

Karl Popper – Objective Knowledge (Extract: pp. 17-21¹)

§8. Corroboration: The Merits of Improbability

§8.1

- Popper denies that his theory of preference is for the “more probable” hypothesis. On the contrary, he claims to have shown that the testability of a theory rises with its *information content*, and therefore with its improbability (in the sense, he says, of the calculus of probability). The preferred hypothesis will therefore most often be the least probable. However, Popper rejects the notion – proposed by Harsanyi (see *Philosophy* 35, 1960) – that he adopts an “improbability criterion for the choice of scientific hypotheses”. Not only has he no “criterion”, but also often he cannot prefer the more improbable hypothesis on account of it having been proved empirically false. Even so, Popper has been thought perverse, yet he claims his argument is simple – “content = improbability” – and have even been espoused by such as Carnap who promote inductivism and a probabilistic theory of induction².

§8.2

- Popper had originally introduced the term “*degree of corroboration*” to show that probabilistic theories of preference (or induction) are absurd. This term isn’t a mathematical “straw man” to be knocked down, but is “defined” with respect to a certain theory as (1) an evaluation report at a certain time of the state of critical discussion, showing the way it solves its problems, (2) its degree of testability, (3) the severity of the tests it has undergone and (4) the way it has withstood these tests.
- Degree of corroboration thus evaluates *past performance* and is essentially *comparative* – one theory may be better corroborated than another *up to time t*. While it may lead us to prefer some theories to others, it says nothing about future performance or about the “reliability” of a theory. This evaluation would not be affected even should Popper’s or an alternative formulation of degree of corroboration be capable of quantification. Popper claimed that Lakatos believes that quantification of Popper’s theory would make it into a probabilistic theory of induction, making reference to *The Problem of Inductive Logic*, but now admits that he’d misunderstood the passage³.
- The purpose of Popper’s introduction of *formulae* as definitions of degree of corroboration was to show that in many cases the more *improbable* hypothesis is preferable and to show clearly in which cases it does and doesn’t hold. He claims to be able to show that *preferability* cannot be a *probability* in the mathematical sense. One can still *call* the more preferable theory the more *probable*, but mustn’t be misled by terms.
- In summary, we can often say – in Popper’s terms defined above – that one theory is preferable to, or better corroborated than, another. But, obviously, the degree of corroboration at a certain time says nothing about the future, being (in my words) just a “state of the art” report.

¹ Chapter 1 : Conjectural Knowledge, §8.

² As does Dorothy Edgington, much to the annoyance of Ken Gemes, it seems.

³ Try to look this up!

§8.3

- Popper has to emphasise the provisional nature the degree of corroboration, because some have misunderstood him as using corroboration as an index of the *future* performance of a theory. Popper quoted from *LSD* to the effect that he advocates, instead of talking of the *probability* of a hypothesis, that we should try to assess the tests it has withstood and assess how far it has proved its fitness to survive – how far it has been corroborated. People had thought that “prove its fitness to survive” meant fitness to withstand *future* tests.
- Popper denies having mixed the Darwinian metaphor. No one thinks species that have survived in the past will on that account survive in the future. All species that failed to survive some time *t* had survived up to *t*.

§8.4

- Popper now turns to the degree of corroboration of a statement *s* that follows logically from a theory *T*, but is logically much weaker⁴ than the theory *T* to which it belongs. Since *s* will have less information content than *T*, *s* and the system *S* of all statements that can be deduced from *s*, will be less testable and corroborable than *T*. However, Popper thinks that because *T* has been well tested, its high corroboration applies to all it entails, and consequently *s*, attains a higher degree of corroboration than it ever could apart from *T*.
- Popper relates this to the thought that degree of corroboration is a means of stating *preference with respect to truth*. If we prefer *T* with respect to its claims to truth, we must logically prefer all its consequences, even if less easy to test separately, which are true if *T* is.
- Consequently, Popper claims, the degree of corroboration of statement *s* “The sun rises in Rome once every 24 hours”, itself not very well testable⁵, has risen following the corroboration of Newton’s theory and the description of the earth as a rotating planet, both of which are well testable and, if true, imply the truth of *s*. A statement *s* that is derivable from a well-tested theory *T* has, regarded as a part of *T*, the degree of corroboration of *T*. However, if it’s not derivable from *T*, but jointly from two theories *T*₁ and *T*₂, it will qua part of these theories, have the same degree of corroboration as the less well tested⁶ of *T*₁ and *T*₂. This is despite the possibility of *s* on its own having a very low degree of corroboration.

§8.5

- The main difference between Popper’s and the inductivist’s approaches is that Popper stresses *negative arguments*, whereas the inductivist stresses “*positive instances*” from which (quoting Hempel), “non-demonstrable *inferences*” can be drawn which are hoped to guarantee the “*reliability*” of the conclusions of these inferences. Popper’s view is that all that can be positive in scientific knowledge is so only insofar as certain theories are preferred to others in the light of critical discussions (including attempted refutations & empirical tests) up to a certain time.
- These negative methods, all that can be said to be positive, clarify many points such as explaining what’s meant by positive or supporting instances of a law.

⁴ What’s this supposed to mean?

⁵ Is this really less testable than these theories Popper suggests?

⁶ This requires a proof.