

Statistics and Political Science

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Schuylerville, New York

Statistics

The word statistics in the German form at one time meant political science (like Staatskunde or Staatswissenschaft) and is derived from the Latin "status" (from the verb "stare," to stand). The Romans used "status" first to mean position, posture, situation, condition, and social status. Later it came to mean state or form of government as in "status rei publicae" (most literally, the standing of public things). The word "Staat" comes into the German language in the 15th century. [Grimm brothers (1854)]

In 17th and 18th century German we find -- taken from "Staat" and with the addition of the foreign "ist" -- "der statist": "Staatsmann," "Politiker" (statesman, politician.) Lessing: "statist, wird genennet, welcher den staat whol versteht" (statesman, understood as he who understands the state well). Nehring (1690): "Er is ein guter statist" (He is a good statesman). The usage corresponded with the English word "statist" at the time.

In Cotgrave's French-German dictionary of 1611, we find neither "statistique" nor "etat" (state) but only "estat" (the estate; cafe; nature, substance, being; fashion, property, condition, quality of things).

Then in the 18th century appears "Statistik" (political science) constructed from "statist" and perhaps from the French "statistique" as well. For Weigand "Statistik" means "Staatskunde" (the art of statecraft) and for Kinderling (1795) it means "Staatswissenschaft" (political science).

As for the actual history of statistics as we understand it today, its origins are to be found in the work of Captain John Graunt (1620-1674) and his friend Sir William Petty in England. Petty was using the term "political arithmetic" around 1680 in England. "...the two men between them founded the English School of what was called 'Political Arithmetic.' These men and their disciples...never used the term 'Statistik' nor called their data 'statistics,' but their problems and ideas were taken up by English mathematicians, Halley and De Moivre, and spread through Bernoulli and Euler to continental mathematicians." (Karl Pearson, 1977, p. 2.)

The story of the appropriation of the term "statistics" for the English language was told by Karl Pearson in his lectures at University College London, 1921-1933; he probably relied in part on a translation of Dr. V. John, "Der Name Statistik -- Eine Etymologisch-historische Skizze", (Berne, Verlag von K.J.Weiss, 1883.) The translation was published in

Vol.46 J. Roy. Statist. Soc. (1883) pages 656-679. (E. S. Pearson, 1977, p.1-9) Some samples:

"There was a bitter fight between the Gottingen school of Statisticians [who were following Conring (1606-1681) and Achenwall (1719-1792) in using the word "Statistik" to refer to statecraft and not to modern statistics] and the school of Political Arithmeticians [led by Carl Kniess] claiming to be Statisticians. [Kniess: Statistics as "the application of mathematical theory to the interpretation of mass observations."] The language used by the two claimants was not polite! It was indeed worthy of the medieval scholars, and culminated when Fullati, the last of the Gottingen school, protested against Quetelet's use of the term statistics in anthropometry. But the victory was absolute and complete. The disciples of Achenwall disappeared into several separate branches of science, Staatswissenschaft, Political Economy, Constitutional Law and History." (Pearson, p. 3)

For the English language, "A Scotsman steals the words 'Statistics' and 'Statistik' and applies them to the data and methods of 'Political Arithmetic.' It was certainly a bold, bare-faced act of robbery which Sir John Sinclair committed in 1798." (Ibid.)

Here is Sinclair's explanation: "Many people were at first surprised at my using the new words, "Statistics"" and 'Statistical', as it was supposed that some term in our own language might have expressed the same meaning. But in the course of a very extensive tour through the northern parts of Europe, which I happened to take in 1786, I found that in Germany they were engaged in a species of political inquiry to which they had given the name of 'Statistics,' and though I apply a different meaning to that word, for by 'Statistical' is meant in Germany an inquiry for the purpose of ascertaining the political strength of a country or questions respecting matters of state; whereas, the idea I annex to the term is an inquiry into the state of a country, for the purpose of ascertaining the quantum of happiness enjoyed by its inhabitants, and the means of its future improvement, but as I thought that a new word might attract more public attention, I resolved on adopting it, and I hope that it is now completely naturalised and incorporated with our language." ("The Statistical Account of Scotland drawn up from the communications of the ministers of the different parishes", Vol. XX, 1798., Quoted in Pearson, pp. 8-9)

In the nineteenth century we have Lambert Quetelet to thank or blame more than anyone for beginning the close study of vital statistics records and introducing statistical reasoning into the study of society. Here is his optimism: "Having thus observed the progress made by astronomical science in regards to worlds, why should not we endeavor to follow the same course in respect to man?" ("On Man," 1841, p. 9).

Political Science

The following is offered in the teeth of Arthur F. Bentley: "If any of these things lead us to interesting paths we shall be prepared to follow them, heedless of definitions. Who likes may snip verbal definitions in his old age, when his world has gone crackly and dry." ("The Process of Government," 1908 and 1935, p. 199.)

Even as we might hope to reduce politics to mathematical science, the very language of that science contains residues of political meaning in its special terminology. Consider, for example, Mayer-Kress: "Since historical events are not reproducible, we can assume that the course of history could be translated into a stochastic process. Individual sequences of events are meaningless within a theory or model; only statistical properties are relevant. Thus, we think that any socio-political theory has to contain some stochastic elements. In our case these are represented by random perturbations acting on the system's parameters." (in "The Ubiquity of Chaos," 1990, p. 184)

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As for "perturbation," one goes back to the Latin "perturbare" which means to throw into disorder. What more happily political a word could modern science appropriate? Indeed, Quetelet: "It would be important to determine, in all the laws affecting the human species, what belongs to nature and what belongs to the disturbing force of man; it appears at least certain, that the effects of this force are slow, and might almost be called SECULAR PERTURBATIONS." (Ibid. p. 8, emphasis in the original). One might consider Socrates, Napoleon, and Einstein as perturbations, if not the butterfly in Papua which causes the hurricane in the Caribbean.

The word "stochastic" derives from the Greek "stokhos," a stake at which archers aimed, thus coming to mean aim or purpose, and more mediately from "stokhazesthai" which means to guess at. These roots sound very political, for the archer is military, and the politician deals in purposes and often has to make guesses, given the world of uncertainty in which he operates. Here is Quetelet: "What! when it is necessary to take the most simple resolve, we are under the domination of our habitudes, our wants, our social relations, and a host of causes which, all of them, draw us about in a hundred different ways." (p. vii). From a mathematical point of view, there is no accounting for purpose, as in fashion there is no accounting for taste.

The point here is not only to show the appropriation of political concepts or terms by mathematical science but also to acquaint the reader with the origins of modern political science, as mathematical reasoning was brought to bear on political phenomena.