

***Popper's Realism, the Rationality Principle and Rational Choice Theory:
Discussion of "The Rationality Principle Idealized" by Boaz Miller***
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Miller's paper (2012) sheds a lot of light on one of the most confusing and underdeveloped ideas in Popper's philosophy. Popper called for social science grounded in what he called "situational analysis." This requires building models of social situations, which include individual actors and physical and social barriers (especially social institutions, e.g. markets, legal codes, bureaucracies, etc.) The models attribute certain aims and information to the actors. Such information and aims are not to be understood as psychological facts but rather as "elements of the objective situation" (Popper 1994: 167). Finally, the situational model is "animated" by means of the "rationality principle" (RP). RP stipulates that actors respond "adequately" or "appropriately" to their situation or, put differently, that they "work out" what is already implicit in the situation (1994: 169). By this he appeared to mean that RP requires that individuals act instrumentally in trying to attain the goal posited by the model, such as maximizing profit or power, or, in Popper's example of Richard the pedestrian, simply getting to the other side of the road. (It isn't clear to me whether Popper would permit noninstrumental action, such as acting in accordance with tradition or social norms, to animate situational models, but I don't see why not.) Popper envisioned progress in social science as a growing body of such situational models, presumably gaining depth and explanatory power as they were refined in response to criticism and empirical testing. The aim of such models would be to lay bare how the interaction between individuals and institutions produces unintended consequences. Indeed, this is the key task of social science, Popper said (1996b: 95).

A key problem with Popper's situational analysis, as Miller and others have noted, is that it seems to violate Popper's own falsifiability criterion, for it appears that RP is indeed false: manifestly, individuals do not always respond rationally to their situation, even in the minimal sense of responding "adequately" to it. Popper admits as much with his example of the flustered driver who, angry because the parking lot is full, keeps driving round and round the lot, contrary to his objective situational goal of, say, getting in and out of the store as swiftly as possible. But does not the inclusion of a known-to-be-false assumption into the model falsify the whole model? Popper apparently cannot reply that RP is a *useful* falsehood because it helps us predict what happens in social situations. That would require abandoning not only his signature falsificationism but also realism, which Popper also wanted to retain, and embracing instrumentalism or pragmatism, both of which he opposed.

But Popper says the falsity of RP does not force these conclusions. He starts by noting that all models are in fact false: "Can any model be true? I do not think so. Any model, whether in physics or in the social sciences, must be an over-simplification. It must omit much, and it must over-emphasize much" (1994: 172). But he also says that the aim of science is to produce theories and models that get closer and closer to the truth, rather

than merely better and better at making predictions. So, although all models are false in the sense that they do not fully and accurately describe everything about the phenomenon that they are meant to explain, he insists that some models get closer to the truth than others. Intuitively, it makes sense to claim that, say, Copernicus's model of the solar system is closer to the truth than Ptolemy's, even though the Copernican model is clearly false insofar as, for instance, it assumes that the planet's orbits are circular rather than elliptical. The process of getting closer and closer to the truth requires creation of *testable* models, Popper says, the more testable the better. And – here's the clincher for Popper – incorporation of RP into social models, he says, makes them more testable and hence facilitates the goal of getting closer to truth. This is mainly because excluding RP from situational models would “lead to complete arbitrariness in our model-building” (1994: 178). It's a better methodological policy, Popper seems to say, to assume that something about our description of the objective social situation – something about the pattern of interaction between individuals, about the social rules, etc. – has been misdescribed if our model fails to predict behavior accurately.

Here is where Miller steps in to buttress Popper's defense of RP by providing a much more precise meaning to Popper's claim that all models “over-simplify.” His key move is to suggest that RP itself be viewed as a model of human action. Like all models, RP simplifies the reality it is meant to depict, and it also omits certain aspects of that reality. Drawing upon recent work in the philosophy of science, he suggests that RP be understood as an idealization with two abstractions. This is a more plausible and satisfying account of RP than the view that RP should be understood as a statistical regularity, and it seems to align better with what Popper has to say about models. Miller has indeed demonstrated, at least to my satisfaction, that the falseness of RP is completely compatible with Popper's realism. Or, at a minimum, Miller has shown that the falseness of RP is no more problematic for realism than the known false elements of models from the natural sciences, such as the assumption in the ideal gas model that molecules are perfectly elastic spheres or the point-masses in an astronomer's model of the solar system.

But Miller does more than demonstrate that compatibility of RP with Popper's realism. He also shows how Popper's situational analysis can be improved by systematic de-idealization of RP. Popper said that removing RP from situational models would lead to complete arbitrariness in their construction. He doesn't seem to have considered the possibility of hybrid situational models that incorporate well-tested psychological mechanisms describing how people predictably deviate from “pure rationality.” Such mechanisms exist and have been identified. Irrational action does not necessarily mean arbitrary action. Kahneman and Tversky, for instance, have cataloged the diverse and consistent ways in which people act irrationally or come to hold irrational beliefs about their situation. A whole field of social science, in fact, is made up of hybrid situational models that incorporate these psychological mechanisms. It's called behavioral economics. I tried to make the case for incorporating psychological mechanisms into

situational models in my 2006 book on Popper. Miller makes a stronger argument for doing so than I did, with more analytical precision than I could muster.

Is Situational Analysis Merely Rational Choice Theory?

So I'm convinced that Miller has saved Popperian situational models and RP from instrumentalism, and I also think that he has shown that psychology can be incorporated into models without depriving situational models of their testability or reducing them to what Popper called "psychologism." Still, what I'm wondering is whether Miller has saved a theory of any real novelty, interest or special importance. More specifically, the questions I want to pose are these: Is Popper's situational analysis really just a less technical or somewhat underdeveloped version of rational-choice theory? If so, does Popper's situational analysis offer anything of value to working social scientists – some special insights or methodological direction that would help them create social models that are more testable, have more predicative or explanatory power, or are of greater verisimilitude? I think the answer to the first question is yes, and the answer to the second is no. I wonder if Miller agrees with me and if not, why not. Rational-choice explanations are generally understood to be grounded in the assumptions that (a) individuals act instrumentally to achieve their goals and (b) that their actions are the *best* means for attaining their goals. That is, it assumes that their actions are in some sense *optimal*. (I'll forgo a discussion of exactly what optimality might require.) Popper, however, merely requires that agents act "appropriately" or "adequately" rather than optimally. It isn't at all clear to me what this means. Perhaps "adequately" is something like so-called satisficing – the loose requirement that agents simply choose an option that is deemed "good enough." In any event the reason, of course, that social scientists build in the assumption of optimality into their models is that it allows for precise deductive predictions about how individuals will behave in certain contexts. These predictions can be quantified with mathematical models, which are naturally especially useful when trying to explain highly complex interactions between multiple actors. Many admirers of Popper, however, seem to think that situational analysis and RP would produce explanations that would necessarily differ in important ways from the typical kinds of rational choice explanations found in economics and political science. It's not clear to me why they think this. Consider what Popper says in "Models, Instruments and Truth." He starts by noting that situational analysis was his attempt to "generalize the method of theoretical economics" (1994: 154). Later in the essay he says that his situational model of Richard the pedestrian

contains almost all the relevant elements of situational analysis as used in economics,... To take a familiar example, the most important part of classical economic theory is the theory of perfect competition. It may be developed as the situational logic of an idealized or over-simplified social situation – the situation of people acting within the institutional framework of a perfectly free market in which buyers and sellers are equally informed of the physical qualities of the goods that are bought and sold (1994: 170).

That certainly sounds like an endorsement of modern rational choice theory to me, especially given the stipulation that individuals are "equally informed" about the goods that they buy and sell. It's hard to see on what ground Popper would be opposed to the other idealizations typically built into economic models, such as the stipulation that individuals be able to rank-order their preferences, that these preferences are transitive, that individuals have perfect information, etc. This is not to say that Popper necessarily would have approved of everything in contemporary social science that flies under the banner of rational choice theory. I have in mind the obnoxious trend in economics, and political science as well, of producing esoteric formal models that are completely untethered to any real-world problems and which don't even seem to have the goal of explaining or predicting actual individuals' behavior, something that no doubt would have horrified Popper. (Jon Elster has recently commented that the motivation behind the creation of such models seems to be "aesthetic" [461].)

I also don't mean to say that the more technical, idealized rational choice models found in economics and, to a lesser degree, political science represent the only kind of situational models that Popper had in mind. Popper also saw situational analysis as underpinning the more impressionistic, informal models of human interaction that social inquiry has occasionally produced since the ancient Greeks. These models do not stipulate that actors act optimally or with perfect information. They merely require that individuals pursue some typified aim and, as result of the interaction of individuals and institutional constraints, produce some interesting unintended consequences. Popper's first discussion of situational analysis comes in *The Open Society* and concerns what Popper calls Plato's "logic of power," found in chapters XIII and IV of the *Republic*. Tyrants seeking to secure their own power are forced by the logic of their situation to kill off all their potential rivals, including all persons of wealth, intelligence and reputation. Paradoxically and unintentionally, this undermines their power and ultimately paves the way toward democracy. Other examples of such models would include Smith's invisible hand, Marx's theory of trade cycles (which Popper discusses in *The Open Society* [1996b: 179-181]), Hobbes on the logic of the state of nature (individuals pursuing their own safety paradoxically and unintentionally leads to a state of war), and the so-called tragedy of the commons. No math or technical language is required to explain the operation of these situational models. All that is required is a thought experiment in which one imaginatively traces the interaction of individuals in certain institutional settings. Popper called for social scientists to seek to uncover more of these interesting social mechanisms and hoped that overtime they might become more refined.

Popper thought that situational analysis would revolutionize social science and put it, for the first time, on a proper scientific footing (Hacohen: 492). In fact, he claimed that situational analysis should be "the" method of the social sciences – or the "golden foundation," as Miller says (1994: 173). It would be the method not only for economics, but also sociology, anthropology, "power politics," and social and political history (1994: 170). Further, he seemed to have imagined that situational analysis would be the

approach to social inquiry that "piecemeal social engineers" would employ to tackle vexing social problems (unemployment, poverty, violence, etc.) (1966a: 163). Social science would become for the first time not only genuinely scientific but also a genuinely useful tool for social improvement. In some ways I think that Popper's wish has been partly fulfilled. As everyone knows, the methods of economics have indeed spread to other disciplines in the social sciences. Unfortunately, this hasn't produced the salutary effects that he hoped it would. It cannot be said that the adoption of situational analysis has led to any notable progress in social science or to some kind of quantum improvement in public policy.

In the end, I think, Popper's important contribution to social science was not positive; it was negative. Most of his energy in *The Poverty of Historicism* and *The Open Society* was focused on criticizing what he called "historicism," the view that the aim of social science is to engage in historical prophesy, which requires discovering laws of historical development. Popper convincingly argued that such transhistorical laws cannot exist and that historical forecasting is a fool's errand. He dealt a deathblow to this type of scholarship. But when it came to presenting his own prescription for social science, Popper offered mostly unsystematic and scattered observations on the topic. His positive contributions to the methodology of social science were mostly an addendum.

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Gorton, William. [2012]. 'Popper's Realism, the Rationality Principle and Rational Choice Theory: Discussion of "The Rationality Principle Idealized" by Boaz Miller' The Social Epistemology Review and Reply Collective
social-epistemology.com

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