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REVIEW

Henry E. Kyburg, Jr., *Epistemology and Inference*, 1983, Minnesota Univ. Press, Minneapolis. 315 + xi pp.

Epistemology and Inference is a collection of essays written by the author over a period of nearly twenty years. They cover various items of probability theory and epistemology. Some are more general, some more technical in nature. Nearly all the essays were published either in journals, or in edited volumes. We shall give an overview of the topics covered and discuss more thoroughly one of the central themes of the author's ideas.

Part I. General. In "Prophecies and Pretentions" (1977) the author discusses the results of "the Limits to Growth" of the Club of Rome Project and compares their approach with the models of H. Kahn and a group of Sussex researchers. In "Two World Views" (1970) different kinds of approaching the world – through actions or through contemplation – lead to different views on science and probability, the first to a decision-theoretic view on science and a subjectivistic probability theory, the latter to scientific rationalism and a logical or epistemological probability theory. In "Tyche and Athene" (1979) Kyburg shows how essential the study of the foundations of probability is for various topics in philosophy : as a guide to action, in its application to statistical inference, for the acceptance of statements in a rational corpus, and so on.

Part II. Critical Probability Papers. In the first paper of this chapter, "Probability and Decision" (1966), it is shown that even in relatively simple decision situations the interpretation one gives to probability (empirical, logical, or subjectivistic) leads to several contrary solutions of the problem. The two following essays, "Bets and Beliefs" (1968), and "Subjective Probability : Criticism, Reflections, and Problems" (1978), offer critical considerations relevant to both subjective and logical interpretations of probability; the latter is an attack on the subjective view. The two following articles, handling with chance and the fiducial probability notion of R. A. Fisher, are written in view of Kyburg's own interpretation of probability.

Part III, farout the most interesting part, is an attempt at an outline of the author's epistemological view on probability. Articles are "The Nature of Epistemological Probability" (1983), "Probability and Randomness" (1963), "Probability and Informative Inference" (1971), "Epistemological Probability" (1971).

Part IV contains questions of philosophical and epistemological interest, given the epistemological outlook. The last paper of the section gives arguments in favor of global rather than local induction. "Epistemology and Induction" (1983), "Conjunctivitis" (1970), "Probability, Rationality, and a Rule of Detachment" (1965), "Local and Global Induction" (1967).

In the final Part V Kyburg states, what he calls, a number of philosophical jokes.

In toto we may say that Kyburg's "Epistemology and Inference" is a usefull and interesting book. It provides the reader, whether a specialist or a student of probability theory, with a well-considered selection of Kyburg's

papers on a diversity of items, general introductory readings as well as technical discussions on more particular problems. As Isaac Levi states : "This collection will go a long way towards giving Kyburg's ideas the broader currency they deserve. It will help establish for the philosophical public at large what a few specialists realize – namely, that Kyburg is a philosopher of first-rate originality who has a deep familiarity with the material he chooses to explore". It is of course not possible in this brief review to give a critical discussion of all material covered, but we would like to make some minor comments on "Conjunctivitis".

In this paper Kyburg gives an argument against the principle of (strong) deductive closure, and more precisely against the conjunctive part of it, the *Conjunction Principle* (if S is a body of reasonably accepted statements and s_1 and s_2 belongs to S, then the conjunction of s_1 and s_2 belongs to S) that leads to "conjunctivitis". Instead of the strong deductive closure principle Kyburg chooses for (i) the *Weak Deduction Principle* together with (ii) the *Weak Consistency Principle* (p. 233). Let us have a look at his argument, the so called lottery paradox. Consider a fair lottery with a million tickets. Hypothesis O : "Exactly one ticket wins". Hypothesis 1 : "Ticket number 1 will not win". It is obviously a fairly acceptable hypothesis (there is only one chance in a million that it fails), so let's accept it and put it in our corpus of knowledge. By the same reasoning we also should accept Hyp. 2 : "Ticket 2 will not win the lottery", and so on. By the *Conjunction Principle* we are then bound to accept Hyp 1 & Hyp 2, and of course Hyp 1 & Hyp 2 & Hyp 3, and so on. Conclusion "No ticket will win the prize". But this is blatantly false; exactly one ticket will win by Hypothesis 0. Kyburg concludes : the *Conjunction Principle* leads to contradictions and should therefore be abandoned. A lot of authors accept the principle of conjunction, and following his good habitude, Kyburg compares his view in the remaining part of the article with that of Hempel, Hintikka, Lehrer and Levi. We will not enter this discussion.

Let's look more closely at Kyburg's argument. First of all, the principle of conjunction is, intuitively spoken, very appealing. If p is accepted, and q is accepted why shouldn't we accept p & q. On the other hand Kyburg's argument seems logically quite correct. Secondly, iff we reformulate the argument as Hyp 1' : "When I buy ticket 1, I probably loose my money", so I don't buy it"; analogously for Hyp 2', and so on. The conclusion becomes : "don't buy any ticket" (you loose your money anyway). There are no good reasons, except if you would like loosing your money, to enter the lottery-one-chance-in-a-million. In this reformulation nothing seems wrong with the conjunction principle. Or does Kyburg like loosing his money ? Thirdly, even if your acceptance rate is as high as .999,999 never forget something can go wrong sooner or later. The day after the number of the winning ticket was published there is another contradiction to be found in your corpus of knowledge which has nothing to do with the conjunction principle, viz. Hyp i : "ticket i will not win the lottery" and "Ticket i won the lottery". Hence, there is nothing wrong with the conjunction principle, but with the acceptance of Hyp i. So I would say : accept all the hypotheses $0 < i \leqslant 1{,}000{,}000$ and their conjunction (corollary : don't play on lotteries), or accept none of them so that you are absolutely sure no contradiction will ever appear (and loose your money).

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