

WALD, A. (1937). Die Widerspruchsfreiheit des Kollektivbegriffes der Wahrscheinlichkeitsrechnung. *Ergebnisse eines mathematischen Kolloquiums* 8 38–72.

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DISCUSSION

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I wish to thank Professor Dawid for providing such a thought-provoking paper to discuss. He has raised an interesting question in his paper, namely, “Do objective probabilities for events exist, relative to a given information base?” Professor Dawid suggests that the answer is yes, while this discussant believes that the answer is no.

1. Existence. Professor Dawid’s main Theorems 7.1 and 9.1 prove the asymptotic closeness of computably calibrated computable forecasts. Their existence for any given forecasting problem is an open question. The purpose of this section is to cast doubt on their existence.

Whether or not there exists a single sequence of computably calibrated computable forecasts depends on exactly which sequence a actually occurs. Schervish (1985) has shown that there are uncountably many sequences a such that not a single computably calibrated computable forecasting system exists. That is, there are as many noncalibrable sequences as there are calibrable ones. The claim, which Professor Dawid makes, that the noncalibrable sequences are sparse in an intuitive sense, is an understandable outgrowth of the fact that, as statisticians, we view the world through the rose-colored glasses of computable forecasting systems. Hence, we see only calibrable sequences (with probability 1). But Nature is not (to my knowledge) hampered by the same computability restrictions as statisticians are. It follows, then, from the cardinality argument above that the most positive answer we can give to the question of the existence of objective probabilities is “Maybe they exist, maybe not.” In Section 2 we will show that even such a weak positive answer is unwarranted.

Even if the sequence a is noncalibrable, there is no cause for alarm in the forecasting community. It may very well be the case that, for many forecasters, the majority of forecasts in any finite initial segment are still quite good. That is, most forecasts may still be close to the indicators of the forecast events.

2. Probabilities of events. Suppose that the sequence a which will occur will be calibrable. (Please, do not ask how we might know this.) What then are