

The historical contingency of rationality: The social sciences and the Cold War

Paul Erickson, Judy L. Klein, Lorraine Daston, Rebecca Lemov, Thomas Sturm and Michael D. Gordin: How reason almost lost its mind: The strange career of Cold War rationality. Chicago: The University of Chicago Press, 2013, viii+259pp, \$35.00 HB

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During World War II, Niels Bohr realized that the nature of war had changed irrevocably due to the introduction of the atomic bomb. This, in his opinion, meant that nation states had to be open about nuclear knowledge and negotiate toward peace. The bomb presented a threat, yet at the same time, an opportunity, as Bohr would argue in his characteristic way. It is not too difficult to point to the epistemological origin of Bohr's argument: One easily identifies resonances with his ideas on "complementarity" from quantum mechanics. According to Bohr's doctrine of complementarity, a quantum mechanical object shows certain qualities depending on the experimental perspective from which it is studied; and these qualities may be mutually exclusive. However, they should in fact be looked upon as "complementary" properties that together make up the full picture of the object under investigation.

Initially, Bohr could express his ideas to the highest circles of power. This would soon change, however. Winston Churchill, whom Bohr met personally in 1944, distrusted his plea for transparency and control and considered him a security risk, particularly when he found out that Bohr had kept contact with a colleague in the USSR, Peter Kapitza. In fact, Bohr was not only distrusted, but his persona was also disapproved of. Churchill wrote to an aid: "I had not visualized any of this before [Bohr's exchanges with Kapitza], though I did not like the man when you showed him to me, with his hair all over his head, at Downing Street" (quoted in Pais 1991: 502). Indeed, by 1950, Bohr had completely lost access. His message was dismissed, while his person was even disqualified.

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Why did Bohr's analysis carry no weight with the political elite? It did have much authority among physicists, but little beyond that group. Could the mixed reception be due to a mixed familiarity with his habitus of reasoning, his arguments by "complementarity" that had taught him how to decide on a course of action in the arms race? Or was it simply the message itself that was disliked?

Another scholar with a long history in problems related to the quantum, and many other subjects in mathematics and physics, had the reverse career in the corridors of power: John von Neumann. In the year of his death, 1956, von Neumann was awarded the Medal of Freedom by President Dwight D. Eisenhower. Awed by the occasion and terminally ill, von Neumann expressed the hope to "be around long enough to deserve this honor," to which Eisenhower simply replied "We need you" (MacRae 1992: 377). Indeed, von Neumann had been a much sought after consultant for defense problems, and beyond.

Paul Erickson, Judy L. Klein, Lorraine Daston, Rebecca Lemov, Thomas Sturm and Michael D. Gordin have written a most impressive and insightful book that describes the rise of a particular kind of "rationality" during the Cold War years. Bohr, and his way of reasoning, does not play a role in *How Reason Almost Lost its Mind: The Strange Career of Cold War Rationality*; but John von Neumann figures prominently in it. According to Erickson et al., a particular kind of "rationality," a certain understanding of what it meant to be "rational," reigned in US social and human sciences during the Cold War years. The set of ideas that von Neumann is associated with, most prominently game theory, was very much part of the core of what constituted "rationality" during the period, and was greatly sought after and financially supported by political and military elites. We will briefly return to Bohr later.

Von Neumann was not only a research scholar at the Institute for Advanced Study in Princeton but actively advised the US government in defense matters. For instance, he was chairman of the weapons panel of the scientific advisory board of the US Air Force. Von Neumann was the epitome of the American "action intellectual," as *Life* magazine in 1967 called the band of consultants that moved from university campuses to RAND corporation to the military (10), while discussing defense issues and particularly how "rational" humans should behave in the nuclear stalemate. They did so with a highly mathematized, abstracted notion of human exchanges, regardless of whether these consisted of the highly paced decisions needed for a nuclear standoff, or the mundane discussions one finds on any office floor. Most of these men, if not all, were hawks. Von Neumann's committee, for example, recommended in 1954 to develop long range missiles that could carry nuclear loads, thereby accelerating further the arms race.

Cold War "rationality" entailed that a "complete set of rules of behavior" governed all possible situations; these formal rules were independent of person or context. Such an understanding of what it means to be rational is, for example, found in von Neumann and Oskar Morgenstern's standard text on game theory, *Theory of Games and Economic Behaviour*. The study of games, algorithmic logic and behavioral science were to lock in what these rules were. These should then inform decision-making processes, most notably in war room circumstances. "Rational actors," i.e., abstracted and disembodied idealized individuals, were

presumed to follow such rules, possibly aided by Bayesian probability calculus. Such actors always aimed at maximizing personal gain with minimum losses. Early in the Cold War period, it was believed that if you stripped down human reasonings to their barest of bones, these kinds of rule-bound procedures would be revealed.

This type of “rationality” is to be taken as quite distinct from the human “mind,” and would be devoid of any morality: Its rational actors do not make mindful and conscious *judgements*, but rather operate like machines that process code. This explains the title of *How Reason Almost Lost its Mind*: During the Cold War years, “reason” gave way to an abstracted, mechanical notion of “rationality,” which, when successfully mapped out, should be trusted to take momentous decisions, without the intervention of the conscious human “mind.” Erickson et al. show that this understanding of what it means to be rational, and its implications for how ideally decisions should be made or complex processes should be run, rose out of industrial management studies from the 1920s and operations research from WWII to gain the center stage in the social sciences in the post-war years (but more on the origins of Cold War rationality later).

It has remained a central perspective ever since. Not every social scientist will underwrite the Cold War paradigm of rationality today, but its influence is ubiquitous: Experimental psychology, for instance, has honed in on studies of the “irrational,” which is taken to be precisely that which the above form of rationality is not. The important achievement of *How Reason Almost Lost its Mind* is exactly that it shows that this understanding of rationality has a history: Its rise is not due to some intrinsic and universal quality, but rather to historically contingent factors; as such, the book reminds one of the study coauthored by one of its authors (Daston) on the history of objectivity as epistemic norm (Daston and Galison 2007).

“Rationality” peeked during the 1950s, when leading American social scientists were largely in agreement about its pivotal merit and hotly debated its component parts. Its status reveals itself in, e.g., the central role that the “prisoners’ dilemma” played. This game theoretic setup involves two prisoners that need to independently assess whether they should confess their joint crimes, depending on relative payoffs or losses. The prisoners’ dilemma surfaced in as many studies as one can imagine controlled psychology experiments or war room situations. Similarly, optimization problems (how to produce quantity x with production means y and budget z) were invented and studied in scenarios ranging from the Berlin airlift to general industrial contexts. These promoted a notion of compartmentalization of human activity to elements usable in calculation; thus, modern management techniques that govern much of today’s world were further introduced and developed.

A most awkward manifestation of Cold War rationality was the study of “small group” interactions by Harvard’s Robert Freed Bales. Bales put a small number of people, typically three or four, in a room full of recording devices and had the group monitored by an observer that minutely documented all social interactions. The result was an account that divided all “event bits” into twelve categories that were seen as “logically exhaustive of all possibilities”: The twelve categories ranged from “Shows Solidarity,” through “Agrees,” “Gives Opinion” and “Shows Tension” to “Shows Antagonism.” Observers (ideally many were involved) jotted down scores, while the interaction was being recorded. After the analysis of many

interactions, a map was drawn up that revealed a universal “Interaction Process”: The social “atoms” in the end reproduced a uniform structure that caught pretty much all small group interactions. At least, that was what Bales believed: All small groups went through a phase of “orientation,” then “evaluation” and finally reached “control.” Not only Bales was convinced of the value of his work: So were his Air Force sponsors that contracted him to work at RAND on standardizing their information processing procedures.

Bales’ work clearly resonates with the reductionist program of logical positivist philosophy, and the same can be said of that of many “rational” Cold War social scientists. Even more obvious is its referencing of a physicist’s methodology, which, if anything, is reflective of the cultural status of physics, on the coattails of the bomb. Bales’ work was not alone in this: Thomas Kuhn’s famous 1961 article on the role of measurement in science opens by drawing attention to the façade of the Social Sciences Building at the University of Chicago that bears Lord Kelvin’s dictum “If you cannot measure, your knowledge is meager and unsatisfactory”; in particular, Kuhn found the contemporary vocabulary of philosophy of science (or, rather, “epistemology”) filled with terms as “yardstick” and “meter readings” due to “the prestige of modern physical science” (Kuhn 1961: 161). Referencing Kuhn brings out even more resonances, as he positioned his philosophy of science in opposition to an epistemology that sought to find some “universal algorithm for theory choice,” governed by rules instead of value judgments (see, e.g., Kuhn 1977), much like the social scientists studied here felt they could reach for the ultimate algorithm that captured rational social processes.

In their discussion of the Cold War social sciences, Erickson et al. do not go much into such larger cross-disciplinary linkages, even if there seems to be a larger story to be told. They particularly hone in on the implicit assumption of a reductive logical frame that the social sciences displayed in their attempts to adopt the setup of, e.g., game theory for their problems. Yet, this focus is not overly problematic for the book’s treatment of its subject, as “rationality” as a norm in social science was most clearly exhibited through these channels. The book’s focus further helps to bring to the fore the ultimate promise that attempts such as Bales’ entailed: A sure hand and strategic advantages to guide us through the nuclear standoff. Indeed, Bales believed that his analysis of communication, if studied at sufficiently abstract levels, could model very concrete air defense processes and problems: Supposedly, its meta-formulations captured the steps needed for the continuous surveillance of the skies, the identification of adversarial aircraft tracks and how to manage a controlled military response to those.

With military interest also came lavish funding. This, of course, goes a long way toward explaining the mark that “Cold War rationality” could make on western social science (intriguingly, even though Cold War rationality was pretty much absent as prevalent norm in the USSR, game theoretic assumptions in the USA nevertheless entailed that the Soviets would be similarly “rational” and would follow the same logical schemas as the Americans—one can only dread the consequences that such a false assumption could have engendered). With the winding down of the Cold War, however, the consensus on “rationality” as epistemic norm ended. During its reign, researchers had already increasingly

pointed out that other factors than logical deductions and algorithms in fact determined human decision making. For example, notions such as “group think” or “verification biases” had already been introduced. Yet, these factors had been pointed out to exhibit aberrations and to lay bare where corrections were needed. In the 1980s, however, the notion set in that logic and algorithms need not be the only justified benchmarks that ultimately caught the ideal of human reasoning, or prescribed the best decisions.

Whereas the coming apart of “rationality” as uncontested norm gets considerable attention in *How Reason Lost its Mind*, the reasons behind its rise are less extensively addressed. Why exactly did it gain such traction during the Cold War years? The authors make clear that earlier notions of machine-based ratio, such as captured by Charles Babagge’s “difference machine,” were never taken to imply that calculation could ever substitute human reasoning. Yet, there is only a brief attempt to explain why the Cold War years exhibited a consensus that entailed the opposite. The authors, along with the pre-Cold War factors briefly mentioned earlier, point to the growing role of algorithmic rules in mathematical logic and the introduction of the computer and subjective probabilities in economic definitions of utility. Furthermore, they argue, the Cold War years capture the peak of the roll out of government and industrial bureaucracies that sought scientific methods to function efficiently. Still, it is left largely unanswered *why*, e.g., game theory-styled methods were expected to function in such a wide variety of circumstances, including notably war room situations, while their *actual* successful prescriptive uses were extremely limited.

As said, the Cold War nevertheless created enormous opportunity for “rationality”. Perhaps this can be understood when considering the message that some of its most visible proponents pandered. Let us return to the cases of Bohr and von Neumann. Both came to radically different analyses of the arms race.¹ Bohr arrived at his position through his paradoxical complementarian way of arguing, while von Neumann framed his opinions in the rationalist style; yet, it seems much more likely that it was in fact the content of their message that determined its success rather than the delivery, particularly as neither could offer anything close to deductive certainty. Bohr’s opinion went against the grain of the military and political elites while von Neumann’s reinforced their ideas. Again, proponents of Cold War rationality were often hawkish and on the right, which ties in well with its grounding in economic theories of competition. The success of Cold War rationality may thus, perhaps, partly be explained by the desirability of its early conclusions (it later produced dissenting messages as well) and the political color of some of its most visible proponents at RAND, and elsewhere. Still, this can only be a hypothesis, given the lack of substantiation given for it here; its suggestion may, however, illustrate that the circumstances behind the rise of “rationality” to prominence during the Cold War years still deserve further analysis.

In any case, the authors of *How Reason Lost its Mind* have made a particularly insightful contribution by showing how “rationality” has a time and a place; by laying bare its historical contingency, they have taken “rationality” off its

¹ In writing this review I have greatly benefited from Brummer (2013).

methodological pedestal. When such fundamental and taken-for-granted epistemic categories are given their history, we gain a new perspective into how we view the world. In this case, a historical perspective enables us to critically reflect upon the authority of much of the social sciences. Other forms of reaching decisions implicitly gain some rehabilitation, as “mindful” judgments that invoke morality, conviction and belief are less easily dismissed as dangerously irrational or inherently biased. In this sense, this kind of scholarship empowers us as humans when we are confronted with the institutional authority of the social sciences.

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