. Most of us have never been taught adequate cognitive tools for systemic analysis at this level of complexity. Fear of personal inadequacy is a very strong force of human nature. It is something that prevents human beings from going forward with activities that involve a perceived risk of experiencing feelings of inadequacy. When the threat of being overwhelmed by complexity looms, it is human nature itself which drives both politicians and techies towards simplistic thinking and ideologies which can be adopted without personally feeling threatened. Examples include massive investments into “national broadband strategies” and an ideology of multistakeholderism:

- National broadband strategies are non-threatening to politicians in developing countries, because the aspects that they know little about are seemingly easy to contract out to the private sector, and then the concerned politicians can be seen as doing something important for development. (Recent research, see [Galperin et al 2014], suggests that investment in broadband Internet capabilities does in fact have a significant positive development effect, although not as much as the proponents of the these policies claim and hope, and that much better results would be possible with a less simplistic approach.) When the strategies are designed and implemented in a way that gives the private sector ownership of the infrastructure that is being built the techies and the private sector will also find the idea of public sector funded broadband infrastructure investment non-threatening and in fact very positive from the perspective of their particular interests.

- The idea of multistakeholder governance with “equal footing” participation of government, civil society and private sector representatives is generally not an idea that people with a strong background in public policy and government are particularly comfortable with. And there are valid reasons behind this discomfort, as there is an associated loss of power not only for them personally but also for the system of democratic governance as a whole. But this discomfort is a weaker emotion than the fear of the feeling of inadequacy. Hence the complexity and associated fears are a key driver in a process of abdication of power, in which decision-makers in democratic governance systems more and more agree to power being given up to multistakeholder governance processes, which in effect means giving most of the power to the techies and to the private sector.[1] Since there are no effective accountability processes which would be designed to ensure that the new holders of this power use it in ways benefiting the public interest, there is no reason for the techies and the private sector to feel inadequate or even just uncomfortable in view of their inability to take the full complexity of public interest concerns in consideration. In summary, equal-footing multistakeholderism can be seen as a way of sweeping the complexity of public interest concerns under the carpet, no matter what the consequences may ultimately be. (For an example which clearly shows how very bad concentration of power in the hand of an international company can easily happen the in the context of a process of ICT-ization see [Ruiz-Marrero 2014].)

The global nature of the Internet and the ICT ecosystem is a key aspect of this problem. The existing democratic governance systems do not extend to the global level. I believe that in principle it is possible for all governance issues regarding global concerns to be addressed in ways that allow the actual decisions regarding conflicting interests to be taken at the national level (where it is well understood how such decisions can be taken in a democratic manner). The cost of allowing decision making to happen at the national level, with real options for different countries to make significantly different decisions, will again come in the form of increased complexity.

I don't see any alternative to this path if we want to continue living in democratic societies. But adequate tools are needed first for being able to manage the complexity which will inevitably result from being, in a real way, inclusive of

- the full variety of concerns that get expressed in democratic discourse processes; and
- differences between countries, allowing different countries to reach different democratic decision in public policy matters regarding the information society.[2]

Right now, what typically happens when a non-techie raises a valid ICT-related public policy concern in an appropriate manner to an appropriate person in the governance system is in effect a process of disempowerment and exclusion: The person who has been approached will (consciously or unconsciously) be concerned about the increase of complexity which would be associated with taking this additional concern in consideration.[3] Possibly some lip service to inclusiveness will be

1 Civil society criticism of the now dominant and economically successful ideology of multistakehodlerism is largely suppressed by social and/or economic mechanisms which discourage being seen as critical of this ideology.

2 It is important to note that the ideology of multistakeholdersim specifically poses a serious risk and hindrance in regard to the economic needs of developing countries ever being taken serious in the Internet governance discourse, see [Bollow 2014].

3 Time pressures and impatience also play a significant role in this context: The public policy discourse on Internet governance topics seems to be dominated by *ad hoc* processes in which there are rarely clear and reliable rules of process, nor time and patience to appoint panelist and chairperson roles in any other way except by endorsing one or more of the well-known stars or other insiders. This naturally favors the proponents of a dominant and economically successful ideology, who are more easily able to attend in-person meetings where they have a chance to *network* with an objective of becoming insiders, which allows to secure some high-profile speaking opportunities and to potentially ultimately be seen as a star. Naturally those whose participation is primarily motivated by career advancement objectives will likely be attracted to aligning themselves to the dominant and economically successful ideology, and to following this path.

paid, but ultimately the point will not be seriously considered unless it is already backed by serious political or economic power.

Hence the preservation of democracy in a more and more ICT based world required the development and adoption of adequate tools for complexity management in public policy processes. Processes must be adopted which ensure that input from the general public is not only received, but which make it in fact verifiable that the points which have been raised are appropriately considered and solution proposals are sought which taken them into account. These congnitive tools and processes must be made robust enough for situations involving unspoken intentions of powerful actors which are specifically anti-inclusion, like e.g. a desire of current elites to preserve their position of power, or an imperialistic intention of a dominant country to maintain its geostrategic advantages.

Logic trees for complexity management

Logic is about expressing thoughts in a way that allows reasonably objective checking whether the conclusion has been reached in a valid manner or not. Examples include the logical analysis of rhetorics, which allows for example to dismiss so-called strawman arguments[4] as invalid, as well as the mathematical logics of inference. Yet another kind are *logic trees* as discussed here. I have been introduced to the concept of *logic trees* through the “logical thinking process” of Goldratt's Theory of Constraints, see [Dettmer 2007a]. However I would propose that such *logic trees* are much more broadly applicable, and I have also invented a few new types of such trees.

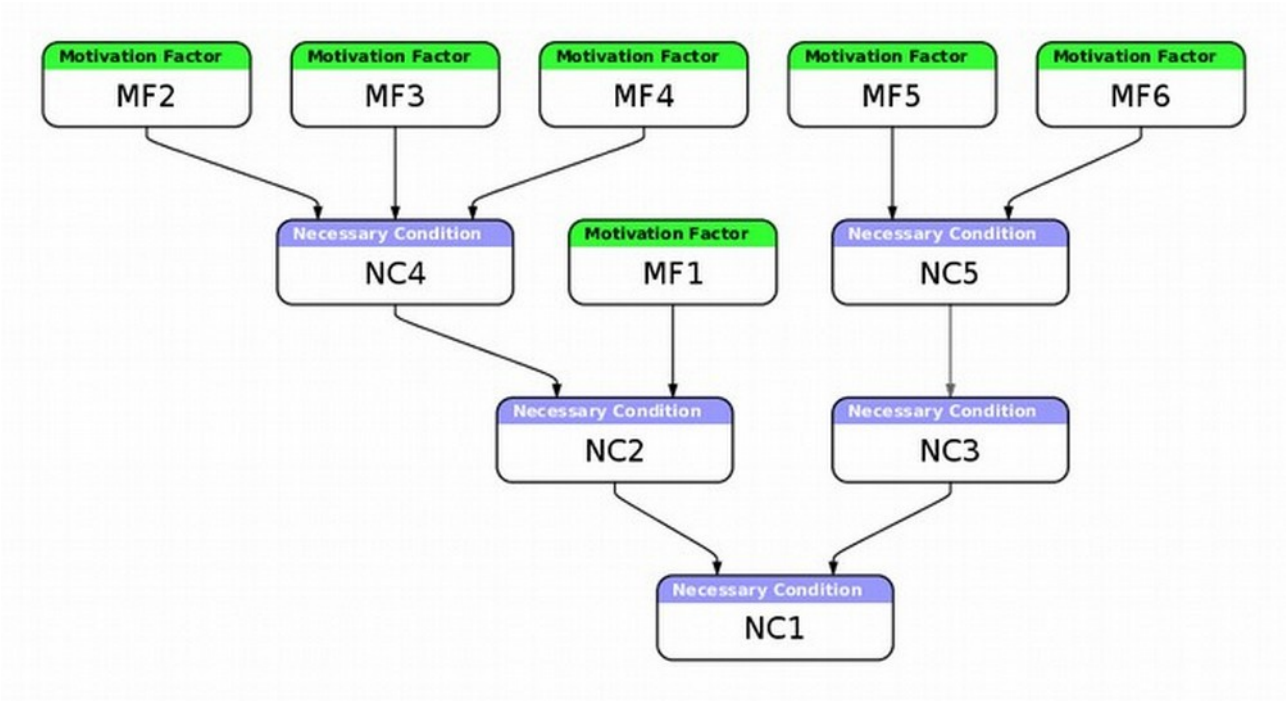
All of these *logic trees* consist of text boxes (which are normally drawn in a somewhat ovel form) and which can be connected by arrows. The text boxes are called “entities” and there can be different types of entities in the same *logic tree*. The arrows express some type of logical relationship between the entities.

One conceptually very simple type of logic tree is the *motivation tree*, which I can use to gain clarity about the logically valid ways of motivating myself for an activity for which I find it difficult to motivate myself. This would typically be an activity which I have identified as a necessary condition for achieving an important goal. However just because something is logically necessary for an important goal does not automatically get my emotions aligned so that I would be motivated to actually get to work and start doing it. I have sometimes found it helpful to construct a motivation. I draw this type of tree with an entity at the bottom which is the necessary thing that I want to motivate myself for. Above that will be several layers of other entities which I connect with arrows leading downwards; the meaning of each arrow is that it expresses a “motivates me for” relationship.

See the top of the following page for a possible structure for such a *motivation tree*.

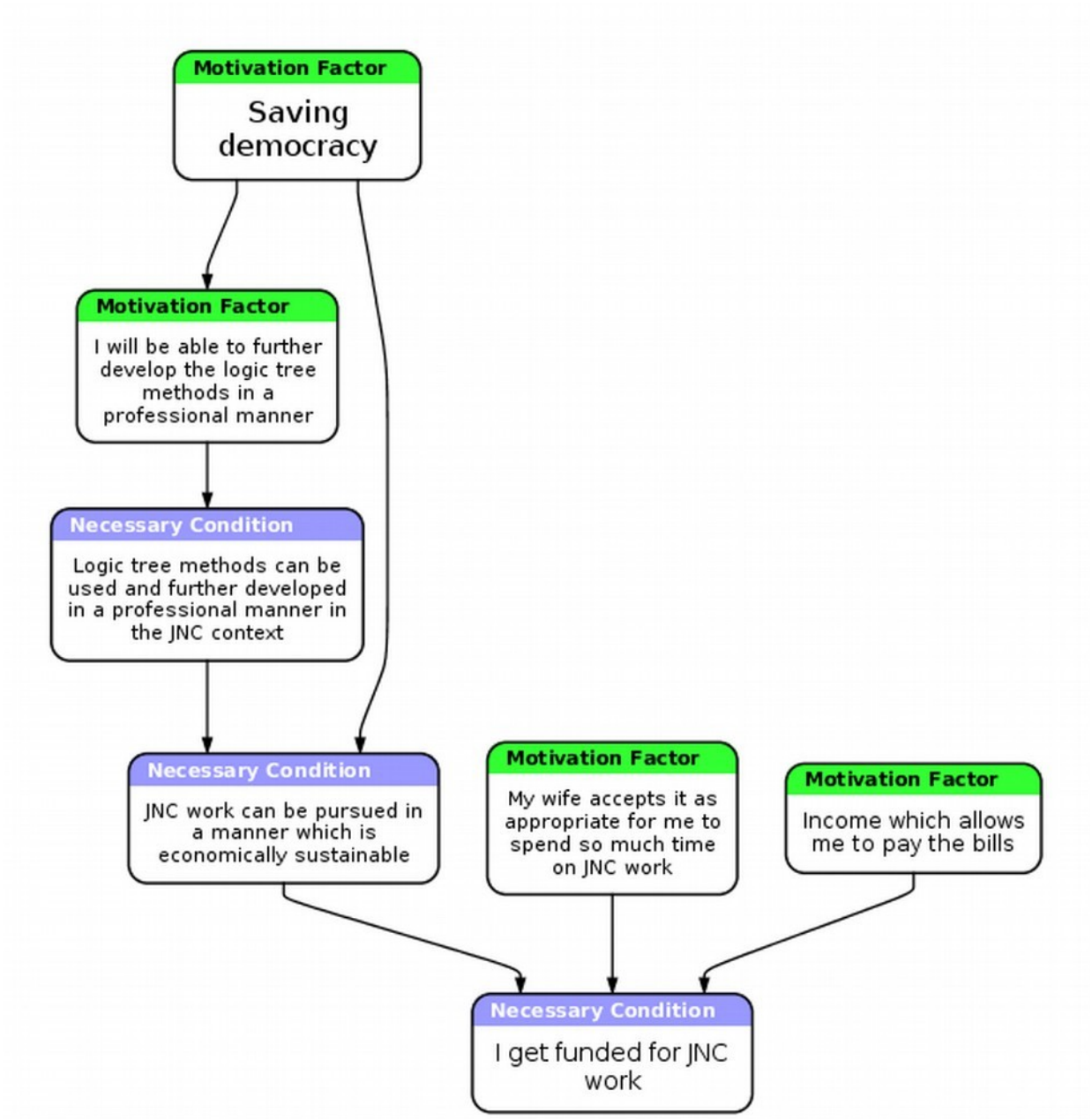
4 When in a debate an opponent's viewpoint is rhetorically difficult to attack in a logically valid way, sometimes the *strawman* tactic is employed which consists of arguing instead against a “strawman” view which no-one has seriously advanced.

This image of a possible structure a *motivation tree* illustrates why the word *tree* is used to describe *logic trees.* The blue “necessary condition” entities form the root and the branches of the tree, while the green “motivation factor” entities are like leaves.



In the practical application, instead of the placeholders NC1, NC2,… and MF1, MF2,… there will be text which briefly describes the substantive content of the various entities. Please turn to the following page for a concrete example.

Here is an example of a *motivation tree*. In this example, “JNC” refers to the Just Net Coalition, see http://JustNetCoalition.org .



Each kind of logic tree has a characteristic set of rules about the structure of the tree; the tree will not be correct if one of these rules is violated. For example, in a *motivation tree*, there is always exactly one entity from which no arrows originate (the root of the tree), and it is always a blue “necessary condition” entity. From each green “motivation factor” entity, there is always at least one arrow to a blue “necessary condition” entity, although there may be further arrows. Arrows originating from blue “necessary condition” entities will always go to other “necessary condition” entities, never to green “motivation factor” entities. Entities where no arrows end will always be green “motivation factor” entities.

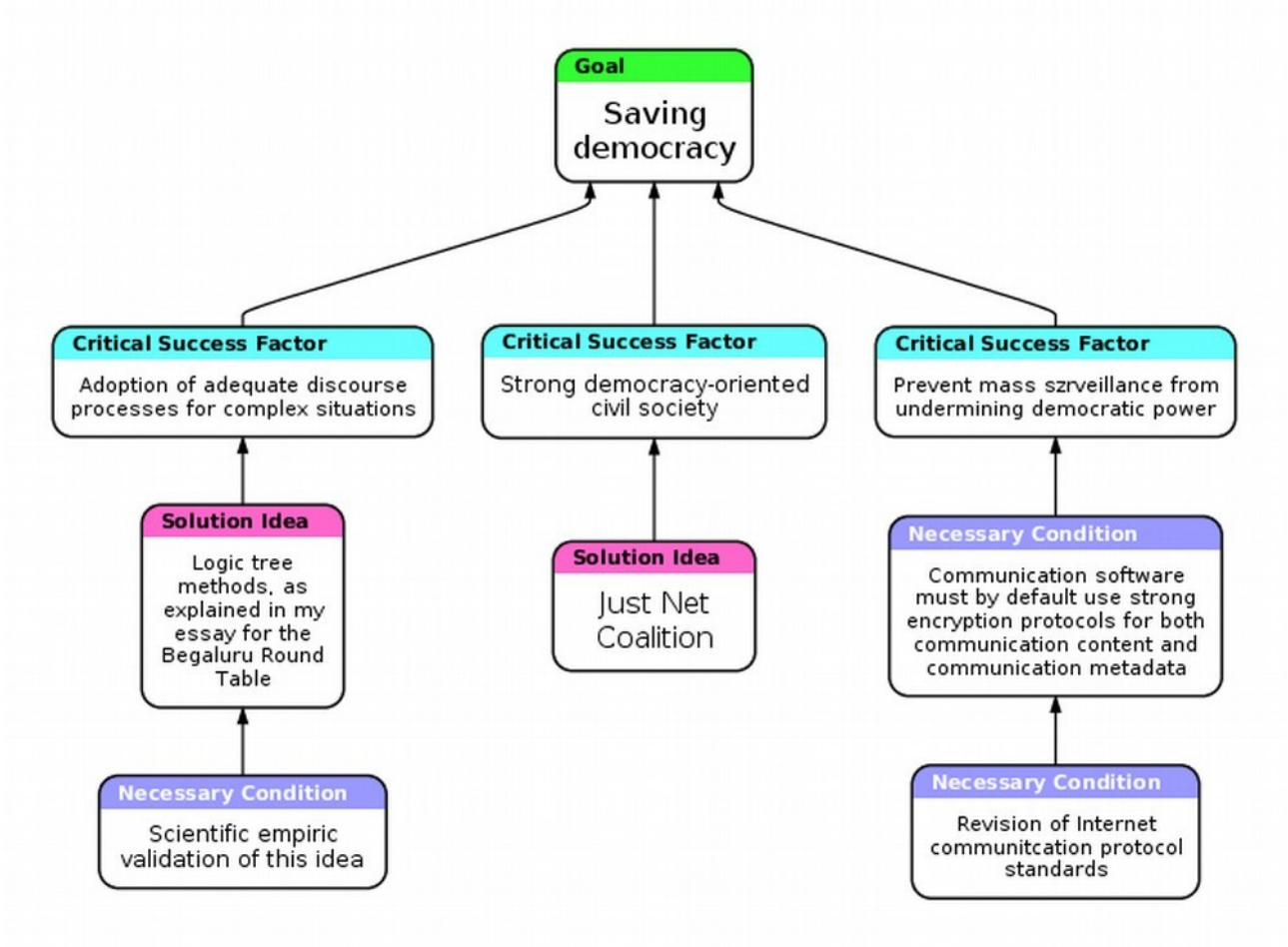
These rules are not arbitrary: they reflect structural properties which *motivation trees* should have in order to be useful for their intended purpose and in order to avoid adding information which would not contribute to the tree serving its purpose. Non-helpful information should not be added to a logic tree because it would distract from the tree's purpose.

In a *motivation tree*, no attempt is made to document the goal for which the blue “necessary

condition” entities are logically necessary conditions. That kind of information belongs into a different kind of logic tree, the so-called *goal tree*. Unlike the *motivation tree*, I have not invented the *goal tree* myself. It has been proposed in 2007 by H. William Dettmer who is a leading expert on legic tree methods. This was originally proposed under the name “*Intermediate Objectives (IO) Map*”, see [Dettmer 2007b]. Dettmer renamed this logical structure to “*goal tree*” not long afterwards.

In the context of facilitating inclusive democratic discourse processes, I see *goal trees* as the most important kind of *logic trees*, although so-called *evaporating clouds*, a form of *logic tree* which is used to analyzed conflicts, are also extremely helpful.

As an illustration of what a *goal tree* may look like, here is a simple initial draft *goal tree* for the goal of “preserving democracy” (which I see as an important and urgent goal to work on, as explained above.) As soon as the process is started of discussing such a goal tree with various people, further concerns about necessary conditions will be pointed out and corresponding entities will be added.



In a goal tree, the arrows point upwards, while the tree as a whole is constructed downwards from an important goal at the top over “critical success factors” to elaborate several layers of “necessary conditions” which are (in the context of a particular strategic perspective) seen as essential for achieving the goal. In a somewhat generalized variant of *goal trees* some further types of entities are allowed, such as “solution ideas” and entities which document conflicts.

Such *goal trees* can be invaluable as a tool in the context of strategic strategic planning processes in various kinds of organization.

I propose that *goal trees* can also be used to facilitate effective public discourse processes in contexts where the complexity of the topic otherwise prevents inclusive and effective discourse from happening: Use of logic trees to facilitate discourse allows to subdivide the discourse into fundamentally simple aspects of the complex logical structure of a given problem, in a way that allows to reliably avoid forgetting aspects of this logical structure after they have been identified. Unlike the editing process for text documents that lack an explicit *logic tree* structure, the process of questioning and potentially removing entities and/or arrows from a logic tree can be reasonably objectively verified. It is well-understood what are the categories of so-called *legitimate reservations* which can justify the removal of entities and/or arrows from a logic tree, or the refusal to add proposed entities and/or arrows; these have been classified in [Dettmer 2007a]. In the following I assume that the discourse process has a facilitator who understands these matters, as well as the *logic trees* based methods for understanding and resolving conflicts, for which there is a specialized type of *logic tree* called “evaporating cloud”, on which topic there is significant literature available, see e.g. [Fedurko 2013].

For the application of logic tree methods, in addition to the general principles of *logic tree* methods, the principle must be adopted that in the case of conflicts between different objectives, human rights based concerns must always be taken as trumping any other kind of concern: The scope of application of a human right may only be restricted by other human rights.

By contrast, when there is a conflict between different objectives neither of which is a human right, and no solution is found which fully satisfies the desires of all concerned stakeholders, it will from the perspective of the logic of the *logic trees* method be equally valid to prioritize one or the other objective.

Apart from the inevitable need to sometimes make such choices, most kinds of disagreements that can arise in the process of *logic tree* based discourse are only intermediate steps, as they can be resolved in a reasonably objective manner. In particular, quite unlike what happens in consensus processes of editing an outcome document which is simply a text, what gets added to a logic tree (and what may be edited out) is to a very significant extent independent of what the differences in political power may be between the various participants in the process. This can be used to facilitate discourse processes which are reasonably objective in the sense that they are not only in pretense but in actual reality a collaborative process of: first gaining a shared understanding of the problem, and then developing a shared understanding of solution proposals and their plausible desirable und undesirable effects.

If sufficiently detailed documentation of the discourse process is created, it becomes possible to verify afterwards whether the discourse has been conducted correctly. If something went wrong, such as when a change or refusal to make a change was not based on a legitimate substantive argument, that will provably be a mistake on the part of the facilitator. Hence the temptation for facilitators (to favor those who have more economic or social power when there is a disagreement) is greatly reduced.

Another major advantage relative to discourse processes which are directed towards the negotiation of a textual outcome document is in regard flexibility for later changes. For complex problems, there are generally severe limitations in regard to how well the problem and the side effects of possible actions can be understood before the attempt is made to implement a possible solution. A *logic tree* based discourse model allows to use an iterative problem solving approach in which the understanding of the logical structure of the problem and the side effects of possible actions can be updated multiple times until a satisfactory solution is found.

When there are conflicting interests and corresponding different preferences in regard to how the solution should be structured, several solution proposals with different logic tree structures can be developed in parallel. The choice between the different proposals could be made for example by means of a vote in a parliament.

Key differences to today's processes of choosing between different public policy proposals include:

- Although when there conflicting interests, different solution proposals will likely favor the interests of one or the other stakeholder group more, the application fo the logic trees method will generally lead to the concerns of all stakeholders being taken into account in all solution proposals at least to some extent.
- It will no longer be a viable strategy for powerful stakeholders and powerful political groups to effectively simply ignore critics.

Understanding power structures

Understanding the power structures which often prevent good solutions from being discovered and adopted spontaneously or through negotiations is not strictly necessary for applying *logic tree* methods. It can however be helpful, because the application of *logic tree* methods obviously cannot end the existence of power differentials. After a democratic political decision has been made, some stakeholders will still have greater economic and social power than others, and this will often need to be taken into account in order to ensure that democratic political decisions are implemented effectively and that effective remedies are available in the case of abuse of differentials of economic or social power. There is therefore value in discovering these power structures. There is a *logic tree* method which can help with this: These power structures can be identified by the method of identifying the *root causes* for concerns expressed by different stakeholders. For an explanation of this method see [Dettmer 2007a].

Conclusion

While there is a well-established community of practice for gthe professional application of logic tree methods in the context of business consulting, the idea of applying these methods for the purpose of facilitating democratic discourse is so far untried and untested in that context.

I expect the use of *logic tree* methods in the context of democratic discourse to result in significantly increasing the inclusiveness of such discuss, because these methods can solve the complexity related problems which otherwise prevent inclusive discourse.

This expectation needs to be tested empirically.

I propose and request corresponding scientific work to be carried out as soon as possible.

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