Rationality and Uncertainty

Marek Hetmański, Lublin, Poland

1. The Limits of the Classical Model of Rationality

Rationality of human practical and cognitive endeavors, both individual and social, is an unquestionable epistemic value. However there are different concepts, definitions and theories, and no one can deny that rational behavior, perceived as a compromise between the means and the ends, is an inherent part of the human nature. It is an objective and indispensable human's feature; all degrees of it or deviations from it are simply irrational. Rationality does not demand special epistemological or ethical justifi-cations but its theories do. As John Searle says: "(…) rationality as such neither requires nor even admits of a justification, because all thought and language, and hence, all argument, presupposes rationality. One can intelligibly debate theories of rationality, but not rationality" (2001; xvi). Actually, philosophical discussions on rationality do not cease to generate special interest in modern times. However, the 20th. century debates on various theories of instrumental and critical rationality showed that this highly evaluated (and perhaps overrated) concept is the ideal and it has not reached full and unquestionable realization. One can present (as Searle does) the classical model of general (idealized) rationality, advocated mainly in conti-nental philosophy and positivistic philosophy of science, as the sum of the following statements: (1) rational actions are caused by agent's self-reflective beliefs as well as desires; (2) rational actions follow special consistent rules; (3) rationality is a cognitive faculty; (4) a wrong course of rational action is apparent; (5) practical reason is all about means, not ends; (6) primary desires of an agent must be consistent with his/her rational beliefs. The model implies that humans, thanks to their explicit desires, act and know reasonably by following exact rules, and trying to achieve their goals through deliberately chosen means with know-ing how to use them (in a rational proportion) to, finally, satisfy their wishes, desires and opinions to the full.

There are crucial epistemological assumptions underly-ing the classical rationality theory. They can be outlined with the following set of theses or postulates: (1) human reason is capable to perform any intellectual tasks irre-spective of time, means, and computation; (2) there is a correlation („representativeness", „intelligibility") between reason and world's complexity; (3) humans have access to maximum information and complete true knowledge possessing perfect, unlimited computational power to perform rational reasoning; (4) only the best cognitive and practical solutions are acceptable; (5) the principle „maxi-mize your expected cognitive or practical utility" is fully rational and serves as a criterion of rational–irrational distinctions. In other words, cognitive optimization (omnis-cience plus omnipotence) is the main feature of rationality.

Many objections have been raised against the above ideal. One of the most convincing is Herbert Simon's theory of bounded rationality. His methodological objec-tions against the principle of "subjective expected utility" implied by the classical model allowed him to say that „bounded rational agents experience limits in formulating and solving complex problems and in processing (receiv-ing, storing, retrieving, transmitting) information". Humans live in the world with many different problem-solving strategies and none of then can be furnished with perfect and complete knowledge how to deal with the world's complexity. "Rationality could focus on dealing with one or a few problems at a time, with the expectation that when other problems arose there would be time to deal with those too" (Simon 1983; 20). Bounded rationality is not the fault of human behavior, it is inalienable from the human affairs.

Other objections come from the cognitive science ex-perimental research programs. Daniel Kahneman and Amos Tversky demonstrated that people almost always rely on heuristics, but not on fully rational (algorithmic) inferences or reasoning, and do not imply the complete knowledge because of subjective opinions, incomplete information, common sense etc. Heuristics is biased cognition. It entails unavoidable errors, stereotypes, illusions, and prejudices. Nevertheless it is useful and serves its purpose, and all people (laymen and scholars alike) apply it. This is evident in judgments made where sufficient or proper information is missing and biased cognition is at play (i.e. insensitivity to prior probability or predictability, misconception of chance or illusions of the validity etc.). Finally, people systematically violate stan-dards of rationality when making decisions or solving problems under uncertainty, which makes them partially irrational.

Gerd Gigerenzer's program goes in the same direction. However, he doesn't treat heuristics as biased or false cognition because people rely on it due to the structure of the problem, not on its cognitive inclinations (good or false). Besides, he opposes to conceiving irrationality merely as the fault. Relying on heuristics is not an error; it happens even in serious and cognitively important situa-tions. Paradoxically as it may appear, good decision making frequently requires ignoring part of available information and performing less complex cognitive estima-tions and predictions. Rational rules may be at the same time rational and irrational. What makes them really reasonable does not depend on the ideal of rationale but their effectiveness. Violations of logical rules in practical rationality are not cognitive illusions. They constitute empirical evidence that fast and frugal heuristics is deeply embedded in human nature. As Gigerenzer says: „The adaptive toolbox contains the building blocks for fast and frugal heuristics. A heuristic is fast if it can solve a problem in little time and frugal if it can solve it with little informa-tion. Unlike as-if optimization models, heuristics can find good solutions independent of whether an optimal solution exists. (…) Heuristics work in real-world environments of natural complexity, when an optimal strategy is often unknown or computationally intractable" (2008; 7-8). Most of such heuristics are apparently irrational but, in fact, they are effective in reasoning. They are examples of gut feelings as spontaneous and unconscious (instinct) types of practical rationality. Useful in the risky and poor deci-sions (e.g. in medical cancer's treatment), gut feelings are reliable in spite of incomplete knowledge and only frag-mentary information they encompass. Rationality, as Gigerenzer's research programs present, is a biological adaptive tool not identical with the rules of formal logic or probabilistic calculus; uncertainty is its substantial part.

2. What Epistemic Value is Uncertainty?

Biased cognition, violating formal reasoning, intuitive (gut) feelings, incomplete information, ignorance, and intuitive knowledge – all these psychosocial phenomena constitute uncertainty. Formally speaking, uncertainty is simply opposite to certainty and it does not have the same epistemic value. Cartesian-Kantian-Husserlian tradition didn't ascribe any special value to uncertain experience or knowledge, treating them merely as cognitive faults or intellectual mistakes, and, finally, placing them on a very low position (if any) on the epistemic scale. However, uncertainty, viewed as an epistemic value and/or ontological world's feature (introduced specially by Heisenberg's principle of uncertainty and Shannon's mathematical theory of communication), entered the domain of epistemology during the last decades. Probabilistic as well as non-probabilistic research programs concerning information processing systems were successfully put into practice in cognitive psychology, decision theory, management science, sociology of organizations, risk assessment, and studies of disaster and accidents. In Michael Smithon's opinion, all these examples point out to "the emergence of new normative and explanatory paradigms of uncertainty and ignorance in response to the increasing complexity and uncertainty of the artificial environment" (1989; 4). In other words, uncertainty as an epistemic issue emerged more as a consequence of the socio-cultural changes than the effect of inner epistemological disputes.

Epistemological analyses of the "knowledge and the flow of information" paradigm established by Fred Dretske (1981) are lately significantly facilitated by psychological and anthropological studies on human behavior in which uncertainty is a dominant feature. Social psychologists and cross-cultural anthropologists introduced the concept of uncertainty orientation which refers to the individual (and notional as well) differences in how people cope with uncertainty. Their studies focus especially on the spectrum of different attitudes and strategies in which people cope with uncertain situations in the different cultural backgrounds. "At opposite ends of a continuum are those considered uncertainty oriented (UOs) and those considered certainty oriented (COs). UOs are *high* in the desire to *attain* clarity, but *low* in the desire to *maintain* clarity. Their preferred method of handling uncertainty is to seek information and engage to activities that will directly resolved the uncertainty. Such people can be described as having a strong 'need to know'. They are the people who try to understand and discover aspects of the self and the environment about which they are uncertain. In contrast, COs are *low* in the desire to *attain* clarity, but are *high* in the desire to *maintain* clarity. When confronted with uncertainty, COs use indirect methods such as relying on others or heuristics devices such as leadership status, group norms, or source expertise to provide a resolution" (Sorrentino et al. 2008; 52). Widely performed cross-cultural studies show that such uncertain/certain orientations are due to the Eastern-Western cultures and societies. The value of uncertainty depends on so many variables that it isn't the simple opposition to certainty. It doesn't stand in contrast to true, complete and rational knowledge because it is indispensable part of it. Despite the cultural and social differences the role of uncertainty in cognition and knowledge is unquestionable and therefore should be epistemologically analyzed.

3. Rationality and Uncertainty Viewed from the Social Epistemology Perspective

Another way of confronting rationality with uncertainty is to pose a question: what is a possible criterion of division between complete and incomplete, proper and improper, certain and uncertain information or knowledge in the area of individual and social experience? Which elements of this wide spectrum are rational and which are not? Is such a criterion rational at all? Within the framework of the classical model of rationality such questions are, despite declarations, unsolvable. However, social epistemology seems to offer reasonable solution. Its approach amounts to treating rationality as one of the leading social practices of achieving satisfactory, not always complete knowledge. In Alvin Goldman's opinion: "(...) there are many social intellectual practices that a wide ranging social epistemology should hope to asses; and the rationality criterion seems incapable of offering insight about them. (...) How would the rationality criterion generate any evaluations or guidance in this area?" (1999; 76). The answer is simple – epistemological efforts ought to be narrowed down only to the critical and reflective analyses, since neither one privileged rationality exists nor no one should simply expect the strict delimitation among rational and irrational endeavors.

Steve Fuller's remarks on bounded rationality concept seem to follow the same line thought. "The key element of the rhetoric of bounded rationality is that trade-offs must always be made between competing intellectual, material and social demands when deciding on a line of research" (2007; 136). This type of rationality is rather the realistic, not overestimated, recognition of human choices and cognitive undertakings. It connects the means with the ends as well as recognizes their historically and socially limited nature. "Rationality is not only a matter of judging the adequacy of the means to their purported ends but also the adequacy of the ends as means to still other ends" (Fuller 2007; 133). Instrumental as well as critical theories of rationality (apart the crucial differences between them) tell us that there are no cognitive and practical ends themselves, intrinsic or ultimate, which would be mysterious and unknown to the subjects. The compromised ends of the choices and undertakings may change even often and quite radically. Despite this fact rationality is still achievable as there are some ends to which people are devoted. No matter what the content of these ends is, it suffices to say that humans deliberately choose the means to achieve them. The real and effective compromises are far from certainty and optimal (complete) knowledge. As social epistemology is, as Fuller says, "a kind of a science accounting that weights the costs and benefits of pursuing alternative epistemic trajectories" (2007, 136), it deals finally with uncertain rational choices. It aims at the recognizing and evaluating the ends and the means for achieving compromised rational undertakings no matter the knowledge which precedes and/or succeeds them. In other words, social epistemology seems to be properly prepared for study the rationality-uncertainty issue since is dealing with the dominant cognitive practices as well as accepted socio-cultural epistemic standards.

Concluding aforementioned theoretical issues and empirical examples, one can formulate a few general descriptive remarks:

1. Uncertainty is part of a wide range of practical and cognitive undertakings, more or less routine, self-reflective, intuitive as well as formal and rigid which all together produce the complex human knowledge.

2. Rationality conceived as bounded regarding its rules and results includes uncertainty, especially, the incomplete information.

3. Since uncertainty characterizes almost all of human cognitive experiences its epistemic value is evident.

However, the rationality-uncertainty issue implies also a few normative aspects and dilemmas which could be formulated in the following, practical end even ethical, questions:

4. Is understanding of apparently complex and obscure facts and information (e.g. among the statistical data or ambiguous news) still achievable in a rational (i.e. self-reflective) way?

5. Would people be really responsible for their decisions under uncertainty, or in the risky situations having been not familiar with the proper information?

6. How could they formulate themselves and, subsequently (as principle of rational beliefs admits), communicate others the doubtful and uncertain results of the intuitive reasoning or imperfect cognition?

Literature

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