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LOCATION: **VVC :: Case Library :: PAO Collection 4**

TYPE: Article CC:CCL

JOURNAL TITLE: Synthese

USER JOURNAL TITLE: Synthese (Dordrecht)

VVC CATALOG TITLE: Synthese (Dordrecht)

ARTICLE TITLE: Cohen, L Jonathan "A Reply to Stein's 'Rationality

ARTICLE AUTHOR: 0

VOLUME: 99

ISSUE: 2

MONTH:

YEAR: 1994-05-01

PAGES: 173-eoa

ISSN: 0039-7857

OCLC #: 0

CROSS REFERENCE ID: 56771092

VERIFIED:

BORROWER: **YHM :: Main Library**

PATRON: **Marcus, Russell STATUS: f***

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PATRON STATUS: F

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System Date/Time: 8/26/2009 11:01:53 AM MST

- Quine, W. V. O.: 1969, 'Natural Kinds', in *Ontological Relativity and Other Essays*, Columbia University Press, New York, pp. 114–38.
- Quine, W. V. O., and J. S. Ullian: 1970, *The Web of Belief*, Random House, New York.
- Rawls, J.: 1971, *A Theory of Justice*, Harvard University Press, Cambridge.
- Rawls, J.: 1974/1975, 'The Independence of Moral Theory', *Proceedings and Addresses of the American Philosophical Association* 48, 5–22.
- Sober, E.: 1978, 'Psychologism', *Journal of Social Behavior* 8, 165–91.
- Sober, E.: 1981, 'Evolution of Rationality', *Synthese* 46, 95–120.
- Stein, E.: 1991, *Rationality and the Limits of Cognitive Science*, Ph.D. dissertation, Department of Linguistics and Philosophy, Massachusetts Institute of Technology, Cambridge.
- Sternberg, S.: 1966, 'High-speed Scanning in Human Memory', *Science* 153, 652–54.
- Stich, S.: 1990, *Fragmentation of Reason*, MIT Press, Cambridge.
- Stich, S., and R. Nisbett: 1980, 'Justification and the Psychology of Human Reasoning', *Philosophy of Science* 47, 188–202.
- Tversky, A., and D. Kahneman: 1983, 'Extensional Versus Intuitive Reasoning: The Conjunction Fallacy in Probability Judgement', *Psychological Review* 90, 293–315.
- Wason, P. C.: 1966, 'Reasoning', in B. Foss (ed.), *New Horizons in Psychology*, Penguin, Middlesex, pp. 135–51.
- Wason, P. C.: 1968, 'Reasoning about a Rule', *Quarterly Journal of Experimental Psychology* 20, 275–81.
- Wason, P. C., and P. N. Johnson-Laird: 1972, *Psychology of Reasoning: Structure and Content*, Harvard University Press, Cambridge.
- Wexler, K., and P. Culicover: 1980, *Formal Principles of Language Acquisition*, MIT Press, Cambridge.
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A REPLY TO STEIN

While saying much else of interest, Stein (1994) makes two main criticisms of my argument about rationality. The first criticism claims that I could have made my argument stronger. The second criticism is that, even when strengthened in this respect, the argument will still not hold up.

More specifically, the first criticism is that by regarding naive intuitions, rather than considered ones, as the ultimate premisses for reflective equilibrium, I unnecessarily cut my argument off from a possible defence against the central objection to it. This objection is that experimental psychologists have demonstrated the existence of many invalid *naive* intuitions, such as the Gambler's Fallacy. If instead, Stein argues, I accept that the premisses for reflective equilibrium are *considered* intuitions, my argument is not hit by the psychological evidence, because the subjects of the relevant psychological experiments can normally be expected to acknowledge their naive errors when they have given properly guided consideration to the issues.

My answer to this is that considered intuitions – or considered judgements, as I prefer to call them – are not the ultimate premisses for reflective equilibrium. Instead, every reflective equilibrium in a given field of normative enquiry must rely ultimately on naive judgements – intuitions, as I call them – for its own guidance or justification (Cohen, 1986, p. 76), although the way in which this works out may well involve some “considered judgements” as intermediaries. Roughly, the considered judgements support the reflective equilibrium but rest themselves on naive judgements. A good illustration of this in linguistics is afforded by Stein's own example:

The girl whom the cat which the dog which the farmer owned chased scratched fled.

The considered judgement that this sentence is grammatical is supported, as Stein's own argument shows, by the intuition that the sentence

The girl fled

is grammatical, and by the intuition that the correct answer to the question 'Which girl fled?' is the sentence

The girl whom the cat scratched fled,

and so forth.

Moreover, it is by no means always clear what the relevant intuitions really are. Indeed, my argument requires that the experimental data reported in much of the heuristics and biases literature of the period 1965–1980 be interpreted in different ways from those in which the authors of that literature (Tversky, Kahneman, etc.) interpreted them (Cohen, 1981, 1982, 1986). For example, the so-called Gambler's Fallacy, to which Stein refers several times, is certainly a fallacy if a coin-tosser, say, assumes that each toss is a game of pure chance and nevertheless believes that, after a long run of tails, heads are more probable than not. But suppose that the coin-tosser, bearing in mind what he has heard about the very occasional existence, in the real world, of rigged wheels, stacked decks, loaded dice, flawed mints, etc., makes a more cautious assumption. Suppose that he or she assumes instead that it is much more probable than not that every toss's outcome is a matter of pure chance. And suppose that he or she makes two other equally plausible assumptions, viz., first, that, if it is much more probable than not that every toss's outcome is a matter of pure chance, then, in the case of each toss's outcome, that outcome will probably not increase the present low probability that not every toss's outcome is a matter of pure chance (which is as if to say that, if there is strong evidential support for p , then there is some evidential support for believing of each as yet unknown piece of evidence that it will support p); and, secondly, that, if the next outcome, after the present long run of heads, is heads yet again, that outcome will increase the present low probability that not every toss's outcome is a matter of pure chance (which is as if to say that only a born sucker – or a dupe of the sorites paradox – never suspects a loaded coin). It can then be demonstrated quite rigorously from those assumptions (Cohen, 1982, pp. 260–62) that it is more probable than not that the next outcome, after the present long run of heads, will not be heads yet again. And my claim is that failure to see the possibility of this demonstration, or the plausibility of the premisses on which it is based, has led many writers on

the subject to impute a fallacy where none exists. They have confused a causally rooted probability function (in terms of which it is contingently much more probable than not that every toss's outcome is a matter of pure chance) with a conceptually rooted probability function (in terms of which the probability of each outcome is necessarily 0.5). They themselves are implicitly using the latter function, while those whom they accuse of fallacy are implicitly using the former. The real fallacy lies in the performance error of confusing the two functions. It may well be that some subjects in psychological experiments do sometimes commit this error, as certainly do some psychologists and philosophers. But my account of how norms of reasoning are established allows for the possibility that, in defence of a particular norm philosophers and logicians may sometimes need to disregard deliberately certain kinds of contrary intuitions (*ibid.*, 1986, pp. 97–107).

Stein's second main criticism is that the reflective equilibrium account of cognitive competence is mistaken because it does not attend to the variety of other considerations, besides behaviour and intuitions, that are relevant to cognitive competence. In particular, it pays no attention to neurophysiological and computational data. So, according to Stein, there could be features of our cognitive competence that have no analogues in our systems of norms for deductive or probabilistic reasoning, and we are therefore not entitled to take the correctness of our cognitive competence to be underwritten by its correspondence with the relevant normative system.

However, it is not clear how neurophysiological or computational data could properly affect theories about our cognitive competence. Obviously, we can obtain data about such issues as the times it takes different people to make certain calculations, or about the complexity of the inferences that they can make, in specified circumstances. But that would support an account of performance, not competence. Obviously, too, we can propose neurophysiological or computational models that will explain how the exercise of certain cognitive capacities is possible. But all this assumes that the investigator already knows, from the study of relevant intuitions or behaviour, what features of cognitive competence require explanation. If the neurophysiological or computational models predicted features of cognitive competence that were not reflected in actual intuitions or behaviour, we would normally reject the models rather than suppose that our intuitions or behaviour are somehow inherently erroneous or incomplete for the characterisation

of our cognitive competence. So, if cognitive intuitions provide all the justification that is ultimately available for theories about the norms of valid reasoning, we should not expect there to be any room for serious divergence between those theories, on the one side, and theories about the actual content of our cognitive competence, on the other.

REFERENCES

- Cohen, L. J.: 1981, 'Can Human Irrationality be Experimentally Demonstrated?', *Behavioral and Brain Sciences* 4, 317-70.
 Cohen, L. J.: 1982, 'Are People Programmed to Commit Fallacies?', *Journal for the Theory of Social Behaviour* 12, 251-274.
 Cohen, L. J.: 1986, *The Dialogue of Reason*, Oxford University Press, Oxford.
 Stein, E.: 1994, 'Rationality and Reflective Equilibrium', *Synthese* 99(2), this issue, 137-172.

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CORDONING COMPETENCE: A REPLY TO COHEN

In my article on the reflective equilibrium argument for the view that humans are rational (Stein, 1994), I argue that it is possible for our underlying reasoning ability (what I call our *cognitive competence*) to diverge from the principles that characterize the normative standards of reasoning. Jonathan Cohen, in his reply to my article (Cohen, 1994), argues that this is conceptually impossible; our cognitive competence cannot diverge from the norms. He thereby defends the thesis that humans are rational.

Cohen and I both defend the reflective equilibrium account of the normative standards of reasoning (although we differ as to what the inputs to the reflective equilibrium process are and to the "width" of the process), but I argue that the right account of human cognitive competence appeals to empirical facts about our actual cognitive capacities, for example, psychological experiments concerning reasoning and neurophysiological facts about our brains. Cohen says that if, for example, a neurophysiological account suggests that our cognitive competence is characterized by principles that diverge from the norms, then this is reason to reject this account. Against Cohen, I think that such empirical evidence can give us good reason to think that our cognitive competence does not match the norms.

Here is the sort of case I have in mind. Suppose we have the intuition that before a person commits herself to some belief *p*, she should check to make sure that *p* is logically compatible with all her other beliefs (call this the *Consistency preservation rule*). Suppose, as seems plausible, that the consistency preservation rule is judged to be a norm of reasoning through the process of reflective equilibrium. The question is whether we actually have this rule of reasoning in our cognitive competence. One set of reasons for thinking that we do *not* is that, given the size of our brains, the number of neurons in them, and the amount of time it takes us to acquire new beliefs, it is impossible for us to check to make sure that *p* is logically compatible with all of our beliefs. Cohen's reply suggests, however, that he would see our failure

to do this as a *performance* error, not a flaw in our underlying competence. To support this view, Cohen might reasonably point to an example from linguistics. There are grammatical sentences too long for us to parse that we consistently judge to be ungrammatical. Despite this, linguists still say that the ability to parse such sentences is part of our linguistic competence; limitations on performance (e.g., lack of sufficient memory space) prevent us from exhibiting this underlying ability. The analogous point is that we have the consistency preservation rule in our cognitive competence but we do not exhibit it because of limitations on performance (e.g., time and/or memory limitations). I agree this is *possible*. Where Cohen and I disagree is that I think it is possible that our failure to behave in accordance with this rule might be due to the fact that the rule is not in our cognitive competence. It seems to me a possibility that we can recognize consistency preservation as a norm of reasoning even if this rule is not part of our underlying ability to reason.

Some think there is a tension here: How can I recognize that a rule is a norm without having it in my cognitive competence? I agree with Cohen that the norms of reasoning are the result of a process of reflective equilibrium with our intuitions about what counts as good reasoning as input. A rule can be the result of such a process, however, but not be a rule that characterizes my underlying ability to reason. The considerations that are brought to bear as part of the reflective equilibrium process may move us away from some of our original intuitions and the cognitive competence on which these original intuitions are based.

An example from another realm may help make this clear. Suppose it is a rule of human linguistic competence that you can never move a 'wh'-word across both a noun-phrase boundary and a sentence boundary at the same time. If this is true, all human languages have this rule. Still, there are possible nonhuman languages (e.g., Martian) in which you *can* move a 'wh'-word across both a noun-phrase boundary and a sentence boundary at the same time. It is perfectly consistent with my having a linguistic competence that lacks this Martian rule that I could consider this rule, understand it, and even eventually learn to follow it and, thereby, to speak Martian (although I would not be able to learn Martian as fast as children can learn human languages). The general point is that, with respect to language, it seems I can consider, understand, and learn rules of language not in my linguistic com-

petence. The same seems true of cognitive competence: I can consider, understand, and possibly even learn rules of reasoning not in my cognitive competence. Take consistency preservation as an example. When I consider a candidate belief, I do not in fact check for compatibility with all my other beliefs. It is possible that I fail to do this because I lack the rule of consistency preservation in my cognitive competence. This is consistent with my understanding what consistency preservation is and being able to say it is right to preserve consistency.

Cohen's argument that humans are rational requires him to see competence as quite abstract. If we abstract enough from our actual underlying abilities to reason, then we may eventually get to the normative principles of reasoning. What we want from an account of our cognitive competence, however, is a description of our actual underlying ability to reason. Neurophysiological, computational, and evolutionary evidence are relevant to developing such an account. The process of figuring out what the right rules of reasoning are does not involve such evidence, but the process of figuring out what rules characterize our cognitive competence does. This is why the two sets of rules may differ and why it is empirically possible that humans are not rational.

REFERENCES

- Cohen, L. J.: 1994, 'A Reply to Stein', *Synthese* 99(2), this issue, 173-176.
 Stein, E.: 1994, 'Rationality and Reflective Equilibrium', *Synthese* 99(2), this issue, 137-172.

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