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FREQUENCIES AND BELIEFS

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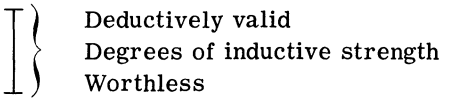
Brian Skyrms, in his *Choice and Chance: An Introduction to Inductive Logic*,* characterizes degrees of inductive strength as lying on the following scale:



I will argue here that the scale holds only for one of two types of frequency argument discussed below, and that certain other arguments do not hold on this kind of scale but do hold on a scale of degrees of doubt. The net result of all this will be that it is a mistake to regard inductive arguments as lying on a continuum with deductive validity. I gather that the following example by Skyrms—

> Ninety per cent of the Oriental rug dealers in the United States are Armenian.
> Mr. X is an Oriental rug dealer in the United States.
> Mr. X is an Armenian.

—the inductive probability of which he says is "quite high", will illustrate that he is construing such arguments as parts of an ascending series of inductive strength. Accordingly, let us consider the following series of arguments:

I. 8 out of 10 A's are B's.
This x is an A.
This x is a B.

II. 9 out of 10 A's are B's.
This x is an A.
This x is a B.

*Dickenson Publishing Company; Belmont, California (1966). The references in this paper are to Chapter I.

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III. 10 out of 10 A's are B's.
This x is an A.
This x is a B.

Skyrm's view seems to be this: the conclusion of II has a higher degree of inductive strength than the conclusion of I, and the conclusion of III has a higher degree of inductive strength than the conclusion of II, and since III is deductively valid, degrees of inductive strength increase until one has deductive validity.

But compare this series of arguments with the following series of arguments:

I*. 8 out of 10 examined (observed) A's are B's.
This x is an A.
This x is a B.

II*. 9 out of 10 examined (observed) A's are B's.
This x is an A.
This x is a B.

III*. 10 out of 10 examined (observed) A's are B's.
This x is an A.
This x is a B.

(It is, of course, assumed that the x is not one of those entities involved in the first premise, and it should be kept in mind that no clue is supplied as to how many such entities in question now exist, or have existed in the past, or will exist in the future.) Now, even granting that it makes sense to speak of these conclusions as increasing in degrees of inductive strength, the conclusion of III* is not deductive.

So far I have argued that the scale offered by Skyrms could hold only for the first of the above surveyed two types of frequency argument. Certain other arguments involving beliefs do not hold on this scale either but would hold on a scale of degrees of doubt. The point can be developed by considering another of Skyrms' examples, one that is said to be a "pretty good" argument:

George is a 100 year old arthritic man.
George will not run a four-minute mile tomorrow.

It may help to first distinguish between two related arguments, the first of which is deductive and the second of which is inductive:

i. No 100 year old arthritic man has ever run a four-minute mile.
George is a 100 year old arthritic man.
George has not run a four-minute mile.

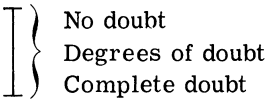
ii. No 100 year old arthritic man has ever run a four-minute mile.
George is a 100 year old arthritic man.
George will not run a four-minute mile tomorrow.

Each of these arguments bring in a premise not listed in the Skyrms argument. This raises the question as to what is actually being presumed in such arguments. As a rough sketch I propose the following set of premises for my own belief that George will not run a four-minute mile tomorrow:

Very few healthy young men can run a four-minute mile.
(And few have.)
As men grow older their ability to run fast distances decreases.
As men grow arthritic their ability to run fast distances decreases.
There are no known cases of either old or arthritic men having run four-minute miles.

These premises are a mixture of beliefs and frequencies, and combined with the statement that George is a 100 year old arthritic man lead me to think that George will not run a four-minute mile tomorrow.

Such arguments can be placed on a scale of degrees of doubt, i.e., degrees of belief, i.e., degrees of feeling certain.



In my own case my belief that George will not run a four-minute mile tomorrow would go at the top of the scale, that is, I have no doubt that George will not do it, i.e., I have the maximum degree of belief that he will not do it, i.e., I feel certain that he will not do it.

The argument concerning George just sketched is inductive in the sense that it resembles ii rather than i. Thus on Skyrms' scale it could not be placed at the top (deductive validity). Accordingly, it seems to me that such a scale as the one Skyrms proposes is not relevant to arguments that involve beliefs. As for frequencies, again, the most that could be said is that the scale is relevant to only the one type of frequency argument. In short, inductive arguments cannot be placed on an ascending scale with deductive validity at the top.

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