

ON THE HISTORY OF UNIVERSITY STATISTICS

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Summary: The early development of university statistics, or *Staatswissenschaft*, is briefly sketched, as well as its changing state in the second half of the 19th century, and note that it is still in existence, although in a changed way. In this paper there were also described the work of Karl Fedorovich Gherman (Carl Theodor Hermann) (1809) and a booklet by Christian von Schlözer (1827), the son of A.L. Schlözer.

Keywords: history of statistics, Göttingen, Achenwall, Schlözer.

1. Gottfried Achenwall

He created the Göttingen school of *Staatswissenschaft*. It determined the climate, geographical situation, political structure and economics of separate states but did not study the relations between quantitative indications. Achenwall recommended to carry out censuses without which he (1761/1779, p. 187) nevertheless thought it possible to obtain a *probable estimate* of the population by issuing from data on births (on baptisms) and deaths.

Achenwall followed the founder of the *Staatswissenschaft*, Hermann Conring, and was the first to expound systematically this discipline, and, moreover, in German rather than in Latin, the Conring's language. In his opinion (1752; Introduction) *Staatswissenschaft* actually denoted politics. And it is appropriate to mention that in a letter of 1742 Daniel Bernoulli (Fuss 1843/1968, Bd. 2, p. 496) stated that *mathematics can be also rightfully applied in politics*. Citing Maupertuis' approval, he continued: *An entirely new science will emerge if only as many observations will be made in politics as in physics*. But did he understand politics just as Achenwall (and Gherman, see below) did later? As Laplace did? He (1814/1995, p. 62) urged that *the method based on observation and calculus should be applied to the political and moral sciences*.

But who exactly ought to accomplish this task? Statisticians had (have?) been unwilling to allow mathematicians a free hand. Indeed, *An ablest mathematician can judge matters belonging to agriculture as*

artlessly as a child (A.L. Schlözer 1804, p. 63). And, more to the point, Chuprov (1922, p. 143): *Only mathematically armed statisticians can defeat mathematicians playing at statistics.*

Achenwall (1749, p. 1) also appropriately defined *the so-called statistics* as the *Staatswissenschaft* of separate states and thus left an indirect definition of statistics:

In any case, statistics is not a subject that can be understood at once by an empty pate. It belongs to a well digested philosophy, it demands a thorough knowledge of European state and natural history taken together with a multitude of concepts and principles, and an ability to comprehend fairly well very different articles of the constitutions of present-day kingdoms [Reiche].

Achenwall's student A.L. Schlözer (1804, p. 86) figuratively stated that *History is statistics flowing, and statistics is history standing still.* Obodovsky (1839, p. 48) suggested a similar maxim: *Statistics is to history as painting is to poetry.* For those keeping to *Staatswissenschaft* Schlözer's pithy saying became the definition of statistics which, contrary to his opinion, was thus not compelled to study causal connections in society or discuss possible consequences of innovations.

Knies (1850, p. 24) quoted unnamed German authors who had believed, in 1806 and 1807, that the issues of statistics ought to be the national spirit, love of freedom, the talent and the characteristics of the great and ordinary people of a given state. This critic had to do with the limitations of mathematics in general. Note that Leibniz (§ 4) did not mention such concepts.

Here, however, is an ancient example of uniting description with numbers:

Moses (Numbers 13: 17–20), who sent out spies to the land of Canaan, wished to find out *Whether the people who dwell in it are strong or weak, whether they are few or many*, – wished to know both numbers (roughly) and moral strength.

Tabular statistics which described separate states by numerical tables appeared in Anchersen (1741) and perhaps could have served as a connecting link between words and numbers, but Achenwall had *experienced a public attack* against the first edition of that book (published in 1749 under a previous title) by Anchersen. *Tabular statisticians* continued to be scorned, they were called *Tabellenfabrikanten* and *Tabellenknechte* (slaves of tables) (Knies 1850, p. 23). In 1734, I.K. Kirilov (Ploshko and Eliseeva 1990, pp. 65–66) compiled a tabular description of Russia, but it was only published in 1831.

A.L. Schlözer (1804, pp. 41 and 90) twice mentioned that subject. In the first instance he stated that the concocted tables provide *Unwahrheiten* (why did he single out those tables?) but then positively mentioned the tabular method. Anyway, statistical tables have retained their importance, witness for example astronomical yearbooks or the still celebrated *Recherches...* edited by Fourier (1821–1829).

By the end of the 19th century the scope of *Staatswissenschaft* narrowed, although it still exists, at least in Germany, in a new form: it includes numerical data and studies causes and effects and it is the application of the statistical method to various disciplines and a given state, but statistics, in its modern sense, owed its origin to political arithmetic founded by Petty and Graunt.

They studied population, economics, and commerce and discussed the appropriate causes and connections by means of elementary stochastic considerations. Petty called the new discipline *political arithmetic* and its aims were to study from a socio-economic point of view states and separate cities (or regions) by means of (rather unreliable) statistical data on population, industry, agriculture, commerce etc.

2. Karl Fedorovich Gherman

The title of his booklet (1809) mentioned statistics, and he applied this term time and time again, but he really meant *Staatswissenschaft*. Indeed, the subject of statistics is the state (p. 57). Gherman several times specifies this statement, and even largely repeats himself. Here is the gist of his declarations.

Statistics differs from geography, history, civil law, economics and politics in its usual sense, but all these sciences support, or can support statistics and provide it with their materials (pp. 39 and 50–54). Elsewhere Gherman (pp. 19–20) adds a queer explanation: *Politicians known as economists ...* Then, history is mostly interested in great upheavals and their causes (p. 52) and Schlözer's pithy saying is only an intricate play on words (p. 48). I suspect, however, that Gherman wrongly considered that saying as a definition of statistics.

Note that Quetelet (1846, p. 275) thought that other sciences were alien to statistics which was only true in a strict sense. I would say that those sciences (for example, geography) apply the statistical method.

Statistics has to do with people living in a state but not to those dwelling in loose societies (pp. 35 and 52) and it is knowledge rather than a science since it considers deeds but not concepts (p. 35). At the same time, however, Gherman (Introduction on unnumbered pages)

insists that only a perfect theory can make statistics [transfer it into] the foundation of all political sciences. Here, as in many other instances, he follows Schlözer (1804), but many later statisticians stressed that statistics did not yet have its own theory.

I believe that in those times *theory of statistics* really meant a system, a suitable arrangement of statistics.

For his part, Obodovsky (1839, p. 2) declared that theory is important for statistics just as the soul is important for the body; that it ought to distinguish, estimate, collect and arrange statistical data; that no one is anymore doubting that the theory should constitute the main and essential part of statistical courses. He (p. 102) also noted that for many statisticians the material part had been the main component of statistics and the mass of statistical data increased boundlessly and it was impossible to arrange the collected data in a system. Referring to Lueder (1817), he added that statistics became a target for mockery.

Indeed, Lueder (1817, p. v) formulated his aim as destroying statistics and politics which is tightly connected with it and likened statistics with astrology (p. ix). His statements were understandably forgotten.

Then (Gherman, pp. 36 and 37), statistics considers everything that noticeably influences the wellbeing of a state at a given calm period. It does not judge, praise or blame (p. 37) and useless secrecy harms it (p. 105). Secrecy dominated statistics which had only been tolerated (p. 19). (The past tense is certainly wrong.) Cf. A.L. Schlözer (1804, pp. 51 and 52): the possibility of collecting and publishing statistical data, incompatible with despotism, is a litmus test of civil freedom.

It is usually thought that statistics only includes numbers (p. 16), but non-numerical information is also needed about the enlightenment and education, about the work of the government, foreign affairs and legislation (p. 17). However, readers feel themselves *almost choked* by the great amount of statistical materials and calculations which still do not provide genuine knowledge (p. 22). Only well arranged and compiled [numerical] tables can glorify statistics (p. 52).

Gherman pays much attention to ensuring a real picture of reality and Ploshko & Eliseeva (1990) who provide some more information on Gherman note that elsewhere he discussed grouping of populations, means and relative magnitudes. On p. 87 they also state that in 1821 Gherman and another professor of the Petersburg university were removed from teaching for *insulting religion and the existing order*. Indeed, Gherman (1809, p. 3) stated that in Western Europe theologians formerly acquired so much power that they had hindered scientific progress.

3. Gottfried Wilhelm Leibniz

In the beginning of the 1680s he compiled several manuscripts on political arithmetic and Staatswissenschaft which were only published in mid-19th century. Now, they are available in his collected writings on insurance and finance mathematics (2000). In one of those manuscripts he (1680–1683/2000, pp. 442 and 443) adopted unfounded premises about population statistics including a simply fantastic statement: the birth rate can be nine or ten times higher than it is.

In his manuscripts devoted to Staatswissenschaft, Leibniz had recommended the compilation of state tables containing information useful for the state and the comparison of those of them which pertained to different states or times, as A.L. Schlözer (1804, p. 32) later stated; the compilation of medical sourcebooks of observations made by physicians, of their recommendations and aphorisms; and the establishment of sanitary commission to be entrusted with unimaginably wide tasks. He mentioned inspection of shops and bakeries, registration of the changes in the weather, fruit and vegetable yields, prices of foodstuffs, magnetic observations and, the main goal, recording of diseases and accidents affecting humans and cattle.

Leibniz (1682) also compiled a list of 56 questions (actually, of 58 since he made two mistakes in numbering them). He left them in an extremely raw and disordered state and a few are even incomprehensible. Their main topics were population statistics in a wide sense; money circulation; cost of living; morbidity. Incidentally, for some strange reason population statistics at least up to the 20th century had shunned medical problems. I am listing those questions in English although for two of them I only quote their German and hardly understandable translations from the original Latin.

1. The numerical strength of the population
2. The ratio of men to women which determines to what extent is celibacy compatible with it.
3. The ratio of married and unmarried.
4. How many women are fertile.
5. How many men can bear arms.
6. The strength of each age of the population.
7. Which age groups are more prone to diseases.
8. How many children live to become adult.
9. How long is the mean duration of human life.
10. How long is the presumable duration of life for people of a given age group.
11. How much does a life annuity cost.
12. How salubrious are the localities.
13. Which diseases are predominant, when and where.

14. How are the diseases mutating from one into another.
15. What is the ratio of the forces of diseases.
16. And especially of the chronic and acute diseases.
17. Comparison of rural areas and towns of medium size with cities.
18. Which localities or years are more or less fruitful.
19. The relations of the ways of life (if the respective numbers of deaths are known).
20. The distribution of the numerical strengths of populations in various localities.
21. Comparison of the numbers of deaths and births.
22. Increase or decrease of the population.
23. The knowledge of the geometric area, of the aspects and disposition of each locality and of their parts mostly restricted by natural boundaries.
24. How large is the crop capacity of various meadow plants.
25. How many herd animals can be kept given a certain amount of hay etc.
26. How large is the mean crop capacity of a fertile field or arable land in about seven years.
27. In what ratio and why does the cost of things increase or decrease.
28. What land is better suited for which use.
29. About the ratio of the cost of gold to silver or other metals.
30. What is the amount of a day labour of a man in each locality and how much can a man of the lowest rank acceptably earn.
31. How much can he save after a year.
- 31 (bis). How much of each thing is consumed.
32. To what extent are people from without earning their income here, and we from them.
33. To what extent do we need them and they need us.
34. About the barely understood real ratio (wahre Verhältnis) of money.
35. On the inherent real value of fields and arable land as well as of other things.
36. About the present use value of houses, commodities etc and its distinction from the real value.
37. About these distinctions from year to year.
38. How much money is there in hand. This is usually judged quite mistakenly.
39. How many men are there of each speciality (Beruf) and how large are the ratios of their numerical strengths.
40. How large ought to be those ratios.
41. About a gradual reduction of things to their real ratios.
42. About the improvement of land (Äckern) by draining marshes.
43. About decreasing the flooding by preparing the ground for many ponds in dry localities and in the mountains so that torrents will less flood the plains.
44. Flöße, flößen, damit es, soweit es geschehen kann, verringert wird.
45. Carting of timber from remote localities and how to achieve this.
46. About transplanting separate trees along streets.
47. An exact description of all arts and specialities.
48. Address bureaus.
49. Registration of all changes due to deaths, baptisms, marriages etc.
50. The history of diseases in each locality.
- 50 (bis). About old and new loads of metals.

51. Daß an verschiedenen Orten auf öffentliche Kosten die Menschen, wenn auch langsam, Wasserleitungen in die Berge führen, in der Hoffnung auf Metalle. Städte oder ganze Gegenden werden zusammenwirken.

52. On sowing clover.

53. On planting potato.

54. Put anonymous communications in publicly installed boxes.

55. The significance of a usual and a valuable man.

56. Documents and books. Nothing should be issued without permission because many desire it.

4. Subsequent history

4.1. The scope of Staatswissenschaft gradually narrowed. After economics became separated (Adam Smith), geography, meteorology and biology followed suit. And the study of causes and consequences simply had to begin. A.L. Schlözer (1804, pp. 85–86), for example, rhetorically asked, why did the population of Spain only number 12 *mln*.

The climate of opinion had however, been different, see Delambre (1819, p. LXVII), France; Anonymous (1839), England, the statement of the established London Statistical Society; and Russia (Gherman, § 2, indirectly). But still, life demanded such studies:

Absurd restrictions [about investigating causes and consequences] *have been necessarily disregarded in ... numerous papers* [in the *Journal of the London Statistical Society*] (Woolhouse 1873, p. 39).

Wagner (1867, p. 423) bluntly stated that numbers were necessary and on p. 428 mentioned the *Süssmilch – Quetelet direction, or the school of statistics proper*, which did not at all belong to Staatswissenschaft. Zahn (1926, pp. 870–871) noted that a quantitative direction had appeared in the university statistics (when?) although opposed by the partisans of previous notions. He concluded that statistical materials had ousted remarkable features and political arithmetic had gained the upper hand, that statistics had adopted its *classical form*:

Accordingly, nowadays statistics appears as a doctrine (Lehre) of mass occurrences in human societies and social life (Gattungsleben) of nations and especially of the regularities and order which become there noticeable.

Remarkable features of a nation insistently sought out by university statisticians had been excluded from statistics as were the notions mentioned by Knies (§ 1). Even A.L. Schlözer (1804, p. 11) only thought about the *moral state of the population*, but certainly did not say anything about its measurement. Knies' statement (1850, Introduction) that

statistics is a branch of Staatswissenschaft ceased to be true. Note that neither Schlözer, nor Gherman applied the term *Staatswissenschaft*.

Many early authors thought that statistics was a science. Butte (1808) proclaimed it in the title of his book; Schlözer (1804, p. 58) stated that without order and system statistics was not a science; he possibly thought that that unattained condition was sufficient. Even Gherman (§ 2) by separating statistics from some sciences contradicted himself and recognized it as a science as well.

The notion of the theory of statistics apparently changed with time so that Cournot (1843, § 105) declared that statistics ought to have (e.g., did not yet have) its own theory, rules and principles. Much later Chuprov (1905, p. 422) remarked that statistics had no generally accepted principles for corroborating its conclusions or the expediency of its methods.

A queer episode followed: Chuprov (1909) called his book *Essays on the Theory of Statistics* but (p. 20 of the edition of 1959) agreed with a German author that *a clear and rigorous justification of the statistical science was urgently needed*. And, just below, Chuprov mentioned the *lack of a clear theoretical foundation*.

Issuing from Schlözer's opinion, I think that statistics fortified by its theory, i.e., resting on mathematical statistics and the theory of probability, is a science. However, I replace here mathematical statistics by its theoretical analogue, which means that I complement the former by the collection of data and their preliminary investigation.

Zahn said nothing about the application of the theory of probability to statistics, but German statisticians are known to have been sharply opposing it for many decades. Haushofer (1872, pp. 107–108) declared that statistics, since it was based on induction, had no *intrinsic connections* with mathematics based on deduction. Knapp (1872, pp. 116–117) stated that the law of large numbers was barely needed since statisticians always made only one observation, as when counting the population of a city.

Maciejewski (1911, p. 96) introduced a statistical law of large numbers instead of the Bernoulli proposition that allegedly impeded the development of statistics. His own law qualitatively asserted that statistical indicators exhibited ever lesser fluctuations as the number of observations increased and his opinion likely represented the prevailing attitude of statisticians. Bortkiewicz (1917, pp. 56–57) thought that the law of large numbers ought to denote a *quite general* fact, unconnected with any stochastic pattern, of a degree of stability of statistical

indicators under constant or slightly changing conditions and a large number of trials. Even Romanovsky (1912, p. 22; 1924, pt 1, p. 15; 1961, p. 127) kept to a similar view.

The situation changed slowly although even Woolhouse (1873, p. 37), for example, stated that statistical investigations are closely linked with the theory of probability. Chuprov published two German contributions (1905; 1906), but their impact was barely felt and Wolff (1913, p. 31) stated that Chuprov was hardly a statistician. Even later Kaufman (1922) denied all the new ideas and methods of mathematical statistics. Sampling only became definitively accepted at about the same time although a century ago Lueder (1812, p. 9) had noted the appearance of *legions of numerical data and statistical tables filled with numbers*.

But to return to Staatswissenschaft. A noteworthy statement was due to Chuprov (1922, p. 339):

The worthy creation of the German university statistics certainly should not be returned from its grave where it had been dozing for a century in its previous state. It will arise rejuvenated and smartened up, but, under its contemporary look it will display its previous face which it had at the times of Achenwall and Schlözer.

As an independent science, statistics will become a systematic description in time and space of the remarkable features of the various clearly delimited social forms. ... Numerically described mass phenomena will occupy the forefront without however attaining absolute dominance. Otherwise statistics will not at all be able to establish itself as an independent science.

Although Chuprov himself had studied the application of the statistical method in natural sciences, he did not mention this topic here. A.L. Schlözer (1804, p. 21), however, noted that in France the term *statistical meteorology* had already appeared. He apparently referred to Lamarck (1802, title and p. 300).

The regeneration of Staatswissenschaft, its partly transfer to political arithmetic had apparently occurred in the mid-19th century. It exists nowadays, and at least in Germany it is taught at some universities. Statistics is obviously needed in natural sciences, in national economy and by governments. Perhaps in spite of Chuprov's opinion numerical data do not appear in the forefront of Staatswissenschaft considered as a whole, – considered as *an application of the statistical method to the various aspects of the life of states*.

4.2. Christian von Schlözer and his booklet. According to Hugelmann (1890), Christian von Schlözer (1774–1831), son of A.L. Schlözer,

became Doctor of Law at the age of 22 and, five years later, Professor at Moscow University. He returned to Germany as Professor Emeritus a few years before his death and was an *Extraordinarius* at Bonn.

The scientific library of Moscow University keeps 13 of his books, mostly in Latin and German, but he is barely known. I describe his booklet (1827), his own translation from its original French edition of 1823. On the title page of that booklet he described himself as a

Professor Emeritus of natural economy and diplomacy at the Moscow Imperial University, an Honourable Member of the Kremlin Armoury and an honourable, a full, or a corresponding member of various scientific societies in Moscow, Petersburg, Mitau (Jelgava), Königsberg and Göttingen.

Below, I translate the Introduction to his booklet. Its main text consists of two parts, *Theory of Statistics*, which testifies to the author's understanding of the essence of statistics, and *Theory, or Philosophy of History*. There is also an *Appendix*, a reprint of a part of his report (1822). At the end of the Introduction Schlözer indicated that he had enriched the theory of statistics with *many new ideas* and stated that history has its own theory as well. He did not justify his former claim.

Schlözer himself remarked that his booklet will only become useful after a report (I would say, after reports) about the sketched topics. In essence, he said as much on his title page: *For application at my lectures*. Indeed, the topics in both parts of the booklet are listed haphazardly, and only a shortest comment on them can be useful. I only note that

1) The description of climatic belts is obviously unfortunate. In particular, he should have compared, in the first place, not the Old and the New World, but the northern and the southern hemispheres (not forgetting Australia and especially its animals). Then, C. Schlözer evidently did not know that Humboldt, in 1817, had introduced isotherms and continued to mention *mathematical climates*.

2) Schlözer said absolutely nothing about the visitations of small pox and cholera which had been devastating both Europe, and at least parts of the New World and Asia. He could have also mentioned the classical memoir of Daniel Bernoulli on prevention of small pox.

4.3. Translation of the Introduction to C. Schlözer's booklet (1827). Bearing in mind the sciences whose contours I am now offering to my respected listeners, I can only add a few remarks. In accordance with its notion, in Germany, the theory of statistics has for a long time been generally known. However, only 20 years ago my celebrated father had

formulated its entire significance¹. In his opinion, the theory of statistics rather than *practical statistics*, or *statistics in its proper sense*, as it is usually thought, should be recognized as the most important part of that science.

Gradually, entire Germany had adopted his system, and most universities there offer special lectures on the theory of statistics. My father was apparently in the right when he stated² that by means of this science a thinking young man can imagine the statistics of any given nation and as though create it for himself. Or, in other words, can achieve a clear idea about its might, culture, richness, constitution, and government.

If the theory of statistics is not alien to him, he will most easily do without any reports³, only by reading statistical works or even by using statistical sources. On the other hand, it is also true that without the support of a *general theory*, even the widest and most precise information about isolated statistical facts invariably provides *a crude, incomplete and disordered* knowledge.

However, if my celebrated father was able to *improve the method of studying statistics*, and especially its theory, I, for my part, attempted to *enrich* the theory of statistics with many new ideas. At least to excuse, if not justify my impudence, I may refer to an utterance of my father himself (A.L. Schlözer 1804, p. 125): *We are* [a gap in the text; 40, as stated by Schlözer the elder] *years younger and will not be dim-witted when going further* [than Achenwall did].

And, under similar circumstances, I have already obtained a soothing and encouraging experience when, 22 years ago, I compiled a reference book on natural economy [apparently, the book of 1805–1807]. I courageously renounced all the mistaken propositions then received by the best German authors and teachers of politics. Nevertheless, my book, *from the very moment of its first appearance*, had suddenly been most favourably accepted and until now is being applied as a manual in Russia and Germany, probably in Poland⁴ as well. Otherwise, had I blindly followed the old theory, my manual would have been forgotten long ago.

Finally, let it be allowed to mention as a justification⁵ one more, last fact. Almost all of my views with which I have attempted to enrich the theory of statistics have been expounded three years ago in my scientific reports and met in the best possible way by the Moscow scientific community. These reports, which I do not regard as useless, to a certain extent expound my new views on which [whose?] recent tabular booklets⁶ are partly based.

The second science which I am here describing is *the theory or philosophy of history*. For most of my listeners this science will seem entirely new, and so it is with regard to its repute with which I impart it, if not to its subject. Even during the first instruction it resembled a very useful and deep booklet of my late father (1779)⁷. What I am now offering as the theory or philosophy of history is just *a sequel of that booklet*. In other words, my theory is a *preparatory course on history for adults*.

Following my father, my booklet aims at *laying the foundation of a certain method* for studying history, i.e., for presenting on a few pages the subject of this science in a general way. Then, like my father, I am offering you a large number of considerations, apparently simple and superficial, but which actually are the fruit of long and diligent studies. In any case, readers can argue that the events expounded in history had been occasioned by blind *chance*, that history has no invariable or definite subject; that each isolated fact as though constitutes a whole; that it is therefore impossible to establish *general historical principles* for applying them to isolated facts. I ought to fear that such objections will mostly be voiced by those who are narrow-minded to such an extent that they believe that history is only concerned with *battles, conquests, personalities, dates and changes of power*, that nothing except a good memory is therefore needed for a sound mastery of that noble science. Each such objection will be absolutely groundless.

Indeed, the so-called chance does not at all possess the significance usually attributed to it. I think that a battle can be lost because of an unforeseen random occasion, for example, when a sudden storm blinds one of the armies. However, *blind chance* had never destroyed an entire state after its long or even fleeting well-being, and never had any other state become rich, cultured and mighty by chance.

Actually, the change in the destiny of peoples is indeed based on eternal and invariable moral laws just as the changes in the material world are governed by physical laws. Our restricted mind is sometimes unable to study all the various latent conditions which stipulate the application of either kind of laws⁸. However, experts often allow themselves to derive close connections in politics and the theory of statistics⁹ and reduce causes and effects to laws when only blind chance is apparently suspected.

Some other considerations are connected with those mentioned above. If special and random differences are disregarded, we invariably note essentially the same. We always have the same needs and

inclinations and we therefore often reveal remarkable similarities in the spiritual and secular organizations and institutions of nations most remote from each other.

And exactly this feature of similarity constitutes the first topic of my theory of history as described in its first section (A). On the contrary, in section (B) I mostly turn my attention to the already existing large national associations and states. Institutions and facts are there much more diverse than in case of populations living in childlike conditions. And as soon as such populations become considerably more numerous and start advancing in culture, richness and might, they also begin to deviate from their exact similarity.

In many respects peoples become distinguished from one another and develop as though by following different ways. I hope that my readers and listeners will not therefore reproach me for being inconsistent since in section (B) I consider *differences* whereas in (A) I only establish resemblances and similarities. This is occasioned by the essence of the matter. There surely was a period (I am offering just one example) when the Romans had in some aspects been just like other Italiotes¹⁰, but they gradually constituted a nation as indicated to some extent in history.

The same occurred with many other peoples. Recall that children are more alike than adults although those latter who attained a higher social standing again less differ from each other. And still there exists some similarity in the destinies of the larger associations of people, some common connection between them. The same causes that bring about the fall of one state or the increase in the richness, culture and might of another one determine the destiny of each state and they are usually more or less the same. Assisted by our science, my respected listeners will therefore be able to reveal the relations existing between separate nations about which they never had any inkling.

This study also protects us from impulsive judgement to which we are too often led by insufficient information about isolated subjects such as the origin and kinship of nations, linguistics, establishment and development of states, origin and advances in culture, causes of the increase in richness and political might of states. I therefore flatter myself with hope that in both indicated main directions my theory of history will be worthy of attention and approval of my listeners. Exactly the theory of statistics will allow you, when studying the theory of history, not only to consider subtly the history of any people or state, but, as my late father had put it, to compile the history without attending any special lectures.

As to the sources which provided the materials for my theory, I ought to refer preferably to two contributions¹¹, one of them by my late father (1772), and the other one, by the illustrious Adelung (1806). Most of my views are the fruits of my own historical and ethnographic studies. In this respect, the 30 years of my life in Russia inestimably benefited me. It provided me with a possibility of clearly, and sometimes to a certain extent with my own eyes seeing people of various nationalities existing under all possible conditions from the primitive state up to the highest form of civilization and, moreover, belonging to every level of social life.

One more remark. This booklet was initially intended for the students, the sons of the gentry, of the Moscow boarding school at the Imperial University. Its real usefulness can only be derived in reports on the topics themselves which could have been only mentioned here. Indeed, even in this Introduction it would have been necessary to provide various explanations by pertinent examples which I will certainly do [in my future reports]. Concerning some other topics, for example, classification of various occupations and trades, no further explanations are required. I have added these latter topics for the sake of comprehensiveness so as to indicate all the objects demanding the attention of the nation's government, if, as I stated in the second edition of my book on national economy¹², it intends to be informed *about the richness of its subjects and the various productive and consuming classes as precisely as the father of a family, be it rich or poor, wishes to assess the situation in his household.*

4.4. The main sections of that booklet. I only translate the main headlines.

[Section 1.] Theory of statistics

Preliminary notions

The main objects of the theory of statistics

A. The main forces of the state

1. People

2. Land

3. Riches

B. Unification of forces or the constitution. General remarks

C. Management of the forces of the state, or the government

1. Managerial branch

2. Branches indirectly aiming at maintaining security of the state

3. The branch of the management of all kinds of objects

[Section 2.] Theory or philosophy of history

A. Preliminary notions about any historical study, preferably about the primitive state of peoples

B. Preliminary notions about the history of an entirely formed small or large state unity

4.5. Appendix

As noted above, in my report (1822) I have openly indicated the insufficiency of Staatswissenschaft or of statistics as a science in its previous sense. I may be so bold as to flatter myself that, according to the unanimous opinion of my Russian readers my report was sufficiently clear and comprehensive and therefore easily understandable even by those less accustomed to the Latin language. And I think that it is expedient to repeat literally its part concerning the problems discussed here, the more so since in accord with its essence my report can not become known in Germany. [That part of the report is reproduced (in Latin).]

Translated by the author from the French edition of this book (Moscow, 1823) and somewhat enlarged by him.

Notes to § 4.3.

1. *I turn statistics over and mostly discuss its theory* (A.L. Schlözer 1804, p. 91). [Above, he (1804) indicated that the German universities only teach the theory of statistics as an introduction to *practical statistics*. O. S.]

2. *Thus, by applying this science beginners can easier than by means of the previous method learn the art of studying the statistics of some state and, so to say, of creating it* (Ibidem).

3. The last phrase also concerns practical statistics. Witness the excellent words of the programme of the lectures of this year at Breslau (p. 4):

Etenim res in scholis traditae et quae dictare conscribique possunt partem tautummodo faciunt disciplinae Academicae, ex libris interdum certius petendam etc.

And, if truth be said, the *quantities and lists of commodities*, which had previously been thought to be the essential component of practical statistics, are so unconvincing in a report. Just the same, it is so unimportant for listeners to write them down, or, which is the same, they require the sacrifice of the mostly *insufficient precious* time for rewriting them especially if considering in addition that only 30 years ago lecturers on many sciences had been attempting to overload their talks by empty quotations.

On the contrary, the topics of the theory of statistics are *notions, considerations, opinions*, and the expression *singularum rerum pondus* etc mentioned in that programme is extremely suitable for our science just as reports quite agree with philosophical, physical and other sciences.

4. I justified it in various generally available booklets written on occasions.

5. Above, Schlözer only aimed at excusing his *impudence*. O. S.

6. Incidentally, a very flattering anonymous review of the two of my booklets in the *Leipz. lit. Z.*, Jg. 1825, and another one no less flattering compiled by renown authors in the

local *Göttingische gelehrte Anzeigen* for the same year prove how well I was able to attain my goal of enriching the theory of statistics as indicated above.

7. See Niemeier's *Pädagogik* and a brief biography of my father in *Zeitgenossen*. Note that many adults could have beneficially read his booklet. It was translated into almost all the accomplished European languages, and some of them twice, for example into French and Russian and had appeared in Germany in seven or eight editions. [See Niemeier (1796). The journal *Zeitgenossen* had been published in Leipzig in 1816 – 1841. O. S.]

8. I recall hearing a very shrewd remark at a lecture of the learned and witty Lichtenberg and it is quite suitable for interpreting that fact, but perhaps I reproduce it only approximately:

We can calculate the motions of planets, but no mathematician has yet been able to foresee the outcome of a die cast which is based on the eternal laws of gravity to the same extent as are those motions. Indeed, the arrangement of the die [on our palm] and its relation with one or another muscle are unknown to us.

[G. Chr. Lichtenberg (1742 – 1799), an experimental physicist and satirist. I do not see anything shrewd in his remark. O. S.]

9. Actually, even my celebrated father (A. L. Schlözer 1804, p. 86) had called history itself *statistics flowing*. However, for studying any given statistics we need *the theory of statistics*. It is for this reason that my readers and listeners will not be surprised when discovering at the end of my theory of history a certain similarity between the topics whose study requires the attention of an investigator of the history of a given state and some topics of the theory of statistics.

Clearly, however, when previously information had been lacking, it was impossible to study separate facts as it is done today. Now, everything is therefore seen wider and in less precise masses.

10. Italiotes: pre-Roman (!) Greek-speaking inhabitants of the Italian peninsula between Naples and Sicily. O. S.

11. Understandably, I mean the learned and celebrated Adelung from Dresden. [Joh. Chr. Adelung (1732 – 1896), a philologist. O. S.] Both contributions are full of new and radiant ideas about ancient history, methods of ethnographic studies etc. My statement mostly concerns A. L. Schlözer. Apart from other places, see the remarks on his pages 211, 212, 222, 263, 271, 273, 275 and 306.

It even seems that the excellent Adelung had borrowed some of Schlözer's ideas which had not at all been as widely known as they should have been, and which, moreover, are nowadays almost forgotten. For example, we still hear superficial chatter about Scythians and Sarmatians although even 60 years ago my father (1772) had shown that (just as in the case of Negroes, Siberians, Indians et al) these names are *empty*. They should not now be mentioned in reasonable historical contributions.

Without yet being acquainted with some of Adelung's original ideas, I have expounded them in a competitive paper on the present situation of the history of ancient Russia. My paper had indeed won the prize of the Moscow Imperial Society for Russian History and Antiquities. I was unable to read Adelung's book since it only appeared when I had been compiling my paper and even outstanding German books had often only reached Moscow a year or a few years later.

My celebrated father had also participated in that competition although I did not know it. His characteristic style at once revealed his authorship, but he did not win the prize since, in an outburst of low spirits, instead of answering the question he attempted to prove that it was inadmissible (which was not altogether true). And he therefore selected for himself the

motto *Ignorare malo, quam commenta credere* [I prefer to ignore rather than to trust comments (?)]. I had not at all been suspected of being an author of one of the competitive papers, otherwise, owing to various reasons and even because of a [negative] opinion about my father, I would not have won the prize.

I have written and presented my paper in German, but it was published in Russian. It also became necessary to remake it and submit it in Latin since its topic attracted readers of history and all the investigators of the development of Slavonic nations certainly more numerous in present-day Europe. An official announcement and a testimonial about my paper are in the *Göttingische gelehrte Anzeigen* for 1808.

12. I can only name the book C. Schlözer (1805 – 1807). O. S.

Bibliography

- Achenwall G. (1749), *Abris der neuesten Statistik*. Göttingen.
 – (1752), *Staatsverfassung der europäischen Reiche im Grundrisse*. Göttingen, this being the second edition of the *Abris* (1749).
 – (1761), *Staatsklugheit nach ihren Grundsätzen*. Göttingen. Fourth edition, 1779.
 Adelong I.K. (1806), *Älteste Geschichte der Deutschen* etc. Leipzig.
 Anchersen J.P. (1741), *Descriptio statuum cultiorum in tabulis*. Copenhagen–Leipzig.
 Anonymous (1839), Introduction. *J. Stat. Soc. London*, vol. 1, pp. 1–5.
 Bortkiewicz L. von (1917), *Die Iterationen*. Berlin.
 Butte W. (1808), *Die Statistik als Wissenschaft*. Landshut. [Nabu Press, 2011.]
 Chuprov A.A. (1905), Die Aufgaben der Theorie der Statistik. *Schmollers Jahrb. f. Gesetzgebung, Verwaltung u. Volkswirtschaft in Dtsch. Reiche*, Bd. 29, pp. 421–480.
 – (1906), Statistik als Wissenschaft. *Arch. f. soz. Wiss. u. soz. Politik*, Bd. 5 (23), No. 3, pp. 647–711.
 – (1909), *Ocherki po Teorii Statistiki* (Essays on the Theory of Statistics). Moscow, 1959.
 – (1922), Lehrbücher der Statistik. *Nordisk Statistisk Tidsskrift*, Bd. 1, 139–160, 329–340.
 Cournot A.A. (1843), *Exposition de la théorie des chances et des probabilités*. Paris, 1984. Editor, B. Bru.
 Delambre J.B.J. (1819), Analyse des travaux de l'Académie ... pendant l'année 1817, partie math. *Mém. Acad. Roy. Sci. Inst. de France*, t. 2 pour 1817, pp. 1–LXXII of the *Histoire*.
 Fuss P.N. (1843), *Correspondance mathématique et physique de quelques célèbres géomètres du XVIII siècle*, Bde 1–2. New Yor –London, 1968.
 Gherman K. (1809), *Vseobshchaia Teoria Statistiki* (General Theory of Statistics). Moscow.
 Haushofer D.M. (1872), *Lehr- und Handbuch der Statistik*. Wien.
 Hugelmann (1890), Schlözer Christian. *Allg. deutsche Biographie*, Bd. 31.
 Kaufman A.A. (1922), *Teoria i Metody Statistiki* (Theory and Methods of Statistics). Moscow. Fourth edition.
 Knapp G.F. (1872), Quetelet als Theoretiker. *Jahrbücher f. Nationalökonomie u. Statistik*, Bd. 18, pp. 89–124.
 Knies C.G.A. (1850), *Die Statistik als selbstständige Wissenschaft*. Kassel. [Frankfurt 1969.]
 Lamarck J.B. (1802), Météorologie-statistique. *Annales stat.*, t. 3, pp. 58–71, 300–317; t. 4, pp. 129–134.

- Laplace P.S. (1814, French), *Philosophical Essay on Probabilities*. New York, 1995.
- Leibniz G.W. (manuscript 1680–1683), *Essay de quelques raisonnemens nouveau sur la vie humaine etc.* In author's book (2000, pp. 428–445).
- (manuscript 1682), *Quaestiones calculi politici circa hominum vitam etc.* Ibidem, pp. 520–523, Latin and German.
 - (2000), *Hauptschriften zur Versicherungs- und Finanzmathematik*. Editor E. Knobloch et al. Berlin.
- Lueder A.F. (1812), *Kritik der Statistik und Politik*. Göttingen.
- (1817), *Kritische Geschichte der Statistik*. Göttingen.
- Maciejewski C. (1911), *Nouveaux fondements de la théorie de la statistique*. Paris.
- Niemeyer A.H. (1796), *Grundsätze der Erziehung und des Unterrichts für Eltern, Hauslehrer und Erzieher*. Halle. Several subsequent editions up to 1835.
- Obodovsky A.G. (1839), *Teoria Statistiki* (Theory of Statistics). Petersburg.
- Ondar Kh. O., Editor (1977, in Russian), *Correspondence between A.A. Markov and A.A. Chuprov etc.* New York, 1981.
- Pearson K. (1978), *History of Statistics in the 17th and 18th Centuries etc.* Lectures 1921–1933. Editor, E.S. Pearson. London.
- Ploshko V.G., Eliseeva I.I. (1990), *Istoria Statistiki* (History of Statistics). Moscow.
- Quetelet A. (1846), *Lettres sur la théorie des probabilités*. Bruxelles.
- Recherches* (1821–1829), *Recherches statistiques sur la ville de Paris et de département de la Seine*, t. 1–4. Editor, J.B.J. Fourier. Paris.
- Romanovsky V.I. (1912), *Zakon Bolshikh Chisel i Teorema Bernoulli* (The Law of Large Numbers and the Bernoulli Theorem). Warsaw.
- (1924, in Russian), *Theory of probability and statistics etc.* *Vestnik Statistiki*, No. 4–6, pp. 1–38.
 - (1961), *Matematicheskaja Statistika* (Math. Statistics), vol. 1. Tashkent.
- Schlözer A. L. (1772), *Allgemeine nordische Geschichte*, Bde 1–2. Halle.
- (1779), *Vorbereitung zur allgemeinen Weltgeschichte für Kinder*. Last edition, 1806.
 - (1804), *Theorie der Statistik*. Göttingen.
- Schlözer C. (1802), *Primaе lineae scientiarum politicarum*. Moscow.
- (1805–1807), *Anfangsgründe der Staatswirtschaft etc.*, Bde 1–2. Riga.
 - (1808), *Prospectus d'un institut d'éducation*. Moscow.
 - (1822), *De nounullis etc.* In *Rech'i i Otchet v Torzhestvennom Sobranii Imp. Mosk. Univ.* (Speeches and Report at the Grand Meeting of the Imp. Mosc. Univ.). Moscow.
 - (1823), *Table des matières continues dans la théorie de la statistique ainsi que cette de l'histoire etc.* Moscow.
 - (1827), *Grundriß der Gegenstände, welche in der Theorie der Statistik, so wie in der der Geschichte, vorzüglich in Beziehung auf den ethnographischen Teil der letztgenannten Wissenschaften enthalten sind*. Göttingen.
 - (1828), *A. L. von Schlözer. Öffentliches & Privatleben*, Bde 1–2. Leipzig.
- Sheynin O. (2011), *Alexandr A. Chuprov. Life, Work, Correspondence*. Göttingen.
- Wagner Ad. (1867), *Statistik. Deutsches Staats-Wörterbuch*, Bd. 10. Stuttgart–Leipzig, pp. 400–481.
- Wolff H. (1913), *Zur Theorie der Statistik. Jahrbücher f. Nationalökonomie u. Statistik*, Bd. 45, pp. 1–43.

Woolhouse W.S.B. (1873), On the philosophy of statistics. *J. Inst. Actuaries*, vol. 17, pp. 37–56.

Zahn F.R. (1926), Statistik. *Handbuch der Staatswissenschaft*, Bd. 7. Fourth edition. Jena, pp. 869–886.

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HISTORIA STATYSTYKI UNIWERSYTECKIEJ

Streszczenie: W artykule tym przedstawiony jest krótki rys początkowego rozwoju statystyki określanej mianem państwowznawstwa. Zarysowano zmiany, jakie zaszły w drugiej połowie XIX w. W artykule tym omówiono też prace K.F. Ghermanna (C.T. Hermann), broszurę Ch. von Schlözera (1827) oraz jego syna A.L. Schlözera.

Słowa kluczowe: historia statystyki, Göttingen, Achenwall, Schlözer.

