Propensity Probability and Its Application of Knowledge in *Ifa*

By

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Extended Abstract

This work is to grow an appreciation for Karl Popper's idea of propensity probability. Two major tasks are to be accomplished here. First is to show the pragmatic evaluation of propensity probability in the practice of *Ifa* literary corpus. Second is to establish that Popper's idea of severe testing of hypothesis with his disposition to single-case probability is a derivative of Bayesian probability. The aim is to establish that Popper's propensity probability is inductive in nature, yet to rise with it to a higher plane of appreciation of Popper's critical rationalism. To accomplish this I accept that Popper's anti-justificationism is unstable, but I inject the least amount possible of justificationism into the needed rescue of critical rationalism.

I

Popper developed a bold form of propositional calculus he termed propensity probability. This differs from the purely frequency interpretation of probability that deals with statistics of sequence. Two main issues are at stake in Popper's propensity probability. First is his disposition to single-case probabilities. Second is how Popper's propensity theory of probability is made explicitly in relation to environmental factors.

Popper had rejected the frequency theory of probability for offering an account of probabilities with respect to statistical sequences. The frequentists, in Popper's view, failed to consider probability in terms of a single case, but only in terms of infinite sequence of events. Popper's propensity probability sees results of events not in terms of the sequence, rather in terms of the factors that conditions the result of such events. The crux of Popper's propensity theory of probability, therefore, is that the probability of the result of every kind of event is conditioned, dependent or determined by the factors of the physical environment at that point in time, and not by the result of the frequent sequence.

There is an implicit symmetry of science and metaphysics in Popper's propensity probability. On the one hand, the single-case propensity is a property of experimentation with which severe testing of hypothesis can be achieved. On the other, there are ontological properties evident in propensities of physical factors that determine the outcome of the probability of any happenings given certain initial conditions. Both are mutually accommodated in Popper's propensity probability. As David Miller rightly posits, Popper's propensity probability is significant for quantum theory and for a new metaphysics of nature.

There is an underlying practical relevance of Popper's propensity probability to a probabilistic cognition of the traditional Yoruba knowledge of *Ifa*, to which this study partly looks into. This is intended is to bring to fore an indigenous knowledge system of *Ifa,* which emphasizes on both the scientific and the metaphysical, as Popper's propensity probability does. *Ifa* is structured in a binary format in its organisation and application of knowledge, which can be tested in a single-case manual experiment. The outcome of every manual throw of the *ọ̀pẹ̀lẹ̀* in *Ifa* corpus is embedded in the mathematics of the binomial probability distribution, and it is determined on a number of physical/metaphysical/spiritual factors.

The *ọ̀pẹ̀lẹ̀* is *Ifa's* divining chain, organised in four binary pairs, placed on the divination tray named the *opon ifa.* The ọ̀pẹ̀lẹ̀ is an 8 pieces of coins chained together. When the ọ̀pẹ̀lẹ̀ is tossed on the divination tray *"opon ifa"*, each piece has only two mutually exclusive outcomes and all eight have a total of 256 possible combinations. The complexity here can be made simple by an example of the outcome of tossing a coin. You get a "head" or a "tail", not both and not neither. With this, one has two mutually exclusive and exhaustive possibilities. Each possibility is of a p or q chance. This is different from obtaining ½. The two possibilities have a total chance of one (p + q =1). But if one tosses the same coin 8 times, or one tosses 8 (equally weighted) coins once, you get 2x2x2x2x2x2x2x2 = 2 to the power 8 = 256 possible outcomes. But it is not the relative frequency of the sequence of events that is important in *ifa*, it is the result of divination, which is largely determined by factors external to the ọ̀pẹ̀lẹ̀.

In the *Ifá* system, a disposition to probability is used in order to remove any bias that may arise from the preconceptions of the priest who tosses the ọ̀pẹ̀lẹ̀. Ordinarily when the ọ̀pẹ̀lẹ̀ is tossed the priest uses the appropriate poems and aphorism called the *odu-ifa* to achieve a divination for a given situation. As earlier mentioned, the ọ̀pẹ̀lẹ̀ divination chain consists of eight disc-like seed, attached together by a string, each having two distinctly differentiable sides. The divination chain is cast by gently swinging and then throwing it onto a flat surface. The manual swinging randomizes the arrangement of the discs, so that when the chain is thrown to the ground, a random pattern manifests. Due to the fact that the *ọ̀pẹ̀lẹ̀* has eight disks that can manifest dichotomously, it works as an eight bit random number generator with the capacity of generating 256 distinct patterns. Each pattern corresponds to an *odù-ifa,* each of which describes key social circumstances and various prescriptions relevant to each circumstance.

The underlying process and methods of *Ifá* divination share many similarities with the processes in Popper's propensity probability. Essentially, both processes represent real life situations that understand that the outcome of any events is not determined by the relative frequency of the number of sequence, which sees the world as a physically closed society, but are categorised by genuine freedom and creativity. Unlike the relative frequency probability approach to mathematical modeling which is deterministic in its assumptions and results, propensity probability of Popper captures the essential stochastic nature of real life and is therefore capable of modeling real life without any unfounded assumptions of determinism. In a similar way, the *Ifá* oracular system models the random nature of various life events by introducing a probability distribution defined by the divination chain.

II

In spite of the application of Popper's propensity probability to practical life situations, this second section of the paper examines the technical details of the account of Popper's theory of severe testing, in an effort to bring out its relationship to Bayesianism. In Popper, let the expression 'prob(E, T)' stand for *the probability of the evidence "E" given theory "T"*. Popper defined the severity of a test by comparing the likelihoods of the evidence "E" given both the new and the older background theories, vis., "T", and "B": That "E" is a severe test of "T" with respect to background theory "T", or thus that S(E, T, B) holds, demands by definition that prob(E, T) is much greater than prob(E, B).

The Bayesian explanation for this would be as follows. Let us take the case where from "T" (with any auxiliaries) we can deduce "E"; then prob(E, T) = 1, or is very high.

Now considering the background theory B and E, there are two cases:

(1) If on the one hand "E" is highly likely given "B", i.e., either prob(E, B) =1 or at least prob(E, B) is very high, then the Bayesian probabilification of T given E is low. In Popperian

terms, either S(E, T, B) = 0 or at least S(E, T, B) is very low. In this case, "E" gives roughly the same degree of support to "T" as to "B" and is not well able to decide between them.

(2) If on the other hand "E" is quite unlikely given "B", i.e. either prob(E, B) =0 or at least prob(E, B) is very low, then the Bayesian probabilification of T given E is high. In Popperian terms, either S(E, T, B) = 1 or at least S(E, T, B) is very high. In this case, "E" gives quite different degrees of support to "T" and "B" and is well worthy of consideration to help decide between them.

This paper steps away from Popper to the extent of employing Bayesian principles. However, this is intended to clearly re-establish Popper's idea of a severe test. The Bayesian principles, in one way, suggest that Popper's anti-inductivism needs to be relaxed. It is by making probable the improbable-seeming that a theory manages to be susceptible to a severe test; and it is when the theory passes such tests that it can be looked upon with favour.

Another way to consider this is an instability in Popper's own anti-justificationism. Popper sought not any-old kind of favouring of a theory but rather a justified kind of favouring of a theory. Favouring a theory because it has passed many tests none of which is severe would be a mistaken kind of favouring in Popper's own view. Only favouring a theory because it has passed a good number of severe tests (and has not yet failed any tests) is justified, according to Popper. So Popper must to some extent have been oriented to justification. The account of Popper that we need is one that minimises the needed justificationism.