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SIMON'S PUZZLE: HEURISTICS IN THE PROCESS OF MAKING POLITICAL CHOICES

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ABSTRACT

In this article we analyse one of the most fascinating paradoxes of mass politics. Based on the data from the studies of neurobiologists, neurologists, social psychology, cognitive and evolution studies we answer the question specified in literature as the Simon's puzzle: How is it possible that citizens have their opinions about politics, if they know so little about it? We began our analysis from the criticism of the economic rationality approach. To do this, we referred to the Allais paradox, cognitive dissonance theory, Ellsberg paradox, the concept of bounded rationality, conjunction fallacy and prospect theory. Next, we described the evolutionary processes shaping the minds of Homo sapiens and characterised cognitive mechanisms, thanks to which people can make political choices, especially in view of the shortage of time and information. The following heuristics are referred to herein: affect, recognition, judgment and imitation.

KEY WORDS

Simon`s puzzle, heuristics, political choice, voting behaviour, somatic marker hypothesis

CLASSIFICATION

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INTRODUCTION

A professor from one University was struggling over whether to accept an offer from a rival university or to stay. His colleague took him aside and said "Just maximize your expected utility – you always write about doing this". Exasperated, the professor responded "Come on, this is serious" [1; p.3].

Axiomatized theory of expected utility, established by John von Neumann and Oskar Morgenstern [2], became the foundation of game theory and model of rational market behaviour, and heavily influenced modern social sciences. Since its conception, it has been inspiring enough to produce many theoretical concepts in economics and political sciences. Some of them, in spite of their axiological and normative characteristics while being explicitly incompatible with data were held in high esteem by a distinguished group of scientists. Main examples of this approach are the works of rational choice theory proponents [3-6]. We would like to present the description of rational decision makers by Anthony Downs. He hold a view that (1) a rational human being is able to choose from many alternatives and (2) constructs a ranking of these alternatives by individual preference; (3) the ranking of preferences is transitive (if A > B and B > C then A > C); (4) the choice is made between the alternatives with the highest position in the preference ranking; (5) finally, *ceteris paribus*, the individual always chooses the same alternative [4; p.6]. In other words, rational human being makes decision based on the highest utility.

Where should we look for the origins of this view defining humans as *Homo oeconomicus*? The answer should be: in the age of the Enlightenment. During that time the need to create rational social order led quite often to the rise of amusing anecdotes. As an example we would like to present an advice given by Benjamin Franklin to his undecided nephew who was looking for a candidate for wife. He told him to draft a worksheet which would list all arguments for and against a candidate and then make a calculation. In this way the decision process would be optimized [1; pp.4-5].

Today, in time of great developments in the fields of neurosciences, social psychology and cognitive psychology, we know that most people do not make decisions based on the arithmetical calculation of profits and losses, as mathematicians and economists would like us to. Humans are not broadly informed beings who have indefinite quantity of time. This observation also applies to the human activity defined as politics. Therefore, we have to ask about the strategies and cognitive mechanisms which enable making decisions and judgments in political matters. The crucial point of our reflections is the problem defined in literature as the Simon's puzzle [7; p.70]. It is a problem which is expressed in a question: How is it possible that citizens have an opinion on politics while they do not know much about it?

CRITIQUE OF ECONOMICAL APPROACH TO RATIONALITY

Before we answer the abovementioned question, we are going to present several examples undermining the logic of choice based on economical axioms of rationality.

The Allais' paradox. In 1952 French economist Maurice Allais made an experiment which proved that even the most distinguished economists of his times make decisions by referring to certainty effect, therefore, their behaviour brakes the fundamental assumption of the von Neumann-Morgenstern theory. During a meeting in Paris he asked his colleagues to solve a puzzle. They had to answer a question: what would you choose in problem 1 and 2?

Problem 1

A: 33 % probability of winning 2 500 $

66 % probability of winning 2 400 $
1 % probability of failure

B: 100 % probability of winning 2 400 $

N = 72
A [18] B [82]*

Problem 2

C: 33 % probability of winning 2 500 $
67 % probability of failure

D: 34 % probability of winning 2 400 $
66 % probability of failure

N = 72
C [83]* D [17]

It is important to notice that in both examples the probability of success differed by only 1 %. In the first problem most of the answers showed that people are more inclined to decide on the basis of the probability of success, in the second problem the prize amount was deciding. The results do not make logical sense; however they can be explained by psychological factors. The probability of success in the first problem made greater impression then the analogous chance in the second problem [8, 9; pp.265-266].

Cognitive dissonance. Leon Festinger's theory is based on two crucial concepts: dissonance and consonance. Dissonance means a contradiction between two cognitive elements e.g., opinions, attitudes, judgments or between cognitive element and behaviour. Consonance, on the other hand, means accordance and equilibrium. The consequence of dissonance is a troubled state of mind which can be alleviated in a number of ways: by changing the behavioural cognitive element, changing the environmental cognitive element or adding a new cognitive element. In a post-decision situation this reduction may lead to the so-called "freeze effect", in other words, to change in cognitive processes which in effect greatly increases the appeal of the decision taken after the decision was made. To conclude – all discrepancies and inconsistencies are going to be rationalized [10].

The Ellsberg's paradox. Daniel Ellsberg, long-time employer of RAND Corporation constructed an experiment based on probability. Let's say there are 90 balls in a box, 30 of them are red, and 60 are either black or yellow. We do not know how many of them are black or yellow, but we know their total number. We have two lotteries to choose, Tables 1 and 2.

Table 1. Lottery I. Source [11; p.654].

Balls	**Number**	30	60	
	Colour	Red	Black	Yellow
Option	**A**	100 $	0 $	0 $
	B	0 $	100 $	0 $

Table 2. Lottery II. Source [11; p.654].

Balls	**Number**	**30**	**60**	
	Colour	Red	Black	Yellow
Option	**A1**	100 $	0 $	100 $
	B1	0 $	100 $	100 $

Analyzing the values of the balls in the Lottery I we can see that the scenario A is better than B, under the assumption, that we imagine a higher chance of getting a red ball than the black

one. This also applies to the lottery II. Scenario A1 is better than B1 if we think that there is a higher probability of getting red or yellow ball rather than a black or yellow. Therefore, if getting a red ball is more probable than getting a black one, then getting a red or yellow ball is more probable than getting a black or yellow. Many studies however show that majority of people would take scenario A over B, while choosing B1 over A1 [11; p.654].

Bounded rationality. While researching business organizations, Herbert Simon noticed that managers and decision-makers do not possess complete knowledge of the most essential aspects of their actions and, moreover, they lack specified knowledge, which others would see as broad enough. He also witnessed that many of them are unable to foresee the consequences of their own decisions and they do not use adequate system of their evaluation. As of the consequence he advised that most of the economic decisions should be made under precisely defined procedures [12-14].

Conjunction fallacy. Amos Tversky and Daniel Kahneman presented this short description to their students: "Linda is thirty-one years old, single, outspoken, and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in antinuclear demonstrations" [15; p.297]. Afterwards they asked the following question: Which of these options is more probable: (1) Linda is a cashier; (2) Linda is a cashier and an activist in feminist movement?

In accordance to the basic laws of logic there is higher probability that Linda is only a cashier. It comes from the fact that all cashiers create a set within which feminists are only a subset composed of feminists. However, most of the responses (about 85 % to 90 %) implied that option 2 was more probable. How did we get such a fundamental error? The most reasonable answer is that Tversky's and Kahneman's students made a judgment based on their stereotypes, abandoning laws of logic for consistency and credibility of description [15; p.297].

Prospect theory. Inspired by Allais' paradox, Kahneman and Tversky conducted a series of experiments upon which they identified the following effects: (1) certainty, consistent with choosing of prognoses leading to inevitable gain; (2) reflection, that gives information on different interpretation of gain and loss prognoses; (3) isolation, showing that people focus mainly on the difference between alternatives and not on the aspects connecting them. This leads to a situation in which different approaches yield different decisions [9].

To sum up, the above examples are only a small, but sufficient part of studies that falsify the hypotheses defining people as "econs" [16] – beings who logically and consistently maximize their expected utility. Therefore, a few questions arise: Why are we so different from economists' imaginations? Where should we look for origins of processes that created our nature of the cultured animal? In our opinion, this should be explained by looking into the evolution of our species.

EVOLUTION OF HUMAN MINDS

One of the most profound moments in the evolution of hominids was the emergence of a conscious mind. Since then the extent of life processes' regulation has widen, and this has enabled evolutionary success, as chances to survive and raise offspring have grown significantly. However, *H. sapiens* was first to have a conscious mind combined with memory, reason and speech, use of which enabled submission of other species [17]. A question must be asked: what is a human mind? According to Steven Pinker "the mind is a system of organs of computation, designed by natural selection to solve the kinds of problems our ancestors faced in their foraging way of life, in particular, understanding and outmaneuvering objects, animals, plants, and other people" [18; p.21].

The above definition has two aspects we would like to point to. First, according to the computation theory, one of the main features of human mind is processing information, having its material reflection in the brain. In other words, neuronal networks which symbolize existing objects. Perception of these objects leads to the activation of material elements symbolizing them, and then this activates symbols related to them, so in turn it is finalized by specific behaviour[1]. Secondly, our mind is not adapted to function within complex societies. We must emphasise that for ninety-nine percent of time from its evolutionary beginning, humans hlived in small hunter-gatherer groups. This is why humans are not well-adapted to facing challenges of modern industrial civilization, such as anonymous crowds, written language, government, police, courts, armies or modern medicine [18; pp.41-42].

We may observe that facing requirements of ever changing reality is beyond processing limits of our "neuronal computers", which were shaped in the Stone Age. We do not have complete knowledge nor do we have full information about the surrounding world at our disposal. It is also difficult for us to foresee consequences of our actions. Therefore, we would like to return to our main point: which cognitive mechanisms support mind in the process of making political decisions? How is it possible that we have an opinion on politics while we do not know much about it?

One of the possible answers can be found in the research on heuristics, and that means general rules, which instead of focusing on "economical" equations look for the most important information and ignore the rest [1; p.18]. In the next part of this article we are going to analyze the types of heuristics catalogued by Tversky and Kahneman and Gigerenzer[2]. The main reason for making a decision is judgment of cognitive and emotional value of an impulse. The main criterion to distinguish the following heuristics was the somatic marker hypothesis. Efficiency of these heuristics is determined by the ability to feel secondary (social) emotions. Without this adaptation, the below listed rules would have no explanatory value for a decision-making process.

AFFECT HEURISTIC

In a world which values time as one of the most important resources, our decision-making is based upon a rudimentary view of reality. This is strictly inherent to the mode our minds operate, and this heuristic is an example of our inability to calculate all arguments for and against and use advanced statistics techniques (such as multiple regression) like a mathematical machine. In this chapter we will focus on neurobiological function of emotions and feelings which underlay our cognitive mechanisms and effective decision making.

First, we would like to focus on Damásio's research on accords of extraordinary symphony which takes place when human senses are stimulated by certain impulses. To simplify, let us assume that objects are to be processed visually and aurally. We would like to present two cases: a man coming out of darkness, whose exterior is far from falstaffian one, and getting in the middle of an angry crowd. In one moment, and to be precise – in microseconds, we are going to experience visual and aural representations of these objects. Our brains activate neural connections which store previously experienced images of what we are hearing and seeing. As a result, signals activate these regions of the central nervous system responsible for reaction to certain impulses (namely: ventromedial prefrontal cortex, amygdala and brainstem). From these regions impulses are directed to other parts of brain (e.g., somatosensory cortex, cingulum) and to body (e.g., viscera and endocrine system). After a while we can experience changes our body underoges. In the above examples, it can be excessive sweating, higher or lower blood pressure, change of respiratory rhythm or muscle cramps. Due to increased demand for energy, cortisol is released to blood. Facial muscles

take shape to show fear and the mind produces emotionally driven images of action plans. The fact of feeling emotions, in this case – fear, enables us to make the most suitable way use of distress. If it is an escape, impulses from the brain to the body will increase blood flow in leg arteries to provide additional oxygen and glucose in order to prepare leg muscles for sudden exertion. Last accord of that symphony is played by periaqueductal gray (PAG), which orders production of natural opioids blocking the transfer of pain signals to brain. In this way our pain tolerance is radically increased [17, 20].

Importantly, the presented mechanism also works in other, more complex situation e.g., when we are in a position to make a judgment based on social norms. Let's assume that we have been asked in a street to sign a list endorsing a candidate for a public office. What conditions influence our decision to endorse that candidate? We know that it is highly improbable that we are going to do that basing on rational calculation of gain and loss. This strategy would involve creation of a spreadsheet with all arguments for and against with mathematical values attached to them. Presumably, it would take several hours and it is possible that it would not yield expected results. According to hypothesis formulated by Damásio, the accuracy and effectiveness of decision-making is increased by special kind of emotions, which he calls somatic markers [19]. They originate from socialization and education, and they allow us to match certain impulses with according body reactions. This is why a candidate from party X, which evokes more positive feelings in our mind than his/her opponent, assuming little or no knowledge of their political values, can gain our support. This can also work the other way, e.g., if we are not interested in politics our decision of not endorsing anyone may be rooted in envy, contempt or discouragement.

In a heart of heuristic affect lies a process which changes the scope of the "right question": do the candidate's qualifications suit him/her for office? to a really "heuristic question": do I like him/her? What emotions do I attach to this person? Psychologists stress that negative inclinations are displayed more often [21]. This, according to Damásio's hypothesis, is a result of our brain's selection of impulses under one criterion lying beneath others: biological value. The more important for survival the image is the higher and more intensive are the emotions attached. Individuals who adopted this strategy are better adapted to changes, environmental conditions and increased their evolutionary chances for both survival and reproduction. For example, small hunter-gatherer tribes exploring African savannahs or areas of both Americas were unable to sacrifice resources (such as time) in order to analyze all phenomena they experienced. In order to survive, their minds had to be concentrated on one the most important information while ignoring the rest. It could be fear of predator or fear for the offspring left with no supervision [22, 23].

RECOGNITION HEURISTIC

Neuronal representations function as a storage for pictures of surrounding objects, they enable recognition of their names and recollecting events tied to them. This adaptation also enables to confront past events with the present ones, and serves as a fundament for planning [24]. In uncertain conditions most often the only ground to make a decision is a simple recognition of one of the options. However, this simple strategy turns out to be very effective.

Andreas Ortmann and Gerd Gigerenzer tested that strategy. In 2000 they have entered into a contest organized by "Capital" magazine. During 6 weeks, the contestants could buy and sell stock of 50 multinationals to generate the highest possible profit. Among 10 thousand of contestants was also "Capital's" editor-in-chief, whose portfolio was treated as a benchmark. Professional stock traders mostly used a strategy of gathering information about stocks and using computers with huge computational power. Ortmann and Gigerenzer selected a

different approach. They asked one hundred pedestrians in Berlin, 50 men and 50 women, if they have ever heard of enterprises listed by contest organizers. When they obtained this information they created two portfolios: first, with the most recognized brands, and second, for control purposes, with 10 least recognizable ones. The first portfolio generated a profit of 2,5 %, and was a better result than 88 % of all contestants, while the second took a loss of 18,5 % which was as huge as loss of Capital's editor's-in-chief portfolio [25].

The results of this experiment became a part of heuristic research and provided valuable data on decision-making. It turned out that partial ignorance represented by Berlin pedestrians may bring the same or better results than broad knowledge of specialists. Gigerenzer explains why: "Recall that in an uncertain world, a complex strategy can fail exactly because it explains too much in hindsight. A portion of the information is valuable for the future. A simple rule that focuses only on the best reason and ignores the rest has a good chance of hitting at the most useful information" [1; p.163].

Producers, marketing leaders and politicians are perfectly aware of the significance of the above. The latter, especially in modern democracies, which are tightly connected to the media, are going at great lengths to be present in television, radio, press and the Internet, simply because that way they become recognizable by citizens. They advertise themselves and use marketing tactics assuming that if voters do not recognize them, they will not receive votes from them[3]. The same fear arises when a new political formation is created. At that point not only financial resources or friendly journalists are keys to success, but also symbolical name connecting the new party to traditional expectations of electorate. This strategy has been grasped by Lithuanian politicians of Order and Justice party and Polish politicians of Law and Justice party.

These names are of symbolical nature because people gave them sense, value and meaning for communication and cognitive purposes. The same rule may apply to each word, phrase, gesture, place or object as they also may become symbols [27; pp.28-29]. There are two types of definitions in literature regarding "symbol": (1) Conventional signs – letters, numbers, coats of arms, flags, trademarks, road signs, mathematical signs; (2) Images, representations, notions, objects, and experiences connected to other notion or object [28; p.5].

Emotional attachment to conventional signs, images and notions facilitate socialization and education, and also bear huge mobilization potential. This potential enables modification and synchronization of contrary motivations of various individuals, which in turn strengthens the functionality of a political system [29]. However, it is possible under the condition that signals encoded in symbols can be understood. For an American, a Russian or a French, national flag and national anthem usually generate deep emotional reaction, while other flags and anthems can symbolize nothing but colorful sheets and more or less agreeable melodies [30]. The same observation applies to perception of other political symbols. The typology presented by American political scientist can be used as an example: (1) Symbols connected to a political community – the flag, America, "Constitution"; (2) Symbols associated with structure, norms and characteristic functions of a political regime – "Congress", presidency, "one man, one vote"; (3) Situational symbols, (a) associated with current political power – Reagan's administration; (b) associated to non-governmental political entities – Ralph Nader, NRA; (c) related to politics and political matters – "right to life", gun control [27; pp.36-37].

Capability for symbolic thinking, as Mircea Eliade pointed out, is an immanent attribute of human life, it predates language or discursive mind. Symbols reveal certain aspects of reality "which defies any other means of knowledge. Images, symbols and myths are not whimsical creations of the psyche; they respond to a need and fulfill a function of bringing the most hidden aspects of being to light" [31; p.12]. Evidence of symbolic thought, which is a

prerequisite for creativity and language capability, can be dated several dozen thousand of years. One of them is a 75 000 years old ochre tile, covered with geometrical signs found in Blombos cave in southern Africa. Another evidence was found in central Africa – a harpoon ended with barbs made of bones, dated back to ca. 80 000 years ago [32, 33]. According to one of the hypotheses our hominid creativity started to flourish thanks to natural selection which favored individuals with greater quantity of neural connections. Fossil records show how many changes occurred in prefrontal cortex, which are responsible for plan realization and coordination of thought processes e.g., Brodmann area 10 which takes part in abstract thinking has grown two-fold since our ancestors split from evolutionary line leading to chimpanzees [34]. However, it worth noting that not only biological transformations enabled modern humans to manipulate the surrounding world in an unprecedented manner. Among other factors, amplifying abilities of human minds were processes accompanying population growth e.g., necessity to function within more complex social relations [35, 36].

JUDGMENT HEURISTIC

Apart from recognition, there is another activity that our brains do – we make judgments. Simple judgments are made on everything that has an effect on an organism and within organism itself e.g., state of health or images recalled from memory. Even smallest aspect of a situation which we experience becomes a subject of analysis by nervous system. This simple mechanism allows humans to detect danger and act accordingly; it is also not exclusive to humans[4]. We have inherited it from our distant ancestors, when ability of fast recognition between friend and foe greatly increased chances of survival in a habitat more dangerous than the one we live in today [38; pp.89-90]. Improvement of cognitive mechanisms allowing the judgment of opponent's strength and fighting skills was determined by high level of aggression which shaped social relations of our predecessors. Paleo-anthropological, anthropological and ethnographic evidence shows that it was mainly males competing for food and sexual partners that were under such a selective pressure [39, 40]. Natural selection favored those males who were able to predict their rivals' intentions and select the best way out of peril. Research made by evolutionary psychologists and anthropologists suggests that the ability to decode signals appearing on top parts of a body, and especially face, was essential [40].

This mechanism did not lose its value in modern societies. People try to read intentions and predict events from expression and shape of strangers' faces. Usually lowered lip corners and/or wrinkled brows make us uneasy; meanwhile self-confident smile and/or square jaw are associated with inclination to domination and competence. The same rule leads us to perceive someone's attractiveness, which influences our behaviour towards the person. Moreover, this adaptation mechanism also relates to political phenomena. We would like to mention research on making voting decisions which has shown that we can make an immediate decision based on perception of pictures of candidates' faces used in the electoral campaign [41, 42]. In the same way our actions are determined by unconscious prejudices towards gender, age, ethnic origin, height, weight, accent or clothing [17, 43].

Intuitionally we judge the left-right inclinations of political parties. As Gigerenzer points out, "The political Left-Right division is a simple cultural cue that provides many of us with an emotional guide for what is right and wrong in politics. It is so emotionally overwhelming that is can also structure what is politically acceptable in our everyday lives. People who think of themselves as politically left-wing may not want to be friends or even talk with someone who is politically right-wing. Similarly, for some conservatives, a socialist or communist is almost an alien life form" [1; p.138].

In the face of insufficient knowledge and lack of time, one of the key reasons for voting on a specific party is its position on a left-right scale. The closer the party is to the optimal preference, the greater is the chance of achieving electoral success by winning human perceptions. Taking part in elections does not necessarily require knowledge about complex issues such as: social policy, immigration policy, family policy, nuclear power, in vitro, stem-cell research, abortion, secular state or foreign policy. Subjective perception on left-right scale and ability to estimate distances between parties is sufficient. This strategy reduces multiple levels of political landscape into one dimension [1, 44].

IMITATION HEURISTIC

Developmental and animal psychologists, as well as primatologists and biologists, have conducted research, showing that humans are the only species that imitates others' behaviour consciously and on a large scale [45, 46]. Imitation can be observed even in few-days-old new-borns. They reproduce mimics of adults such as smiling, opening and closing mouth or put out tongues if mother performs analogical gesture. Due to brain structures responsible for registration of movement and recognition of faces (and their expressions), humans can participate in a world of social interactions [47, 48]. Later, as they mature, children use imitation techniques that have a certain aim – adaptation to conditions of ecological and cognitive niche they populate. Their behaviour stops being exact reflection of adults' and becomes a purposeful actions which indicates intentional manipulation of surrounding objects [49].

Reproduction of behavioural patterns in a life of an individual and whole societies fulfils a number of essential functions: (1) It provides behavioural patterns compliant with the ethics of the reference group; (2) It considerably improves social acceptation while satisfying community instinct of the individual; (3) It enables self-identification; (4) It is a shortcut which enables fast decision-making, especially while having insufficient amount of time and information; (5) It is a *sine qua non* condition for cultural evolution [1, 49-51]. Relating to the subject of this article, we would like to focus on the last two functions which we explain further in the text.

It would be very hard to imagine transmission and internalization of cultural patterns without the ability to learn behaviours, adopt attitudes and use speech. Thanks to these adaptations, cumulative development of knowledge, transmission of ideas and social institutions exist. L.L. Cavalli-Sforza distinguished two directions of culture transmission: vertical and horizontal. The former encompasses inter-generational flow of cultural patterns in a family or a group bound by strong social ties. The latter one is similar to a spreading wildfire. It references to the relations between unrelated individuals who do not come into deep, relevant and intensive social relationships [36; pp.179-187]. As an example of vertical transmission we would like to point to multigenerational transfer (both written and oral) of holy books. Fast spread of technological innovations and political institutions of the first municipal civilizations, as well as mechanization processes, which started in the 10^{th} century, are examples of horizontal transmission.

Cognitive mechanisms specifying cultural transmission also play a significant role in a world of politics. Evolution of what is political within the social context would not be possible and politics itself would not emerge. Individuals would not be able to adopt attitudes, norms, values and behavioural patterns, which would lead to difficulties and prolonging of political socialization process. In this case people imitate according to a simple and practical rule: to do what the majority of others do and do what successful individuals do [1; p.217]. People use this heuristic from a very early childhood and it enables internalization of opinions and

beliefs which dominate in their respective groups such as: family, school, companies, social and political organizations or public institutions [52-59].

Significance of this adaptation is best presented when we look at the evolution of human species. About 60 000 years ago first representatives of *H. sapiens* left Africa and got to south-west Asia and southern Eurasia. After about 20 000 years they expanded towards Australia in the south and Arctic Ocean in the north. When they passed Bering Strait, they quickly colonized the area of both Americas, as well as many of the Pacific islands. This odyssey would be impossible without transmission of knowledge and technology, whether it would be simple tools, ideas, social institutions, values and so on, which did have to be reinvented but were ready to use, since it was much easier to copy them from individuals who had already benefited from them. We would like to give few simple examples of skills that were crucial during human journey from Africa, which had to be copied by following successful generations: sewing warm clothes, construction of shelters, creating light, warmth and arms, hunting, cooking or building boats with floats [32, 51, 60-62].

CONCLUSIONS

In the second half of the 20th century ideas which assume a priori that a rational human is guided by rules of logic to maximize the expected utility of his/her actions gained noticeable influence on economics and political science. This strategy was also used to explain election decision-making. The rational voter hypothesis states that a human facing many alternatives can make a decision based on a transitional ranking and casts a vote on the highest-rated options. Under non-changeable circumstances the choice will be the same. It is important to note, that a being would have to possess knowledge of all possible options and also would have indefinite quantity of time. We asked a question about explanatory values of hypotheses which describe humans as *H. oeconomicus*. Below is the conclusion list of our analysis: (1) conditions of ecological niche populated by humans require fast decision-making. It would be impossible for our brains to function like accounting machines gathering all arguments for and against and use advanced statistical tools such as multiple regression. In reality we do not take all the options into account. Most commonly we focus on some chosen processes with higher emphasis on these ones which have crucial value for our survival. The main reason for that is the evolutionary history of our species; (2) in constantly changing and uncertain reality the strategy of focusing on one, most important premise, while ignoring the rest, might be the most beneficial. This observation is also applicable to politics; (3) facing the deficits of time and information citizens are making political decision not by arithmetical calculation of profit and loss but by heuristics. Voting decisions are determined by emotions which are initiated by politicians within electorate and environment. Their decisions can be influenced the fact of knowing a candidate or his/her political party affiliation. Sometimes the appearance of a candidate may influence the decision, especially shape and expression of his/her face. In this context unconscious biases related to age, gender or ethnical background play important role. People also judge the position of the candidates on a left-right scale.

Conclusions of this article can be considered a discussion point in the field of theoretical approaches in the social sciences. As of now economical schools and normative schools and ideas have a great influence over them and dominate academic discourse. In our opinion the need to employ life sciences becomes more apparent as the hypotheses built on their grounds can produce better answers to the key questions regarding human nature.

REMARKS

[1]A.R. Damásio proposed a very similar hypothesis. According to him, knowledge which we need to reason and make decisions has a form of perception pictures locating their material reflection in neuronal representations [19].

[2]It is worth noting that Tversky and Kahneman analyze heuristic in categories of dysfunction and irrationality, while Gigerenzer points to challenges of ecological niche we populate and see them as cognition mechanisms quickening and optimizing decision-making.

[3]Recognition by others alone does not guarantee electoral success, it is crucial to use proper manipulation techniques. Without them it is very easy to discredit oneself [26].

[4]In a world of animals other than *H. sapiens* the stake is much higher. The animals which cannot detect and judge danger fast enough have much lower chances to survive and pass their genes. Biologist R. Dawkins concludes: "The whole point about behaviour, on the other hand, is that it is fast. It works on a time-scale not of months but of seconds and fractions of seconds. Something happens in the world, an owl flashes overhead, a rustle in the long grass betrays prey, and in milliseconds nervous systems crackle into action, muscles leap, and someone's life is saved-or lost" [37; p.55].

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SIMONOV PROBLEM: HEURISTIKA U ODABIRU IZMEĐU POLITIČKIH MOGUĆNOSTI

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SAŽETAK

U radu analiziramo jedan od najfascinantnijih paradoksa politike masa. Na temelju podataka iz neurobioloških, neuroloških, socijalno psiholoških, kognitivnih i evolucijskih istraživanja odgovaramo na pitanje, u literaturi uobičajeno nazivano Simonovim problemom: Kako je moguće da građani imaju mišljenje o politici, ako znaju toliko malo o njoj? Analizu započinjemo kritikom pristupa ekonomskog racionalizma za što koristimo Allaisov paradoks, teoriju kognitivne disonance, Ellsbergov paradoks, koncept omeđene racionalnosti, pogrešku konjunkcije i teoriju očekivanja. Zatim opisujemo evolucijske procese koji oblikuju um homo sapiensa i kognitivne mehanizme zahvaljujući kojima ljudi se ljudi mogu odlučivati između političkih opcija, posebno u vidu ograničenosti dostupnog vremena i informacija. Pritom se rabe ove heuristike: afekt, prepoznavanje, prosudba i oponašanje.

KLJUČNE RIJEČI

Simonov problem, heuristika, politička mogućnost, ponašanje glasača, hipoteza somatskih markera