



Deciding

As of 10.09, Dr. Rolf Signer (Edit 09.11, Florian Stellmacher; Translation 01.17, Lars Kaiser)

Term

At their core, planning processes are actually decision-making processes. «Deciding» means to to make a choice between at least two possibilities of action (options) and being able to justify them. «Doing nothing» is also an option. Decision-making is done in order to reach or to prevent certain impacts. However, decisions are not made on the impacts.

In everyday life, we do a lot of things which we could also do differently:

- We buy a specific camera, although there would be others offered...
- We move into a specific apartment, although three or four apartments of the same class would have been available at the same time...
- We choose to go to a specific dentist...
- We go on adventure travels in the Amazon...
- We choose a specific subject to study and specific directions of specialisation...
- We occupy ourselves with certain objects...
etc.

- The common factor of these situations is that we have made a choice from different possibilities of action.
- Sometimes this happens very systematically, sometimes based on a «gut feeling».
- If we have a multitude of possibilities of action, then we call these options. (If there are only two – and only then – we can speak of an alternative.)
- If we choose one of the options, then we favour one possibility of action, we have a preference.
- And: «Doing nothing» is also an option!

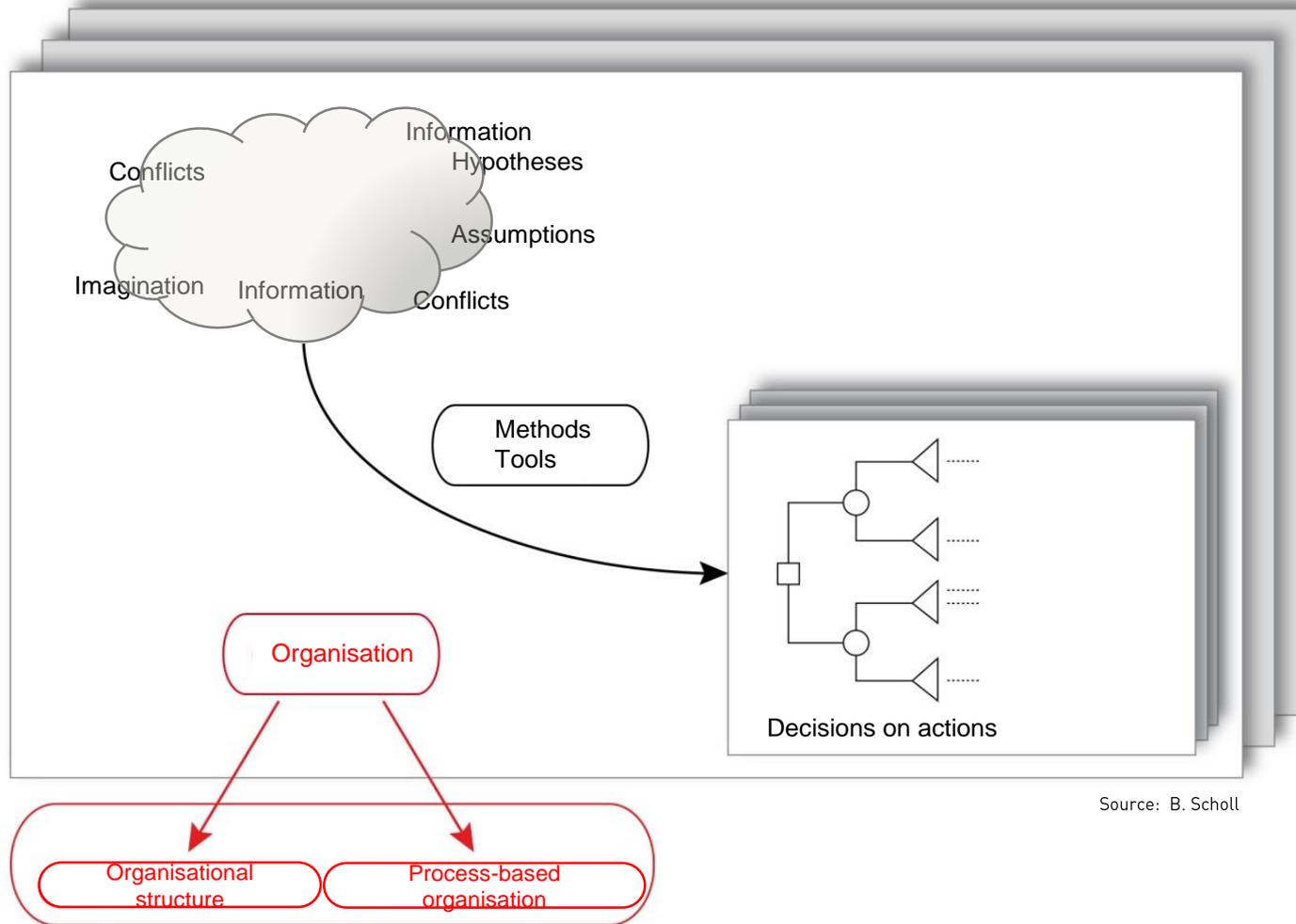
From problems to solutions

In order to reach solutions of problems, decisions have to be made. Difficult tasks can not be completed at once, but only through a multitude of future decisions in an expedient sequence. This creates **sequences of actions and decisions**.

The dispositive (alignment) of an expedient sequence is called the design for a **decision-making process**. This shows that planning processes basically are decision-making processes. Depending on the task type, the processes have to be designed differently.

Maxims for decision-making can be helpful, e.g. „The requirement of Total Evidence“ and the „Rule of sharper information (Maxim of savings)“

From problems to solutions



Source: B. Scholl

Deciding

«**Deciding**» means to to make a choice between at least two possibilities of action (options) and being able to justify them.

«Doing nothing» is also an option.

Decisions have to be made in order to reach or prevent certain **impacts**, but they are not made on the impacts. Impacts are the actual results of a decision. Negative side effects always have to be considered.

Decisions are always **subjective**. This means, personal assessments of an actor always play a role. When making decisions in groups, these are the personal assessments of the group members. Group decisions therefore also are subjective.

Comprehensibility

Decisions in spatial planning should and have to be comprehensible. This is the minimum requirement for a rationally-oriented decision-making process. As far as possible, all important probable and discarded possibilities of action should have been recognised. It should be clear, under which circumstances the decisions should be made and which impacts should be made.

An everyday example: Vanilla or chocolate ice cream? I

The term „deciding“ is generally known as the decision between different actions. Imagine someone offers you an ice cream. In one hand he offers ice cream with vanilla flavour (recognisable by the bright colour), in the other he offers ice cream with chocolate flavour (recognisable by the darker colour). You are free to choose – and decide for the vanilla flavour. Naturally, you could also have declined to choose anything. Why you choose a certain taste is completely your personal decision. In decision theory, this is known as a *subjective justification*.

Now imagine somebody informs you that the vanilla ice cream has expired. Would this influence your choice? Probably not if chocolate is your favourite taste and you had decided for that one. However, if vanilla is your favourite ice cream, you risk an upset stomach.

An everyday example: Vanilla or chocolate ice cream? II

Because you have important appointments in the next few days, you exceptionally go for chocolate. If the information comes up that there is a 60% chance that the ice cream has expired, you will probably start conducting risk assessments. How important are the appointments to you? Possibly you also wish for more information – i.e. about the consequences of eating expired ice cream.

As you can see, deciding has become complicated even with this simple example. Consider that in spatial planning it is often unclear, which possibilities of action and decisions exist and what desired effects can be reached. Additionally, it is often unclear which circumstances are important for a decision.

Also in spatial planning, decisions are made which could be made differently:

- An area receives a specific land usage ratio, ...
- a special route is reserved for a planned railway line, ...
- the runway of an airport is extended...
- the development of a specific area requires a very specific procedure, ...

Sometimes, the decisions are easy, sometimes they are not.

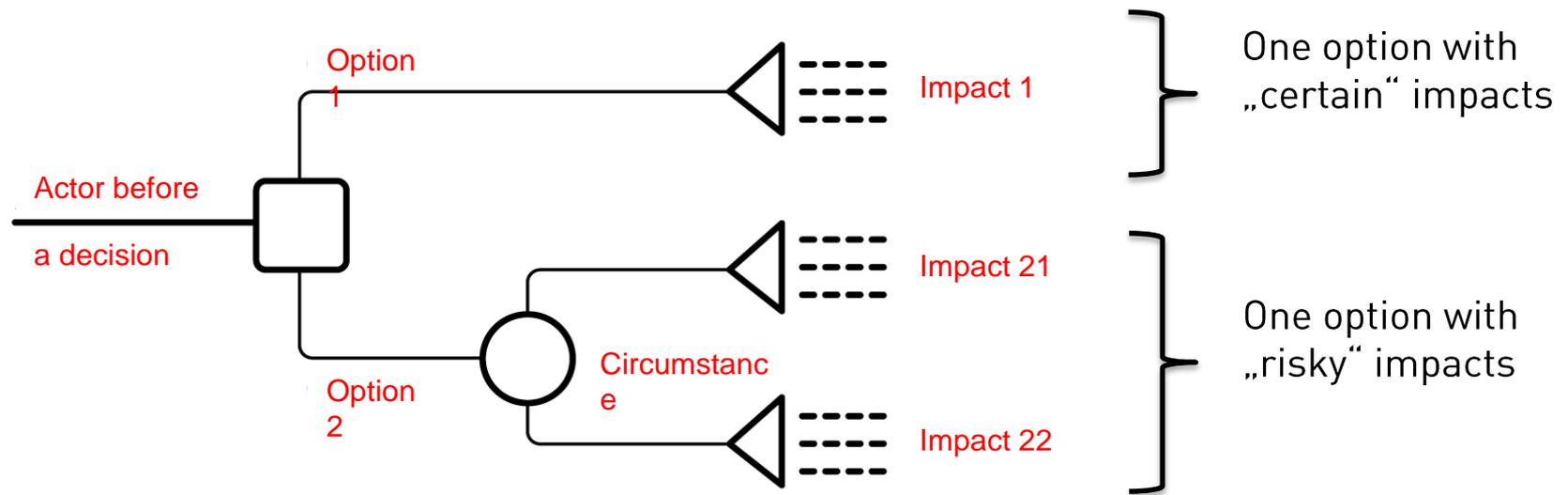
- They are easy if the advantages of an option are so overwhelming, that the advantages of other options are clearly outweighed, and that possible disadvantages of the chosen option are manageable or can be corrected later.

- Often, these relations cannot be seen directly and we have a dilemma, which has to be clarified!
- Very often we cannot even see the expected disadvantages and advantages of the different options!
- This affects the assessment of the expected impacts as well as their desirabilities (uses, subjective use).

And: Which decision-making situation could result from a past decision («impacts and consequences»)?

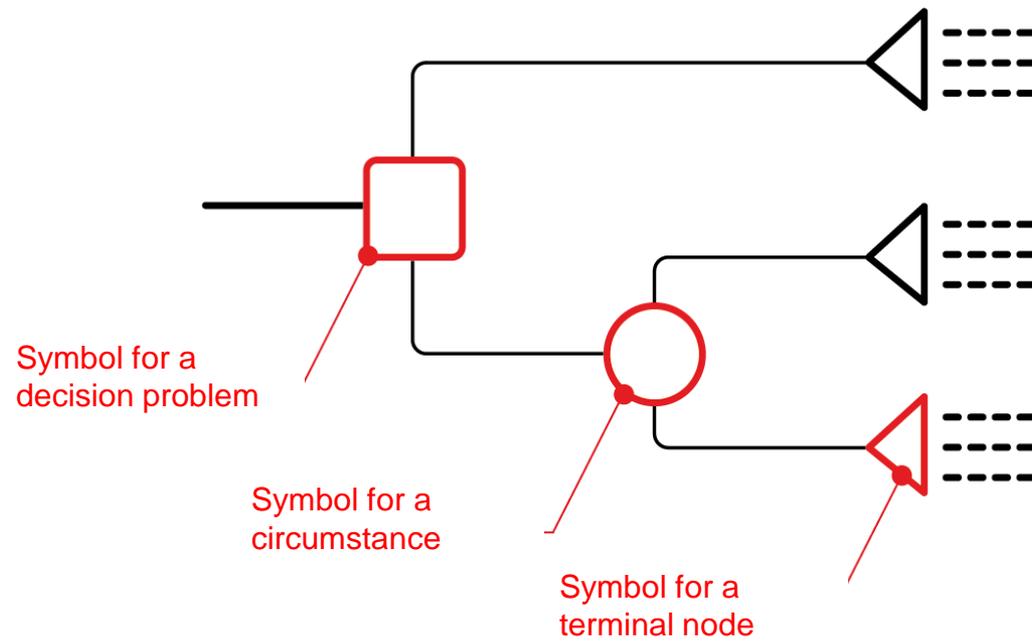
We will show the simplest form of a dilemma: An option with impacts that can be «safely» assumed is opposed to an option with unsure impacts...

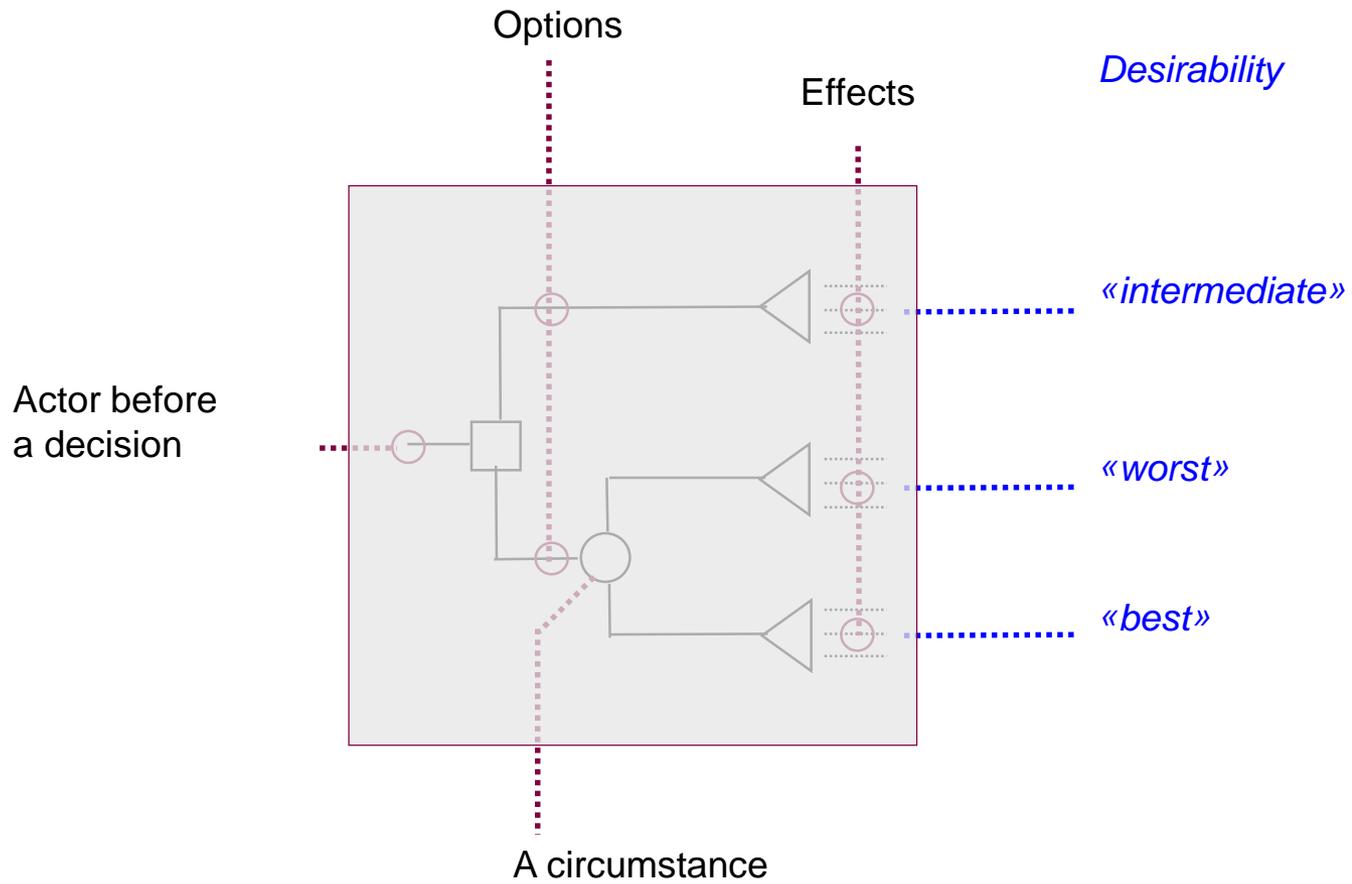
... displayed in the form of a decision tree.



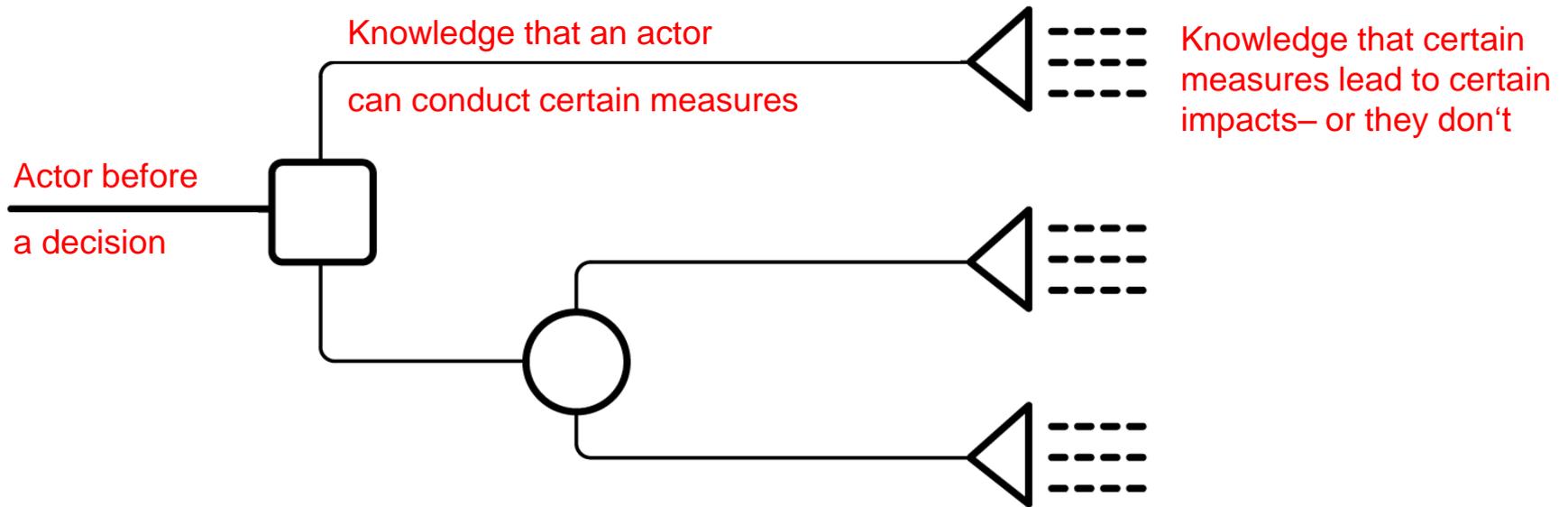
Source: R. Signer

Used symbols (conventions)

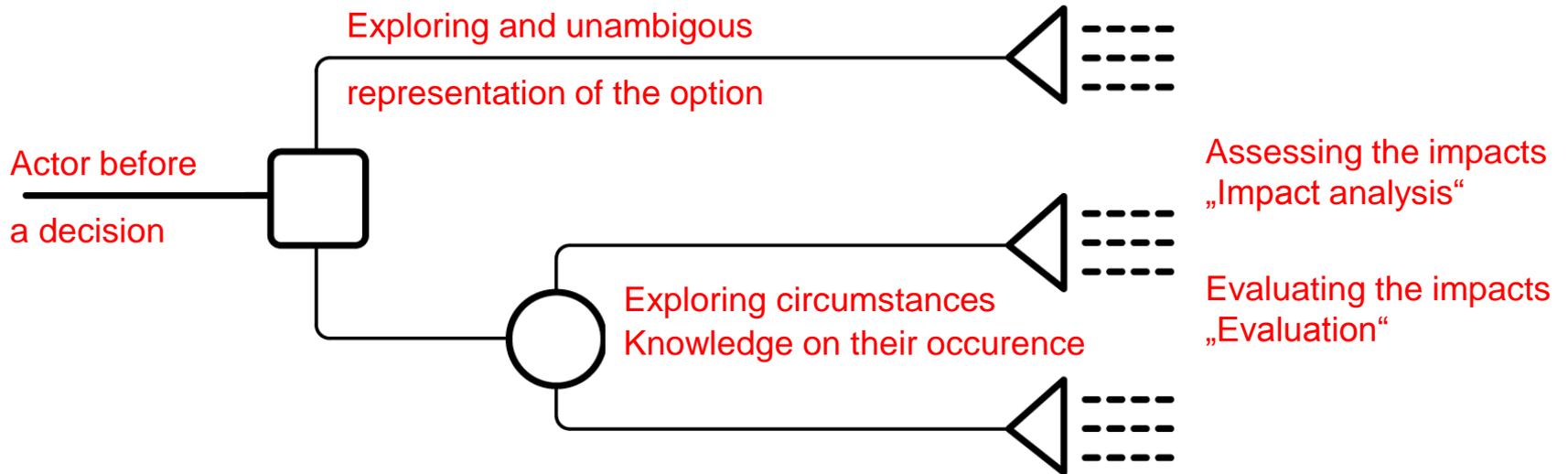




What should you know?

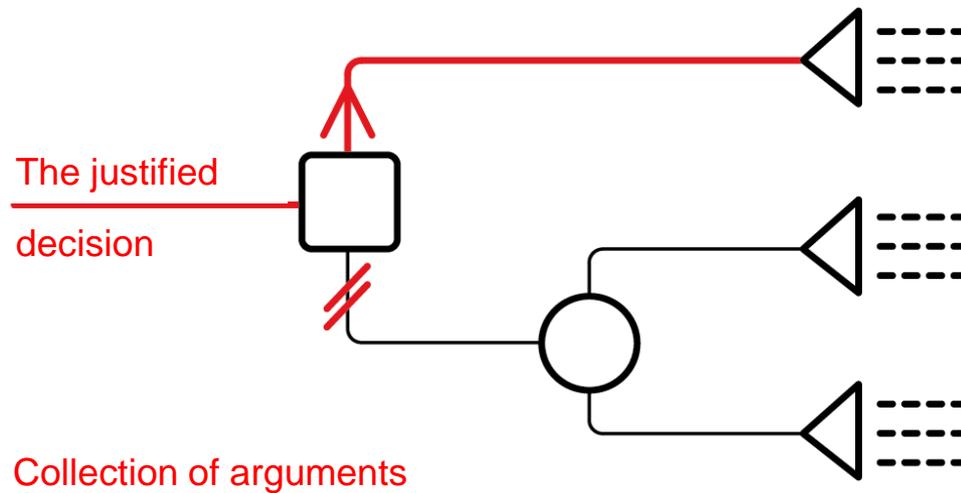


Source: R. Signer



So what should you do?

Source: R. Signer



- Collection of arguments
- 1) Reasons that speak for a decision
 - 2) Reasons that speak against a decision
 - 3) Reasons that were evaluated, but are irrelevant towards the decision

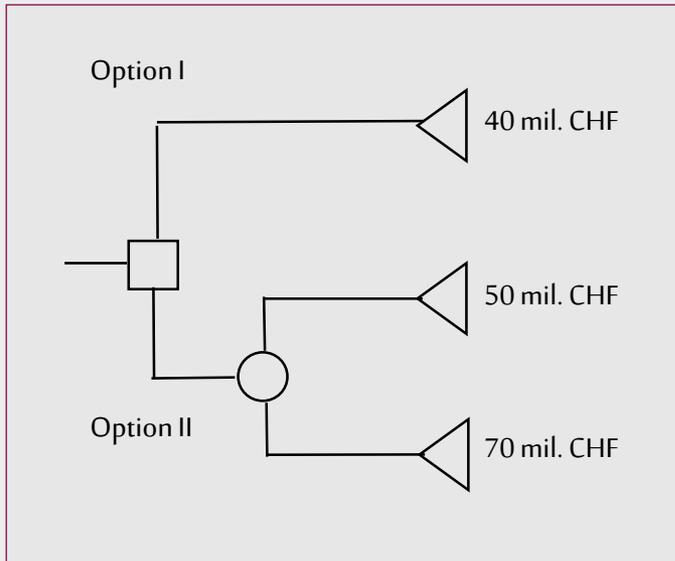
Source: R. Signer

- Deciding means to choose one option over the others.
- A precondition is knowledge on the hierarchy of the expected impacts (criteria).
- If only one judgement criteria is present, this task is easy.
- However, the most decision-making problems are characterized by the fact that the stakeholder has to consider multiple aspects (criteria) when assessing the impacts.
- The search for the best option is even more difficult, because the criteria can often hardly be compared with each other.

Such criteria could be:

- Costs (e.g. Amount in CHF – ratio scale)
- Landscape fit (e.g. «bad», «good», «very good» – ordinary scale)
- Step-by-step implementation (e.g. yes/no – nominal scale)

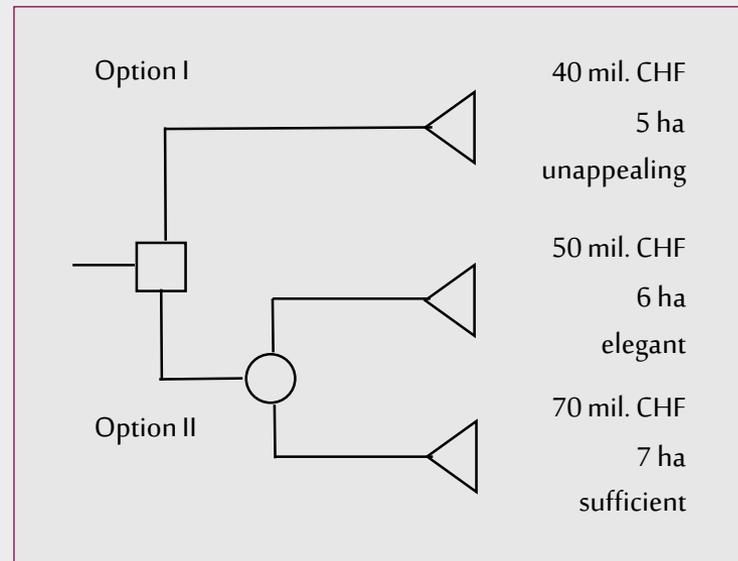
Example with one criteria (Basic decision-making dilemma)



No dilemma!

Hierarchy of impact packages is transparent.

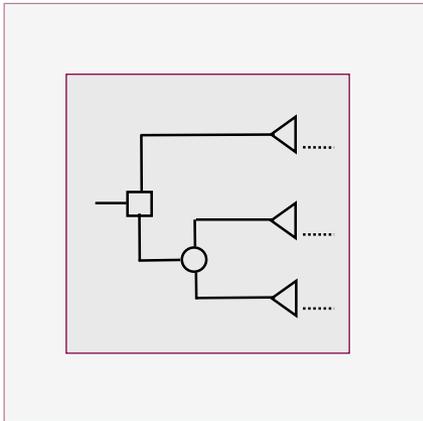
Example with many criteria (Basic decision-making dilemma)



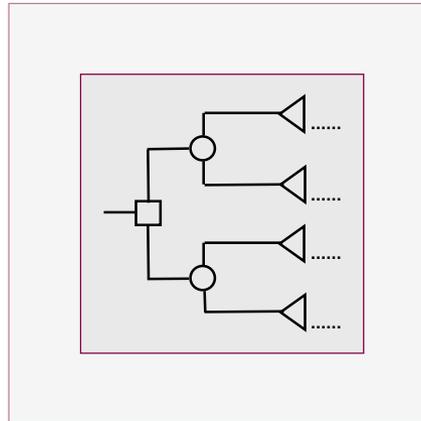
Dilemma?

What is the hierarchy of the impact packages?

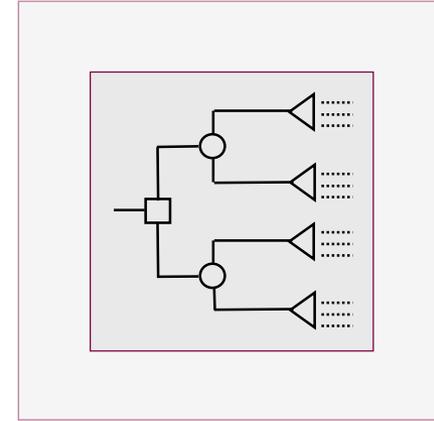
Basic decision-making dilemma



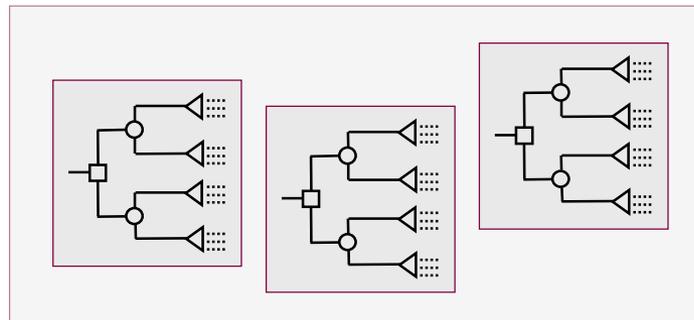
Double-risk dilemma



Multi-criteria decision-making problems



Sequences of actions and decisions



At first, you should search for reasons, why certain options can be excluded because they might lead to undesired impacts («Reasons for discarding»).

Thereafter, you should check if some options are superior or inferior in all criteria, so that they can also be discarded («superiority», «inferiority»).

Only if you are now left with impact packages which do not present a winner or a complete hierarchy, then you should use more complicated procedures. Basically, they are exchange operations.

Method overview

- Intuitive methods
- Dialectic methods
- Formalised methods

Intuitive methods

- Imagination of the possibility, that it is possible to orientate one self by one or a few more or less conscious criteria, which create an overall impression, and that this capability of orientation suffices to create a hierarchy or preference list.
- The judgement is made more or less *spontaneously* and it is not questioned on possible aspects, which lead to this – especially not according to the exchange values.

So: No systematic comparison of criteria, no conscious hierarchy of process steps or exact procedures.

Methods (selection)

Classification:

«worthy of support», «limited worthiness of support», «...

Scoring systems:

Distribute a point budget of e.g. 100 points.

Rankings:

Intuitive rankings

Pair comparison:

Ongoing pair comparison; «King-of-the-Mountain»-procedure

Dialectic methods

- Advantages and disadvantages (thesis and antithesis) of options are balanced argumentatively.
- Then an overall evaluation with intuitive methods follows.
- Goal: To gain a differentiated, transparent opinion picture on the options!
- Often oral, argumentative discourse of the advantages and disadvantages by thesis and antithesis.

Methods (Selection)

Pro-contra-method

Moderated, in groups

Law procedure

Plea, convince committee

Argumentation strategies:

- linear: Chain of arguments, suppression of counter-arguments
- dialectic: Own / counter position (try to eliminate the counter position by a balancing comparison)

Evaluation discussion

Group interview, on protocol

Formalised, compensatory methods

- Formalised means: Systematic comparisons are carried out with a specific amount of instructions/work steps in a predefined order.
- Compensatory means: different forms of criteria are «offset».
- Definable steps, comprehensible to others,
- This comprehensibility may suffer if large quantities of numeric values are used and if these are often aggregated in partial values.
- Compensatory methods: Assumption, that different forms of criteria may be offset («compensated», «balanced»). Offset and substitution. Only usable, if offset is appropriate and reasonable.

Methods (selection)

Large diversity of methods, partially with intuitive components

- Balanced pair comparison
- Equivalent-alternatives method (= Trade-off-analysis)
- Standard-alternatives method (= variety of trade-off-analysis)
- Cost-benefit-analysis.

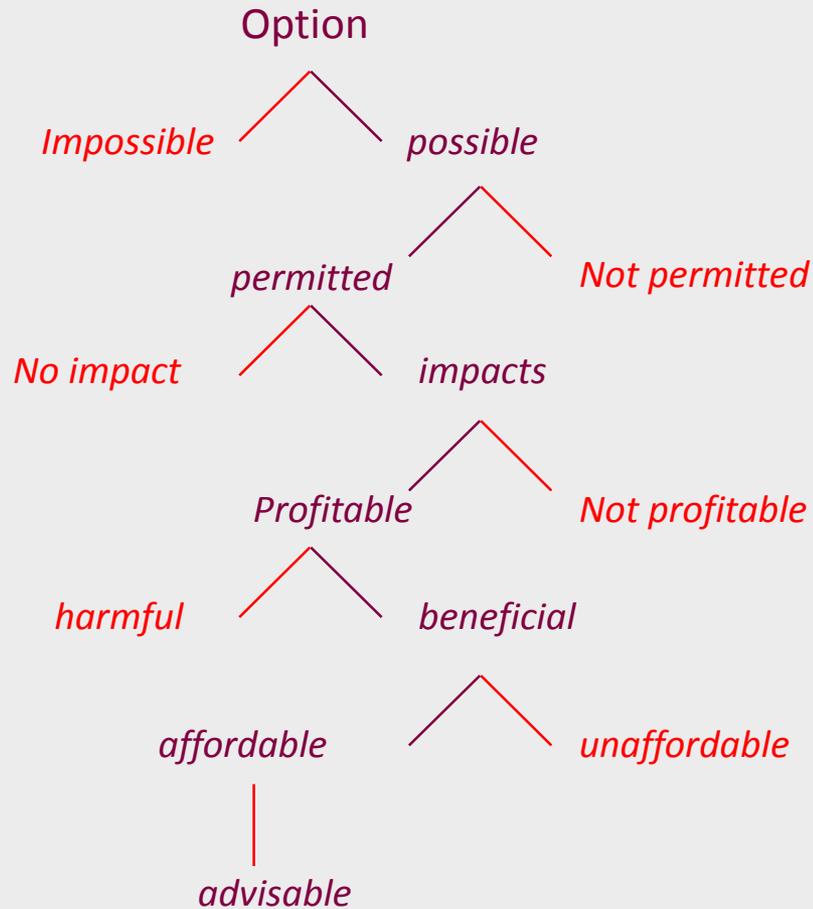
Formalised, non-compensatory methods

- Formalised means: Systematic comparisons are carried out with a specific amount of instructions/work steps in a predefined order.
- Non-compensatory means: different forms of criteria are not «offset».
- No offset, forms of criteria are conserved separately in their subject dimension.
- Also: Known as «Filtering out options» (RITTEL). Evaluation filters reduce the variety of options.

Methods (selection)

- Cascadic aspect treatment following HEIDEMANN
- Lexicographic hierarchy
 - Ranking by importance of criteria
- Non-dominated-alternatives method
 - Discarding options which are obviously not going to make it into the final selection
- Balancing according to STRASSERT

The cascadic aspect treatment following HEIDEMANN



(Müller-Herbers 1999, translated)

If you have many options with a diversity of criteria,
ask at first:

- Are there reasons to discard an option?
- Does an option dominate?

If not: Is there even a dilemma?

- In order to answer this question, the hierarchy of the impact packages has to be known
- In this case, intuitive, dialectic and formalised methods can be used for clarification.

When dealing with conflicting criteria, all preference hierarchies are always a matter of exchanging – knowingly or unknowingly, transparently or disguised.

Some guidelines

- When clarifying and solving a task in spatial planning, try to begin as early as possible with the formulation of the basic decision-making problems.
- Try to formulate them in everyday language.
- Think on which possibilities of action are possible and which desirable impacts can be gained. Also consider the undesired effects!
- Consider, which circumstances could be of relevance and what the probabilities of occurrence are.
- Check if your choice would change with changing probabilities.
- Clarify, which information could change the decision.
- Decide if any additional information has to be organised or if not.



ARL Akademie für Raumforschung und Landesplanung (Hrsg.)(2011): Grundriss der Raumordnung und Raumentwicklung. Kapitel 4. Methoden der Raumplanung. Hannover

Müller-Herbers, S. (1999): Methoden zur Beurteilung von Varianten. Institut für Grundlagen der Planung, Universität Stuttgart. Stuttgart

Signer, R. (1994): Argumentieren in der Raumplanung. Zürich