

Donaldson IML (2008). Francis Bacon's comments on the power of negative observations in his Novum Organum.



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Bacon's Novum Organum (Bacon 1645) was first published in 1620 (Bacon 1620) as the second part of Instauratio Magna, an intended six-part work on a new method of investigating the natural world. One may translate 'Novum Organum' as 'new instrument' or 'new method'. The projected Instauratio was never completed and only fragments of it were published. It was to have contained an account of the current knowledge of the world, of the false or inefficient methods of examining it which were to be discarded, of the method or instrument which was to replace these (the Novum Organum), followed by examples of the use of the instrument and then, finally, an account of the world of Nature re-analyzed with the new instrument. It is hardly surprising that the work was never completed. For more details, see, for example, Kitchin's Introduction to his edition of the Novum Organum (Bacon and Kitchin 1855).

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Bacon's comments on the relative importance of positive and negative instances of the occurrence of an event on the extent to which a general proposition about the event is believed are found in Aphorism 46 of the Novum Organum. The following is from the translation of Bacon's works by Spedding et al (1863).

The human understanding when it has once adopted...

Besides, independently of that delight and vanity which I have described, it is the perpetual error of the human intellect to be more moved and excited by affirmatives than by negatives; whereas it ought properly to hold itself indifferently disposed towards both alike. Indeed in the establishment of any true axiom, the negative instance is the more forcible of the two.

I do not think that it expresses Bacon's meaning precisely. The last sentence is certainly imprecise and rather obscures Bacon's important contention, which is that the 'negative instance' is the more effective in establishing the truth of any axiom (my italics). The point is, surely, not whether the 'axiom' is finally believed to be true but the greater weight carried by negative instances in deciding on its truth (or falsity).

The first English translation, by M.D., - unidentified as far as I can discover - published in 1676, is excellent and stays close to Bacon's Latin, but is, perhaps, not easily understood by the modern reader. It will be found [here](#). I have therefore provided a [new translation](#) which remains close to the Latin but which, I hope, is more easily understandable than the elegant Jacobean English of M.D.

Bacon's contention might be seen as a weaker adumbration of Karl Popper's claim (Magee 1975) that the basis of belief in the truth of some statement about the world depends on the possibility of refuting the statement - that is, of showing it to be false - and not directly on evidence which supports it. That is to say that a proposition is to be believable until it has been refuted. The business of scientific enquiry is to set up hypotheses that are capable of refutation and then, if experiment does not refute them, to hold the hypotheses as credible only as long as they remain unrefuted. Hypotheses that are not capable of refutation are of no value.

References

Bacon F (1620). Francisci de Verulamio, Summi Angliae Cancellarii, Instauratio magna. London, Londini : Apud [Bonham Norton and] Ioannem Billium typographum regium, Anno 1620.

Bacon F (1645). Franc. Baconis de Verulamio / Summi Angliae Cancellarii / Novum organum scientiarum. Lugd. Bat. apud Adrianum Wiingaerde, et Franciscum Moiardum. Lugd. Bat., apud Adrianum Wiingaerde, et Franciscum Moiardum.

Bacon F, Kitchin GW (1855). Francisci Baconi de Verulamo, summi Angliae Cancellari, Novum Organum, sive Indica Vera de Interpretatione Naturae. Edited, with English notes and appendices by the Rev. G.W. Kitchin, Student and tutor of Christ Church, Oxford. Oxford, E Typographico Academico.

Magee B (1975). Karl Popper. London: Fontana.

Spedding J, Ellis RL, Heath DD (1863) in The Works (Vol. VIII) Boston: Taggard and Thompson.

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