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WOLFGANG SPOHN

# A BRIEF REMARK ON THE PROBLEM OF INTERPRETING PROBABILITY OBJECTIVELY*

Kamlah's paper is mainly historical, but motivated by a systematic interest. He feels that current attempts to understand probability have reached an impasse. He suggests that a good way out of this situation is to consider how we got into it, i.e., to look at our forefathers' views and to unravel their trains of thought; and that's just what he does.

Now, any remarks on my part about the historical details would be but amateurish. So, it would be idle for me to discuss the prospects of Kamlah's way out; judgements about this sort of thing are bound to be very subjective. But this much *is* certain; Kamlah's way out is one among several reasonable strategies, and for that reason I liked his paper very much. Moreover, to a large extent, I share his feelings about the present situation; indeed, so many approaches to interpreting probability have been examined without agreement having been reached; a certain feeling of helplessness seems to have spread and philosophical interest seems to have drifted in the absence of new approaches or syntheses. What I want to do in this little note, then, is not to offer any positive idea, but to offer some general remarks on the problem of understanding probability; broadening the perspective often deepens understanding, and hopefully it will in this case, too.

Let me start with Kamlah's list of probability interpretations (p. 308). Focusing on the ways of determining probabilities the different interpretations provide, Kamlah identifies three interpretations: ***the logical interpretation*** (according to which probability statements are analytic and, perhaps, relativized to some conventionally chosen parameters), ***the personalistic interpretation*** (according to which the probabilities of some person at some time are determined by appropriately examining the epistemic state of that person), and ***the physical interpretation*** (according to which probabilities manifest themselves in relative frequencies in (long) series of chance events).

My impression, however, is that the logical interpretation is out of the running as an independently interesting candidate because it has been subsumed under the personalistic interpretation: The investigation into which rationality constraints should or may be im-

posed on personal probabilities is, and has been taken to be, very important, but the current common opinion, which I share, is that it is just *this* kind of investigation which was promoted under the heading of "logical interpretation". Hence, logical probability reduces to rational personal probability and thus is not some different kind of probability. The later Carnap would not, I believe, disagree.

So we have to come to grips only with the personalistic (or epistemic) and the physical (or realistic) interpretation, with subjective degrees of belief and objective chance. Now, concerning subjective degrees of beliefs, there are various fairly deep problems, which I won't list, but, as far as I can see, there is no good reason at all for thinking that probabilities so interpreted are fundamentally unclear. It is rather objective chance which bothers most of us, me included; it is here that the deplorable conditions of the present situation apply. And it is here that broadening the perspective will, I believe, be most helpful. My suggestion, in no way original, is simple; it is that objectivity and objectivization pose a general problem and that understanding objective chance should be viewed as a special case of this general problem. The philosophy of probability has been entangled largely in its special conceptual field and in its special problems (e.g., "What is the relation between probability and relative frequency?"), but the assessment of the ideas and answers developed within it has been erratic partly because answers to the general problem of objectivization (and its ramifications) have scarcely ever been used as a standard by which to measure such an assessment. Let me expand a bit on this point.

Our unreflective first-person perspective surely is a naively realistic one. We say "This is large", "This is beautiful", and "It is likely to rain" instead of "I find this large", "This looks beautiful to me", and "It seems likely to me that it is going to rain". In short, naively we purport to describe the world objectively as it is and forget about the perspective from which we view it; and within that naive first-person perspective it is difficult to sort out whether and the extent to which our beliefs and judgements depend on the outside world or, respectively, on our personal involvement.

The third-person perspective is more fruitful.[1] From that perspective the picture changes radically; now, not only the believings and saying of persons, but also the content of their beliefs and utterances can, from the first, only be taken as subject-relative. The reason for

this is simple and unassailable. In speaking, persons express primarily either how they are excited from inside or how they are impressed from outside, i.e., they express primarily their inner states. This is not to say that this is their primary interest in speaking; it means only that their inner states are the immediate causal predecessors of their speech and that whatever that speech may mean is mediated by these inner states. As it is with the content of their speech, so it is with the content of their beliefs. The beliefs of persons about the world primarily store and process how they are impressed from outside, and this can, from the first, only be taken as depending also on their make-ups and their positions in the world. (Animals, e.g., have only indexical beliefs, to the extent they have beliefs at all; objective frames of reference seem to be a human specialty.)

Thus, the third-person perspective presumes subject-relativity from the start and throughout.[2] However, this is not a perspective we normally like to apply to ourselves.[3] So a third-person perspective suited for self-application must allow for at least some objectivity. Here then is the real problem: to what extent can our way of representing the would (epistemically or linguistically) be seen to be objective?[4] Or to make this question more personal: in which sense, to what extent, and because of which special circumstances, are we able to objectify our way of representing the world? Of course, this question needs a lot of differentiation and cutting up. But it would be surprising, if the answers to its various parts had nothing in common.

The question persists in much of today's philosophy. To mention some of its aspects: Starting from the fact that our representation of the world is broadly propositional or sentential and thus is basically of the subject-predicate form, three aspects immediately emerge. Concerning logical subjects, there is the distinction between objective things and the much discussed ways things are presented to us, be they indexical or otherwise. Concerning predicates, a great variety of properties must be distinguished. There are ethical and aesthetical candidates whose objectivization is particularly problematic, if not impossible. There is the old distinction between objective primary and perceiver-relative secondary qualities.[5] There is also Putnam's suggestion in (1975), that some form of indexicality may pertain to certain properties as well. And so on. Finally concerning the composition of both, i.e., propositions, there is the unfortunate multiple role propositions have been supposed to play, namely as bearers of truth-

values, as meanings of sentences, and as objects of our propositional attitudes. There is considerable agreement now that these roles are irreconcilable and that at least two things have to be distinguished, the contents of our propositional attitudes and their objectified counterparts usually called states of affairs.

A particularly intriguing aspect of the general problem comes to the fore, when we turn from the contents of our beliefs, their constituents, and the objectivizations thereof to the forms of our beliefs. This brings us back to probability. Of all the existing approaches to objective probability, one particularly fits in with my suggestion because it treats objective probability as an objectivization of subjective probability. Its basic idea is that objective probability is subjective probability conditionalized by sufficiently many relevant and admissible facts (where "sufficiently" means that all conditionalization on further relevant and admissible facts does not change the probability (or does so only negligibly), and where "relevant" and "admissible" are still to be explained). The idea goes back to de Finetti and his famous representation theorem (though de Finetti had other motives); it was, to my knowledge, first formulated by Jeffrey (1965), Chapter 12, and much elaborated by Lewis (1980). Skyrms explicates this idea by means of the concept of resiliency (see his (1980), part IA); and in his (1984), Chapter 3, he extends this interpretation of de Finetti's representation theorem to Birkhoff's much more general ergodic theorem. Salmon's attempt to define objective homogeneity of reference classes (see his (1984), Chapter 3) can also be construed in the same light. It is not my intention to discuss this idea and its elaborations here; I only wanted to mention it because I find it fascinating, because it agrees well with my general suggestion, and because I don't see it discussed as much as it deserves.

Of utmost importance in the present context is the fact that probability is not our only form of belief and thus not the only application of the general objectivization problem to our forms of belief. There is also a qualitative account of our beliefs which talks of a proposition not as being believed to some degree, but simply as being believed or disbelieved or neither. This account is very natural and has been thoroughly studied in connection with conditional logic.[6] Indeed, the problem of objectivization arises dramatically in the case of subjunctive conditionals; there are some such sentences which we would not hesitate to call objectively true or false, and there are other such

sentences which we can construe only as expressing subjective belief and not objective fact. Moreover, the idea that the related notions of causation and of natural law can only be understood as objectivizations of our forms of belief is a very old one. So we have here a deep and very close parallel to all the interpretational problems we have with probability.[7]

To the foregoing one may object that the objectivization of the contents of beliefs is quite a different matter than that of the forms of beliefs; I am not sure about that, and that's why I developed the last analogy. One may also object that the foregoing is of no immediate practical help in interpreting probability objectively because our present understanding of the general objectivization problem and its aspects is not enough advanced to provide a reliable standard by which to measure the ideas and answers developed in the philosophy of probability. But this does not diminish my point, namely that because it is easy to see the problem of interpreting probability objectively as a special case of the general objectivization problem we seem to have little choice but to develop and use this standard in order to better assess our understanding of objective probability.

## NOTES

* This note arose from a commentary on the foregoing paper by Andreas Kamlah, but now bears only indirectly on it. I am very much indebted to Joe Lambert who corrected my style and in fact improved this note considerably.

[1] This is one of Quine's great lessons. For he is the one who has most determinedly philosophized from the third-person perspective.

[2] This is not news. However, in analytic philosophy, which has been adverse to all forms of idealism and against unsober psychologizing, particularly in philosophy, and for good reasons, of course, the force of this observation seems only recently to have had much effects.

[3] Stating the foregoing paragraph wholly from within the first-person perspective would be a purely idealistic move. The idealist then says, very crudely: "The world is some kind of projection of what I have in mind." And asked how he knows what he has in mind, he says: "I know well enough; I am a self-conscious person, after all." However refined, this sounds unacceptable. No such idealism at all is implied in the genuine third-person perspective; having this perspective on other persons, we can be as realistic as we like. But we have then a reciprocal problem. Asked, how we know what they have in mind, we have to say: "It's hard to tell", and we cannot but start with projecting the world into their minds! How exactly we do this and what this implies is, I think, the core of the vigorous de-re/de-dicto discussion.

[4] For the naively realistic first-person perspective the corresponding question is: to

which extent is my picture of the world only subjective? But the third-person mode of this question is more transparent because there the outside world and the epistemic subject under investigation are clearly distinguished from the outset. That is, I think, why the third-person perspective is preferable.

[5] McGinn (1985) is a very readable book precisely in the spirit of my suggestion; he discusses there secondary qualities and indexical modes of presentation in a parallel way in order to see what is common to both topics and thus raises the general problem of objectivity.

[6] See my (1987).

[7] In (1983), in particular pp. 382ff., I have given more attention to this parallel; and the way I explicate causation there (in Section 4) is akin to the basic idea above of objectifying probability. Concerning an objectified or realistic interpretation of counterfactual conditionals, see also how Stalnaker (1984) reaches it via what he calls the projection strategy.

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Institut für Philosophie
Universität Regensburg
8400 Regensburg
F.R.G.