

# Decision-Making Attitude: from Behaving to Decision

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## 1 Observing the Problem

The analysis of the decision-problem starts with the analysis of observing the problem. Problem occurs, when the actual situation we're in is not in agreement with the ideal situation we'd like to reach (Kindler, 1991). In reality this is more complicated, as it can be seen in the figure. In general, the actual situation does not fall in with the observed situation, because we're afraid human reflexion is not perfect, usually. (Fig. 1)

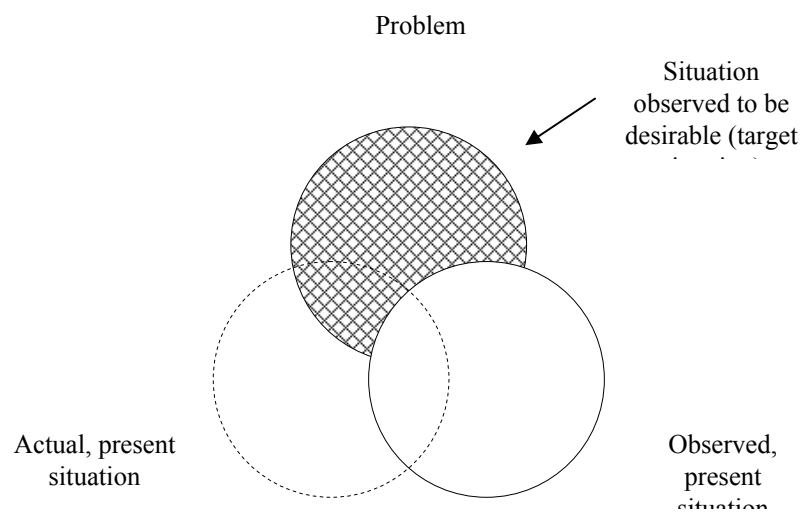


Figure 1  
Observing the problem

Of course, half-way measures are also possible, thus, with our actions (decisions) we're approaching the ideal situation and at the same time, we're modifying our opinions, that is, for example we set the half-way solution to be ideal. Decision comes after observing the problem and working out the solution plan. Previously outlined questions arise in the decision process and in the course of the realization these questions see us through. Fig. 2 shows the process of the problem-solving in details.

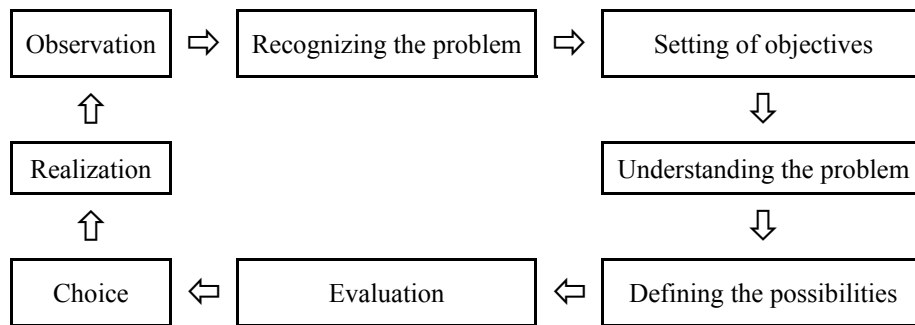


Figure 2  
Process of the problem-solving

## 2 Decision Theory Schools

Philosophical approaching of the decision theory: it handles the categories of truth, good, the ideas of uncertainty and risk. It balances what is truth, what is good and whether the given development is positive or negative. Its adaptation in practice does not give evident results, its operationalism is possible only through a series of transmissions, in the long run. Though, it's apparent that irrational economy of the consumer society with spare goods arises often in our days. In addition, environmental pollution and usually the problems of the quality of our life also emerge.

According to the classical economic approaching, conditions are safe, information is complete, results are measurable, in this way profitableness can be maximized. Unfortunately, in practice, these conditions almost never -or very rarely- occur. In this way as well they are confined to the operational decision level.

In the longer run, in decisions concerning the future, different conditions can occur -our information, simply because of the time-limit, can't either be complete- furthermore, results in a dimension (eg. in money) can't be measured often (eg. business reputation, workplace atmosphere), consequently profitableness can't be maximized either.

The administrative model stands closer to reality, as long as the observed situation, discussed above in apropos of observing the problem, is important to the decision-maker. Action variations are not available, information is incomplete. Supplying the information is expensive, it's incomplete and ambiguous even in case of serious outgoings. Thus, the decision-maker can solve the problem-treating by reducing uncertainty, that is increasing predominance of quantitative business and shortening duration. While making inquiries, costs can be reduced by making an effort to pick up simple informations as well as being satisfied with adequate decision, one does not stand for maximalization.

For the sake of completeness and specific approach it is interesting to mention a scientist's theory, who is mainly dealing with education psychology, that emphasizes the confirmation of the desired behaviour against objective and subjective conditions of decision. We can easily say that during upbringing a parent's child adopts this model if, in the parent's opinion, the child decided properly in a particular case (eg. he/she chooses a sweet less ruins the teeth), therefore, teh child will be praised or rewarded other way.

Accordingly, the Skinner-model highlights the function of rewarding, in which reinforcing is direct, effective within a short time, reinforcements should be adopted intermittently, not together. Positive confirmation is more efficient than negative, its reinforcement can be selected only by empiric methods.

For the discussion of the attitude of the decision-maker, we can not miss the well known primary- and secondary error from mathematical statistics. The decision-maker, as the figure shows, balances between the outstanding profits and the sunk expenses, while modifying the estimate in reference to the errors.



Figure 3  
The balancing decision-maker

If the result can't be measured in money, decision-maker feels regret. If the decision-maker works out a bad decision alternative, commits a secondary error

and ambushes to the trap of sunk expenses, because towards saving dignity he/she places further inputs in order to revise the result of the bad decision. These inputs mostly can be comparable to throwing money to the well. Certainly, it might occur that the decision-maker recognizing the decision error, the given action in time (eg. the investment), halts the action still in time and does not increase the bore loss with further inputs.

Table 1  
Types of error

	Good	Bad
Accept	×	Secondary error
Refuse	Primary error	×

The concept and calculation of loss of profits can be pictured graphically in a decision-matrix, in which per def. the profit loss is the difference between the optimal- and the actual decision. For example, In case of T2 state of reality (forthcoming event) S2 action variation (alternative) is the optimal decision. Thus, the loss of profits is zero in this cell of the right side matrix, while in cases of S1 and S3, this value is 500-500 thousand forints. (Table 2)

Table 2  
Loss of profits

Si/Ti	T1	T2	T3
S1	0	0	0
S2	-500	500	1500
S3	-2000	0	2000

Si/Ti	T1	T2	T3
S1	0	500	2000
S2	500	0	500
S3	2000	500	0

### 3 From Behaving to Decision

The relationship of behaving and decisiontheoretical classification, decision theory schools are pictured well in Fig 4. (Csontos, 1998)

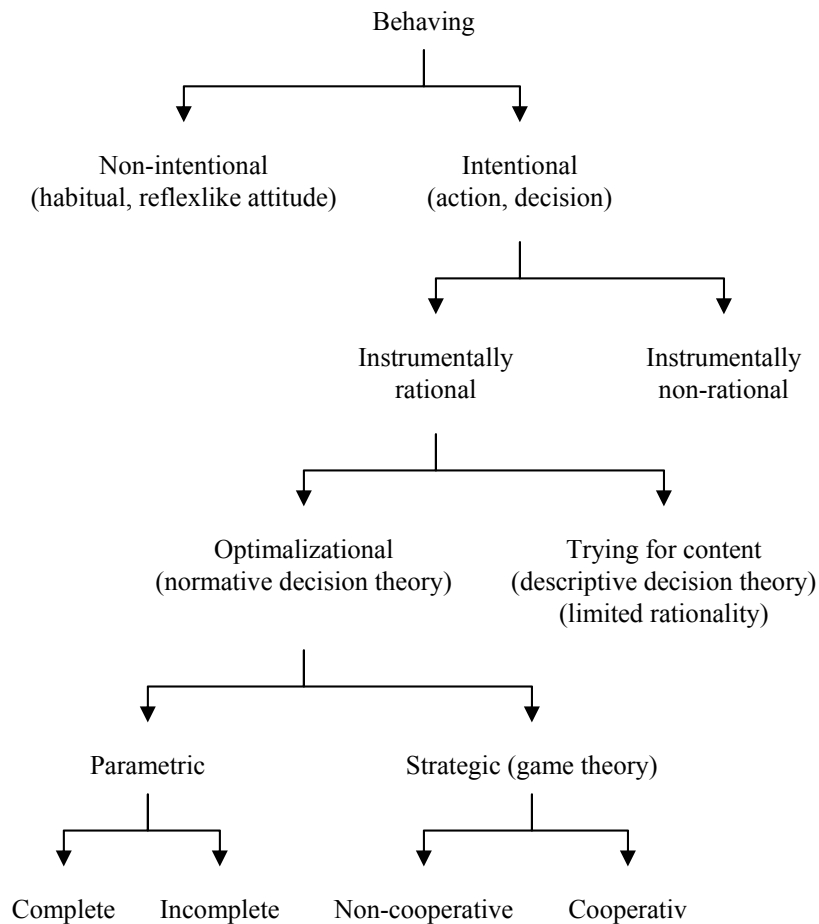


Figure 4  
From behaving to decision

## 4 Limited Rationality

The theory of "limited rationality" was formulated by Simon (Simon, 1982), in contrast to the principle of the objective rationality, which is inadequate to the reality (Kieser, 1995) through the reasons below.

- Incompleteness of knowledge

- Difficulties of evaluation of forthcoming events
- Limited selection of decision alternatives

#### **4.1 Information Limits**

Limits of acquiring the information can be summarized after March (March, 2000).

- Question of interest: The expended time and capacity to observations are limited. In decisions too much is relevant.
- Question of memory: Decision-maker's information-storing ability is limited, neither the use of extant information is easy.
- Question of comprehension: Decision-makers are often in the possession of essential informations, but their importance can't be recognized or the conclusions are not correct.

### **5 Heuristic Problem Solving**

Heuristic problem solving is however filled with countless mistakes, Baserman gives a good summary (Baserman, 1998), it is rewived with examples by Sterbenz (Sterbenz, 2004).

- Easy recalling: Decision-maker judges the frequency of a case by its peculiarity, memorability. Most of the peolpe holds that more man die in motor vehicle accidents than in stomach cancer.
- Accessibility: Frequency of easily recallable patterns from the memory seems to be higher than difficult, non-ordered, though more frequent affairs. In the English language, more "ing"-ending words are estimated by the questioned people, than words with "n" in the last but first place.
- Apparent correction: Frequency of two interlocked events is overestimated, if it meets stereotypes, social effects. It's thought, that people marrying under the age of 25 have large families, neglecting the three other logical possibilities.
- Ignoring preliminary chances: A priori chances are ignored, when getting an information matcing to a pattern. If we hear that someone likes music, we more likely feel, that he/she is an artist, not a businessman.

- Insensitivity of the size of the sample: Individuals neglect the uncertainty given from the size of the sample. Advertisement watchers regard reliable information if 4 dentists from 5 recommend the same.
- Misunderstanding of the accident: The law of big numbers is expected to also stand for particular, individual events. After three bad secretaries, managers feel to be statutory a good one to come.
- Returning to the average: People ignore that the efficiency goes back to an average level, generally. Poor production after good efficiency is regarded as the negligence of the worker, while improvement is regarded as the manager-feedback.
- False implications from coincidence: Decision-makers feel that the occurrence of conjunctive events is more likely, if it coincides with cognitive schemas. A social worker woman is rather assumed to be a bank cashier and active feminist, than only to be a bank cashier.
- Insufficient correction: Decision-makers prepare estimations from initial values, even if the initial information is irrelevant. At payment negotiations managers correlate to previous agreements even if the new one has nothing to do with the previous one.
- Conjunctive and disjunctive events: Individuals systematically overestimate the likelihood of the conjunctive events, while the chance of disjunctive events is underestimated. If the likelihood of five elemental events are 0.9, 0.95, 0.8, 0.8 and 0.7, respectively, then estimations for the complex event far exceed the 0.38 intrinsic value.
- Too much self-confidence: Too narrow intervals are set during estimate-making by the decision-makers. Marketing managers give 90-95% chance for their plans to come true, ignoring the change of the market.
- The trap of reinforcement: Individuals tend to consider informations, confirming only their former suppositions. Every tiny information on the improvement of the market is observed by managers but negative signs are charged to the accident.
- The curse of posterior prevision and knowledge: From the informations, acquired after the occurrence of the event, decision-makers think that in the moment of the decision they could have known the best solution. On Monday morning, every sportsmanager know, what tactics should have been played by the coach (Bazerman, 1998).

## 6 The Manager as Decision-Maker

One of the most important functions of a manager is decision-making, which is brought from ready-made informations by him/her or by the administration.

During this, personally or with the help of assistants, the integrated informational systems gives big hand to the manager as decision-maker in case of routine- and short-term decisions, by giving properly compressed information. In certain cases decisions can be automated (or can be deputed too). Long-term strategic decisions however neither can miss the contribution of the creative decision-maker even with the help of decision support- or professional systems.

## 7 The Integrated Informational Systems

Managers need informations to establish decision-making, as one of their fundamental challenge. For business management, integrated informational systems provide two main tasks:

- Business transactions, arising at the enterprises, be processed quickly and efficiently. (Transaction processing function -Online Transaction Processing, OLTP)
- Supply the management with informations, needed to make decisions, as well as support the decision-making by allowing eg. modelling of certain financial questions, so thus support the analysis of decision variants. (Leader informational- and decision support function -Online Analytical Processing, OLAP)

It is false to think that managers will listen raptly to our efforts, aiming at developing better informational systems. Which concern the manager, working in business, it is sure enough the business itself: more tinned foods, better shoes, bigger market-sharing, less credits and so forth. So, they will use our systems if they can make sure systems do what they have to do for a long time, fail-safely and with good cost-profit ratio.

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