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HOW TO ELECT

Democracy is strongly connected with the elections.

We elect presidents, Members of Parliament, Members of Senate, the Councilors.

In a science world there are elected principals – rectors, deans, presidents of institutes.

It is worth deliberating, how to make decisions in elections.

The background of my deliberation is Kuratowski-Zorn axiom, which says that:

„Every nonempty partially organized set, in which every sequence (that is linear organized subset) has upper constraint, contains at least one maximal element.”[\[1\]](#)

Simplifying we may say, when

1. we have partially organized set,
2. the set has finite number of elements,
3. elements are distinguishable (the set is topological),

we may choose the best element.

Generally, it is the purpose of elections.

I think this axiom has something
common with elections to parliament,
doesn't it?

Let's analyze that requirements:

1. the set of candidates has always finite accepted elements,
2. all candidates are distinguishable, at least for those who are interested in elections,
3. the problem is with classification and ranking.

The concept “the best” is connected with optimization problems. “The best” element is always chosen with the “destination function”. This function introduce organization in our set of candidates.

Concurrently, it is the most serious problem: how to construct this function?

The best solution is if this function transforms our candidate to number (this function is named functional), because the numbers are very easy to organize and everybody knows how to do that (if he/she knows how to count).

An example of that organization is muster in line according to height. But in the case of election to parliament not everybody would be happy with this criterion.

And now we have another problem: which criteria we should consider under serious elections. In practice, it is impossible to construct the function because of two reasons:

1. firstly, nobody knows which criteria should be taken into account in that case. Even, we don't know how many criteria could be! The man, especially candidate to be president is very complicated object, which cannot be described by few attributes.
2. secondly, everybody of us - electors, has own likes and dislikes. For example there are electors, for whom the most serious attribute is if candidate is handsome, good-looking, or for a woman - beautiful.

In other words, we don't know how to put together that criterions and how to transform them to one number, what would give us certainty that we elect best candidate according to our preferences.

Let's assume, that making decision about candidate electing is serious for us, and before voting we try to collect and analyze available information about candidates.

“Social psychologists have determined that human beings process incoming information in one of two modes, which they have labeled the **systematic** and the **heuristic**. /.../

When processing systematically, we think carefully and rationally about a request before making a decision. When processing heuristically, on the other hand, we take mental shortcuts in making decisions./.../

We try to operate in the systematic mode when the subject matter is important to us. But time pressure, distraction, or strong emotion can switch us to the heuristic mode. /.../

We like to think that we normally operate in a rational, logical mode, making decisions based on the facts.”[\[2\]](#).

[\[2\]](#) The Art of Intrusion: The Real Stories Behind the Exploits of Hackers, Intruders & Deceivers, Kevin D. Mitnick William L. Simon, p. 234.

Unfortunately not many people find the subject of elections “in rational, logical mode”.

We have to realize that this kind of attitude does not bring different persons to the same result - the same order of candidates.

Their rational, logical modes could be different.

Let us look at the “heuristic” acting on which decision-maker could be switched over by “lack of time, dispersion or strong emotions”.

In principle, heuristic mode is a type of intuitive approach. Most often, when there is too many factors impacting on the result of our reasoning, we act intuitively. It seems that the man with very analytical mind could take into account three factors.

Obviously, it depends on the range of variability of those factors.

For example, let us look at the problem how to make a decision about buying a present for somebody very important for us when we do not have much money to spend on it. (I had this problem when I was first time in my life in the reality of open market).

I noticed that three parameters had to be accounted: price, quality and producer. First, I tried to analyze this problem in rational, logical mode, but lack of time made my mind switched to the heuristic mode.

The similar problem is in analytical approach in selection candidates to the parliament.

As I said before, it is impossible to determine both the number of parameters and especially their ranges, and logical, rational analysis in addition.

Hence, probably we pass to heuristic mode quite quickly.

There is no way to skip the fact that many people make decision regarding election in the very last moment, probably under the influence of somebody's suggestion.

Many people, not accepting non rational choice, give up with voting at all.