

The German controversy on the methods of moral statistics in the second half of the 19th century

Julia Lücke

Universität Hamburg
Faculty of Business, Economics and Social Sciences
Department of Economics
History of Economic Thought

Julia.luecke@uni-hamburg.de

I. Introduction

Under the heading “moral statistics” theologians, natural scientists, economists and philosophers in the 18th and 19th century made attempts to statistically record human behavior with regards to some types of social norms. They analyzed data on marriages, births and crimes. For example, they investigated how often different types of crimes were committed by certain groups of people or within a country within a year, and made comparisons over time and between groups and countries. As a central result, they found that over several periods of time similar frequencies of marriages, births, crimes could be observed for well-defined groups. The regularity in large observation sets seemed, to many thinkers, contradictory to the notion of the uniqueness and diversity of individual behavior. Moral statistics was placed in the context of broad philosophical questions about human free will and determinacy of action. Although the moral statistical studies provided very different interpretations of the statistical observations, one result was often emphasized – the embeddedness of the individual in the system of society and the influence of social factors on individual action. Therefore, the contributions to moral statistics often offer, at least implicitly, certain notions about the nature of “the society”. Moral statistics was integrated into a broader social science research program; this is highlighted by the fact that the term “moral

statistics”, since the turn to the 20th century, had often been replaced by the term “social statistics”.

German economists discussed and contributed to moral statistics especially in the second half of the 19th century. It seems natural for German ethical-historical economists to be drawn to moral statistics as statistics gained rising importance for economists of that time. Many economists who became leading figures in Germany participated in Ernst Engel’s statistical seminar in Berlin (Herold 2019, 131). Some, as for example Georg Friedrich Knapp, even worked as statisticians at statistical institutes. In addition, the representatives of ethical-historical economics had a social science approach and derived political demands for social reform from their research. They regarded the human being, also as an economic actor, as being part of a social and ethical community. The socio-political guidance that the thinkers of ethical-historical economics provided was thereby based on a normative definition of economic, social and ethical progress.

The paper examines the contributions to moral statistics of three representatives of ethical-historical economics of the younger generation – Georg Friedrich Knapp (1842-1926), Adolph Wagner (1835-1917) and Gustav Schmoller (1838-1917). Their contributions are investigated and compared with regard to two main questions. First, the epistemological question of whether means of statistics are appropriate (and perhaps even sufficient) to solve the problem of observed regularity on the aggregate scale and individuality of single actions. Second, the question, how “the society” serves as an explanatory factor for the observed regularities of human behavior. The latter question is linked to the former in cases in which the economists make statements about the social impact on individual behavior as arguments of statistical investigation. However, it also goes beyond the former question, since the three economists provide arguments derived from other sources than a statistical analysis in a narrow sense. The paper shows that, with regard to both questions, the answers of the three economists differ remarkably.

While the three economists developed own positions towards both questions, they also explored and commented on the development of different strands of moral statistics. Especially Knapp (1871 and 1872) provides an overview of different thinkers of moral statistics and deals extensively with the work of Adolphe Quetelet. In this context, he works out some illuminating classifications. This paper applies two of his classificatory arguments in order to

differentiate between the approaches of Wagner, Schmoller and Knapp himself. First, it adopts Knapp's distinction with regard to the starting point of interpretation of the statistical data: the regularity on the aggregate scale versus the individuality and uniqueness on the level of the single person's action. Second, it makes use of Knapp's approach to disentangle different fields of research often merged within moral statistical studies: the study of social and normative behavior (genuine moral statistics), the investigation of quantitative changes of population (population statistics), and the examination of natural human inclinations and dispositions to act in a certain way (anthropological studies). Both classifications help to define more precisely the three economists' definitions of the research interest of moral statistics and the methods they apply. Due to his critical commentary, Knapp himself can be classified along the lines of these categories.

The contributions Knapp, Wagner and Schmoller make to moral statistics can be regarded as one example of a broader debate on how statistics can be utilized for social science research. With the increasing availability of quantitative data in the 19th and especially at the beginning of the 20th century, the possibilities and limits of statistics were discussed controversially among economists, for example in the 1910^s and 1920^s in the context of early business cycle statistics. Can numbers capture social and economic phenomena appropriately? Which results can legitimately be derived from observed quantities using statistical instruments? To such questions Knapp, Wagner and Schmoller already provided different answers. They published their contributions to moral statistics as young economists around the age of thirty; this paper explicitly focuses on the arguments they developed then. However, it also sheds light on selected aspects, which indicate how their methodological and contentual arguments were carried on in later work, by their own or by their successors.

Section II introduces Knapp's classification of two strands of moral statistics that differ with regard to the starting points of explanation of the statistical data. This classification is applied to compare the respective methodological approaches of Wagner, Knapp and Schmoller. Section III highlights the different causes to which the three thinkers attribute the observed regularity in large observation sets. Knapp's approach to disentangle different research foci mixed up in moral statistical studies is transferred to an analysis of the contributions of Wagner, Schmoller and Knapp himself. Section IV concludes and provides an outlook on enriching further research questions.

II. The starting point of explanation: the individual versus the whole

Knapp (1871) distinguishes between two main strands of moral statistics – the French school and the German school. According to Knapp, the French school applies explanatory patterns of the natural sciences to the study of human normative behavior. Böhme (1971, 9) adopts this classification. She asserts that a shift towards natural science explanations in the 19th century came along with an altered understanding of man's relation to nature: the human being was now considered as an integral part of the natural system and as affected by laws of nature. Moral statisticians of the French school transferred the notion of laws of nature to the sphere of human social interaction and ethical behavior. Adolphe Quetelet (1796-1874), a Belgian astronomer and statistician, became a central figure of this tradition of moral statistics. Quetelet "solved" the seeming contradiction between individuality of action and regularity in large numbers by constructing an "average man". As characteristics, he assigned to the "average man" the mean observations of moral behavior that he declared to be human natural inclinations. He postulated that the arithmetical means would express the standard or benchmark and justified this claim by constructing a system of constant causes and independent accidental disturbances, which for large numbers would follow a normal distribution around the mean. He defined individual characteristics and motives as the disturbing factors; "the society" was for him a central constant cause and explanatory factor of what he defined as normal behavior (Desrosières 2005, 84-88). Knapp assumes that Quetelet was so often regarded as a reference point in the 19th century because his work contained many facets and some contradictory statements, so that many thinkers could link their own work to his studies (Knapp [1872] 1925, 52). Furthermore, the radicalism of some of his statements, for example his notion of a penchant for crime, probably attracted people. In the 20th century, Quetelet was hardly noticed anymore; this might be due to his unsophisticated statistical techniques and the fact that he contributed little to the further development of the statistical method. However, the emphasis on the society understood as an entity that is more than the sum of individuals and that has some influence on individual behavior has been transferred to many sociological theories, mostly without any reference to Quetelet (Desrosières 2005, 90-91).

In the second half of the 19th century, another school, mainly represented by German thinkers, emerged that criticized the natural science analogies of the French school and the fact that

conclusions about laws of nature were derived from the statistical observations. These thinkers focused on the individual's internal motives for ethical behavior. They claimed that human behavior, contrary to what the French school postulated, was not primarily exposed to external forces (Knapp [1871] 1925, 8-9; Böhme 1971, 11). According to Knapp the theologian Alexander von Oettingen and the mathematician and philosopher Moritz Wilhelm Drobisch were representatives of the German strand of moral statistic (Knapp 1871, 7-8, 12-15). They recognized the unsolved questions concerning the statistical finding of regularity in large numbers. However, they claimed that both, regularity of aggregate behavior and human free will, can be compatible or even postulated that human free will was the source of the observed regularity. Their investigations included psychological, ethical and sociological elements and traced regularities in aggregate behavior back to shared motives of individuals socialized within a specific social or cultural setting.

According to Knapp, the French school and the German school differ with regard to their starting point of explanation of the moral statistical data. The former explains moral action "from external to internal"; it "perceives the consistency of the whole and therefore confines the individual". The latter approach explains "from internal to external". It "takes the individual as given and seeks reasons for the consistency of the whole"¹ (Knapp 1871, 9).

While Wagner predominantly followed the Queteletian way of thinking and can therefore be related to the French tradition of moral statistics, Knapp and Schmoller advocated the approach of the German strand. This section elaborates the arguments the three German economists provided for their respective starting points with regard to Knapp's characterization of the two strands. These arguments express different opinions on the possibilities and limits of statistics. Wagner, Knapp and Schmoller appreciated that moral statistics had pointed to regularities in aggregate human behavior. However, they had different opinions about the role of statistics in *explaining* and *interpreting* these observations. Table 1 summarizes their arguments.

¹ Die französische Schule „erklärt von außen nach innen, sie sieht die Stetigkeit des Ganzen und beschränkt daher den einzelnen; die deutsche Schule erklärt von innen nach außen: sie nimmt den einzelnen wie er ist und sucht nach Gründen für die Stetigkeit des Ganzen“ (Knapp 1871, 9).

Table 1: The starting point of explanation and the methods of moral statistics

Knapp	Wagner	Schmoller
German school	French School (adopts core elements of Adolphe Quetelet's work)	German school
Critique towards Quetelet and Wagner: both external and internal causes must be considered	Significant influence of external constant causes on human behavior Individual free will causes accidental deviations from the standard	Critique towards Quetelet and Wagner: inappropriate to conclude the irrelevance of internal motives from the statistical data Individual free will has a significant influence on the consistency of human behavior
Explains consistency with similar internal motives of people living in a society	Deduces the existence of laws of nature from statistical law of large number	Explains consistency with similar moral development of free individuals living in a cultural community
Regards moral statistics as a means to <i>describe</i> the peculiarities social conditions surrounding individuals	Regards moral statistics as a means to <i>discover causality</i>	Regards statistical methods as <i>inappropriate to explain</i> consistency

At the beginning of his book on moral statistics, Wagner explicates the logic behind the first approach: "The generality of regularity became the axiom, the postulate; from it arose the hypothesis of regularity in the individual case" ² (Wagner 1864, 4). This corresponds to an explanation from external to internal. The regularity on the aggregate level is declared the starting point of interpretation. From this, regularity of individual behavior is deduced. Free individual action can only exist to the extent that regularity allows for. Wagner aligns his own work with this approach by calling for a method of investigation that explicitly abstracts from the individual person and focuses on the large number of people (Wagner 1864, 7). Wagner refers to Quetelet's image of the chalk circle, which consists of randomly assembled chalk

² „Die Allgemeinheit der Gesetzmäßigkeit ward das Axiom, das Postulat; ihm entsprang die Hypothese der Gesetzmäßigkeit im einzelnen Fall“ (Wagner 1864, 4).

particles that form a regular shape when viewed from a distance, as illuminating the predominance of regularity and the subordinate influence of individual actions – “The sphere of free movement and self-determination [is] limited to the narrow scope that law leaves us”³ (Wagner 1864, 7). Wagner adopts Quetelet’s concept of constant and accidental causes: The idea that constant causes exist that induce regular behavior and that all deviations from this standard are accidental. These deviations are assumed to follow a normal distribution and to neutralize each other in large observation sets. Wagner points out that even the accidental causes therefore show regular patterns and interprets this finding as support for the overall axiom of lawlike regularity (1864, 7-8). According to Wagner, the constant causes effecting the individuals’ actions are *external* causes, like “overall conditions in physical, economic and social relations”⁴ (Wagner 1864, 44). Following Quetelet, Wagner defines internal individual motives, like those connected to the notion of free will, as accidental deviations from the regular behavior caused by the constant “true causes” (Wagner 1864, 8). While he does not deny the influence of internal motives he, however, regards them as subordinate to the external causes. Wagner associates individual motives with arbitrariness (Wagner 1864, 8). Assuming this and considering that “[w]e cannot reject the axiom that the effects must be proportional to the causes and vice versa” (Wagner 1864, 8) he argues that internal individual motives disqualify themselves as explanations for the observed regularity in human behavior. Thus, in his eyes, external constant causes have to be the main determinants for the observed consistencies of moral behavior.

Knapp and Schmoller contradict Wagner’s statement of the significance of external causes. Knapp argues, “for the exact thinker, the regular repetition of equally strong effects reveals nothing but the continued existence of equally strong causes, whether they are external or internal”⁵ (Knapp [1871] 1925, 8). They reject the assumption of arbitrariness of individually motivated action. Referring to Drobisch, Knapp postulates that the observed constancy of moral action is due to the fact “that people are very similar to one another in terms of the motives by which they are moved and that the conditions surrounding people, from which

³ „Darin haben wir ein Bild des menschlichen Thuns und Treibens: die Sphäre der freien Bewegung und Selbstbestimmung beschränkt auf den engen Spielraum, welchen das Gesetz uns lässt“ (Wagner 1864, 7).

⁴ „Wir können diesen Satz in Betreff der uns hier beschäftigenden menschlichen Handlungen, der guten nicht minder wie der bösen, verallgemeinern: sie sind im Grossen und Ganzen das Ergebniss unserer Gesamtzustände in physikalischer, wirthschaftlicher, gesellschaftlicher Beziehung“ (Wagner 1864, 44).

⁵ „Denn für den genaueren Denker verrät die regelmäßige Wiederkehr gleichgroßer Wirkungen weiter nichts, als das Fortbestehen gleichstarker Ursachen, ob es nun äußere seien oder innere“ (Knapp [1871] 1925, 8).

most motives originate, are also very similar in both periods”⁶ (Knapp [1871] 1925, 9). According to Schmoller, the consistencies of the observed moral behavior result “from the constancy of spiritual-moral causes, from the fact that, as a rule, all the richness of the variegated individual life, given a number of constant overall conditions of spiritual life, is exhausted in a number of equal combinations, which must result in an equal or similar overall picture”⁷ (Schmoller 1871, 23). These statements make clear that Knapp and Schmoller start from the level of the individual: the constancy of moral actions on a societal level might in fact be due to factors that influence all persons within a specific group. However, these causes do not appear as external laws of nature to which the single person is passively exposed. The causes Knapp and Schmoller have in mind take effect *through* the individual, by influencing the individual’s moral development and the formation of motives to act in a certain way. Whereas Wagner classifies individual action as disturbance of the regular and associates actions of free will with arbitrariness (Wagner 1864, 7-8), Schmoller argues that individual moral freedom is the opposite of arbitrary behavior: “[T]he highest freedom is not arbitrariness, it is determination through the absolute good and ideal”⁸ (Schmoller 1871, 33). For him, regularity in moral behavior on the large scale is an expression of individuals’ similar moral development (Schmoller 1871, 36).

Wagner refers to the statistical law of large numbers in order to support his argument: “In the field of our study of man, therefore, the law of large numbers applies; only in a large number of cases, i.e. here of actions does the constant regularity become perceptible, in individual cases we observe many deviations and exceptions to the rule”⁹ (Wagner 1864, 8). According

⁶ „Daß aber auf gegebenem Gebiet die Zahl der in gleichen Zeiträumen eintretenden Handlungen sich so wenig ändert, kommt daher, daß die Menschen einander sehr ähnlich sind in bezug auf die Motive, durch welche sie bewegt werden, und daß auch die Verhältnisse, welche den Menschen umgeben, und aus denen die meisten Motive stammen, in beiden Zeiträumen sich sehr gleich sehen“ (Knapp [1871] 1925, 9).

⁷ „Erkennen wir so die geistig-sittlichen Ursachen nicht nur neben des physischen, sondern für viele der statistisch beobachteten Verhältnisse als die maßgebenden an, so wird ein Einwurf doch wieder von mancher Seite sich ergeben: wie erklärt sich dann die Stetigkeit der Resultate? Darauf kann ich nur einfach antworten: aus der Stetigkeit der geistig-sittlichen Ursachen, aus der Thatsache, daß in der Regel aller Reichthum des abwechslungsreichen individuellen Lebens sich doch bei gleichbleibenden Gesamtbedingungen des geistigen Lebens in einer Anzahl von gleichen Combinationen erschöpft, die ein gleiches oder ähnliches Gesamtbild geben müssen“ (Schmoller 1871, 23).

⁸ „Die höchste Freiheit ist dann aber nicht die Willkür, sie ist Bestimmtheit, aber die Bestimmtheit durch das absolut Gute und Ideale“ (Schmoller 1871, 33).

⁹ „Auf dem Gebiete unserer Untersuchungen über den Menschen gilt also das Gesetz der grossen Zahl: nur in einer grossen Anzahl von Fällen, d.h. hier von Handlungen tritt die constante Regelmässigkeit, uns wahrnehmbar, hervor, im Einzelnen beobachten wir mancherlei Abweichungen und Ausnahmen von der Regel“ (Wagner 1864, 8).

to Wagner, large data sets visualize the working of external laws that are, on an individual scale, obscured by the disturbing influences of individuality of action. He even goes as far as to *deduce* the existence of these external laws and to define the “relationship of true cause and effect”¹⁰ (Wagner 1864, 8) from those statistical regularities. However, he simply relies on the general axiom (hypothesis) of lawfulness, and transfers it to his interpretation of the data, without providing sufficient justification. With regard to the characterization of constant and accidental causes, he disregards the possibility that other than the proclaimed external factors could provide a significant explanation of the observed regularity. He explicitly excludes freedom of action and individuality as possible explanatory factors.

Schmoller criticizes this line of argumentation. He argues that the observation of regularities in large sets of observations, associated with the operation of the law of large numbers, is insufficient to claim the subordination of individuality under external laws of nature. According to Schmoller, Quetelet (and Wagner) restrict freedom of man too strongly to “that of an animal that is on the chain and has the freedom to move one or two feet”¹¹ (Schmoller 1871, 27). In Schmoller’s eyes, individual freedom is much more complex and not inconsistent with regularity in aggregate action: moral freedom means to have the ability to align one’s own behavior to developed moral principles. Within a cultural community, people reach similar stages of moral freedom. The regularity of observed behavior in large observation sets is in fact an expression of a high stage of individual moral development (Schmoller 1871, 23, 33). Furthermore, Schmoller criticizes that Quetelet – and Wagner adopts Quetelet’s conclusion – disregards the individuality of the single person by declaring average observations the standard and deriving universal psychological inclinations from them. Schmoller does not deny that people are affected by general influences that lead to regularity. In his eyes, however, they affect the individuals “to very different degrees, depending on their physical organization, their education and their fates”¹² (Schmoller 1871, 31).

¹⁰ „Diese accidentiellen stören die Wirkung der beständigen Ursachen, wirken aber gegenseitig so zusammen, dass sie in ihrem Einfluss im Ganzen sich ausgleichen, und so das ursprüngliche Verhältniss von wahrer Ursache und Wirkung sich hergestellt findet“ (Wagner 1864, 8).

¹¹ „[D]ie Freiheit, die Quetelet durch dieses Beispiel dem Menschen retten will, ist keine würdige, zufriedenstellende; es ist die eines Thieres, das an der Kette liegt und die Freiheit hat, ein oder zwei Fuß breit sich zu bewegen“ (Schmoller 1871, 27).

¹² „Gewiß sind allgemeine physische, sociale rechtliche, religiöse Ursachen vorhanden [...]; gewiß steht unter dem Druck dieser allgemeinen Ursachen die ganze Nation, - aber die Einzelnen doch in sehr verschiedener Abstufung, je nach ihrer physischen Organisation, je nach ihrer Erziehung, ihren Schicksalen“ (Schmoller 1871, 31).

While Schmoller points out that moral statistics would have revealed the regularity in personal and social life, he considers the contribution of statistics to the investigation and explanation of the phenomenon to be limited. He argues that “only a small part of the spiritual-moral life of the people is accessible to statistical observation”¹³ (Schmoller 1871, 23). According to Schmoller, statistics is therefore insufficient to provide deeper insights into individual actions taking place within the framework of the society. In his eyes, it is inadmissible to draw conclusions about cause-and-effect relations from the limited, superficial insight into human action statistics was able to provide. Herold confirms that Schmoller was skeptical about the possibility to quantitatively express motives for human action: therefore, he mainly refrained from dealing with quantitative methods and constructed statistic as a comprehensive qualitative empirical research program (Herold 2019, 196).

Knapp criticizes the interpretation of regularities in large sets of observations as general laws and argues that the observation of similar frequencies of action over some years do not provide a sufficient proof for law-like constancy. Furthermore, the observation of regularity is bound to the specific object of observation; it cannot be generalized and declared a natural law (Knapp [1872] 1925, 45-47). In a more general statement, Knapp downplays the importance of the law of large numbers for the investigation of moral behavior: “Statistics [can], as long as it deals with the recording of the actual alone, have no interest at all in the size of the numbers, to use the usual expression here”¹⁴ (Knapp [1872] 1925, 45). For social science research, Knapp specifically regards *descriptive* statistics a suitable instrument. In his eyes, the appropriate number of observations exclusively depends on the research question or the object under investigation. Small numbers of observations are just as legitimate as large data sets. He therefore maintains that regularity in large observation sets is simply one concrete statistical result of many possible ones: it all depends on the question posed.

¹³ „Wir dürfen, wenn wir nach dem historischen Fortschritt suchen, nicht übersehen, daß nur ein sehr kleiner Theil des geistig-sittlichen Lebens der Völker eine statistische Beobachtung zuläßt [...]“ (Schmoller 1871, 23).

¹⁴ „[D]ie Statistik [kann], solange sie sich mit der Aufzeichnung des Tatsächlichen allein beschäftigt, gar kein Interesse and „der Größe der Zahlen“, um hier den gewöhnlichen Ausdruck zu gebrauche, haben kann“ (Knapp [1872] 1925, 45).

III. The society as an explanatory factor of human behavior

Knapp, Wagner and Schmoller interpreted the finding of consistencies in the aggregate differently. They provided a wide set of explanations, ranging from materialistic to idealistic, from physical to spiritual reasons. However, they shared the view that the society and the embeddedness of people in a social system constitutes a significant cause. They provided different ideas about how behavior was affected by the interplay of the individual and the social group. In his critical examination of the work of Quetelet, Knapp (1872) disentangles different research foci that he finds summed up under the heading of moral statistics in Quetelet's work without reflection: First, the investigation of behavior with regards to shared norms that he defines as the main subject of moral statistics. Second, the investigation of quantitative changes of population; according to Knapp the research interest of population statistics. Third, the investigation of natural dispositions and inclinations of a human being to act in certain ways. Knapp refers to the latter as the research interest of anthropological studies. This chapter applies Knapp's distinction to the contributions of the three German economists in order to provide a deeper understanding of the research questions that Wagner, Schmoller and Knapp elaborated in their work on moral statistics. It also helps to understand the different methodologies they proposed for explaining the finding of regularities in aggregate behavior. Table 2 provides an overview of the statements Knapp, Wagner and Schmoller make in their contributions to moral statistics with regard to the three categories.

Table 2: Reasons for the consistencies in moral actions – The society and beyond

	Knapp	Wagner	Schmoller
Moral statistics	The individual as a social being develops motives for action that are influenced by the ethical principles shared in a society.	The individual is exposed to socially manifested habits and customs (external constant causes) and can act freely only within narrow borders.	The individual develops moral freedom through social interaction in a cultural or ethical community.
Population statistics	Materialistic reasons affecting each person as a separate being must be distinguished from social reasons which arise from the social inter-relationships of people.	Materialistic reasons, e.g. crop yields and grain prices, explain marriages, births, crimes.	Materialistic reasons have little explanatory power with regard to moral behavior in culturally developed communities.
Anthropological studies	It is unjustified to merge anthropology with social sciences, as for example Quetelet does by constructing an average moral man with a penchant for crime.	The average moral man with natural inclinations to act functions as the standard/ benchmark for the considered group of people.	Individual moral development is a psychological process based on the human natural disposition to acquire moral principles.

Knapp presents his view on moral statistics especially in his critical examination of the work of Quetelet (Knapp 1872). He considers Quetelet a reference point of many authors of moral statistics that, despite their diversity, would regard Quetelet as their “master” (Knapp [1872] 1925, 17). Specifically insightful is Knapp’s distinction between moral statistics, population statistics and anthropological studies. He claims that all three fields of study require different methods of investigation.

Knapp regards moral statistics as a problem of the *social sciences*. He points out that Quetelet, in his moral statistical studies, e.g. of crime and marriages, also adopts a social science perspective: It becomes clear, “that Quetelet [...] conducts his research in the spirit of the social sciences. Not once does he consider, be it the crimes, be it the marriages, from the point of view of the individual, but always as an appearance in society, to which he wants to ascribe an own life”. Knapp comments, that “[t]here is something unmistakably true in this view: being

together in society is even more than a coexistence of single persons”¹⁵ (Knapp [1872] 1925, 25). However, according to Knapp, Quetelet does not consider sufficiently the *mutual* influence of the society and the individual. While Quetelet emphasizes social forces as constant causes of human action, he degrades individual motives and decisions to disturbances of regularity. Quetelet leaves open how social forces, morality and individual free will mutually influence each other: “On the whole, it can be seen that Quetelet remains uncertain in this question: as the main reason, he emphasizes the affiliation of the individual to society, and it is left to the philosophers to investigate this hitherto less considered aspect in their ethical investigations”¹⁶ (Knapp [1872] 1925, 26). Therefore, Knapp welcomes the approach of the German school of moral statistics, which he associates for example with Drobisch and Oettingen. In this school, “the tool of statistics, which is recognized as effective and indispensable, fully enters the domain of social sciences, in which one drops the rather witty than true physical analogies and turns to the more realistic ethical approach”¹⁷ (Knapp [1871] 1925, 15). In this spirit, Oettingen has called for a “social ethics” (Knapp [1871] 1925, 14), built on an empirical foundation.

According to Knapp, the task of statistics within moral statistical studies is to systematically describe a society or a social group as a unique being: “Statistics does not provide the numerical values for the operation of external laws; nor is it a plain calculation example, but a realistic tool for recognizing the society as a slowly evolving being of peculiar construction, affected by various influences”¹⁸ (Knapp [1872] 1925, 50). The statistician therefore has the task to define proper categories and terms that classify and bundle the statistical data. This

¹⁵ Deutlich geht aus den angeführten Stellen hervor, daß Quetelet hier seine Untersuchungen ganz im Geiste der Sozialwissenschaften durchführt. Nicht ein einziges Mal betrachtet er, sei es die Verbrechen, sei es die Eheschließungen, vom Gesichtspunkt des Individuums, sondern immer als Erscheinungen in der Gesellschaft, der er gleichsam ein eigenes Leben zuschreiben möchte. In dieser Auffassung liegt etwas unverkennbar Wahres: das Zusammensein in der Gesellschaft ist noch etwas mehr als ein Nebeneinandersein von einzelnen“ (Knapp [1872] 1925, 25).

¹⁶ „Im ganzen ergibt sich also wohl, daß Quetelet in dieser Frage unsicher bleibt: als Hauptsache hält er die Zugehörigkeit des Individuums zur Gesellschaft fest, und überlassen bleibt es den berufenen Philosophen, diesen bis dahin weniger beachteten Gesichtspunkt in ihren ethischen Untersuchungen zu verwerten“ (Knapp [1872] 1925, 26).

¹⁷ „Das als wirksam und unentbehrlich erkannte Werkzeug der Statistik tritt dann ganz in den Dienst der Sozialwissenschaften, worin man die mehr geistreichen als wahren physikalischen Analogien fallen läßt und sich der weit natürlicheren ethischen Betrachtungsweise zuwendet“ (Knapp [1871] 1925, 15).

¹⁸ „Die Statistik liefert also nicht die Zahlenwerte für das Wirken äußerlicher Gesetze; sie ist aber auch kein leeres Additionsexempel, sondern ein realistisches Hilfsmittel, um die Gesellschaft als ein langsam sich entwickelndes, von den verschiedensten Einflüssen berührtes Wesen von eigentümlichem Bau zu erkennen“ (Knapp [1872], 1925, 50).

requires an apriori understanding of the object of investigation. Knapp does not regard statistics as a standardized method but as a specific toolbox. In his eyes, the instruments need to be tailored to the different problems. Herold (2019, 138-139) points out Knapp's emphasis on precise terminology and definitions. This methodological basis characterizes Knapp's later works. In *State Theory of Money* (1905) Knapp constructs a taxonomy of money and currency. According to Knapp, a taxonomy would be justified as an appropriate systematization if it comprises as many of the concerned observations as possible and bring them into a logically conclusive order. In this way the researcher could reveal shared characteristics of groups and make comparisons.

According to Knapp, *population* statistics investigates the quantitative nature and changes of a population, which can be explained by materialistic reasons. He calls Malthus one of the most important thinkers of population theory. Knapp argues that while Malthus's work is often reduced to its plain mathematical formulas, its core statement is the struggle of people (of different classes) for material existence. According to Knapp ([1872] 1925, 20), this struggle finds expression in the observations of births and deaths, which statisticians collect and analyze. Herold shows that Knapp defines the concept of *population* used with regard to population statistics in a technical way. He asserts that Knapp's concept of population considers people as separate objects pooled in a group and that, for Knapp, a sociological notion of mutually influencing individual interrelationships cannot be a relevant conceptual basis for the research field of population statistics. Knapp argues that due to the formal character of the problem, population statistics falls within the field of applied mathematics (Herold 2019, 139-140). In order to apply the mathematical tools to the study of the population appropriately, however, the researcher needed again an apriori conceptual understanding of the population. According to Knapp, Quetelet misses such a conceptual understanding and applies inappropriate analogies of mechanics and moving bodies. Instead, according to Knapp, the population is a continuous appearance, consisting of elements that coexist, disappear and emerge anew (Knapp [1872] 1925, 20-21). Knapp considers population statistics to be a demanding and complex problem, and expects "the task, to meet the formal, specifically the mathematical requirements, thereby having an extensive expertise, and to utilize both in the service of a great concept, to be so difficult, that probably a long time will

pass before population statistics performs as could be demanded of it”¹⁹ (Knapp [1872] 1925, 23).

Knapp further points out that Quetelet mixes up the social science perspective of moral statistics with an anthropological interpretation. From the observation that groups with certain shared characteristics show similar crime figures over time, Quetelet concludes that members of those groups share an equal penchant for crime. Knapp criticizes that Quetelet interprets the frequency of observation of a criminal action as a probability without concrete justification. Knapp shows that Quetelet constructs the penchant for crime as a shared characteristic of the members of the considered group and presents it as a unique source of crime, disregarding the different personal motives for committing the criminal action (Knapp [1872] 1925, 28-30). He shows further that the idea of the penchant for crime inspired Quetelet to define a standard of the physical constitution of the group members in the same manner. For this, he takes mean values of the observations and declares them the norm. Knapp comments that, while the *average man* might provide some insight for natural anthropology or medicine, the idea of an *average moral man* would be useless (Knapp [1872] 1925, 37). Knapp emphasizes that “the position of the average person in [the system of society] is untenable, and the connection between anthropology and the social sciences is therefore obsolete”²⁰ (Knapp [1872] 1925, 36).

These considerations show that Knapp differentiates a social definition of the people central for an understanding of human moral behavior, from a technical definition of population used for the study of population statistics. He asserts that the former is essential to the genuine social science research interest of moral statistical studies. According to Knapp, their task is to investigate the social interrelatedness of humans to account for the formation of socially shared ethical principles and norms of action. A socio-ethical perspective is therefore required. He compares the development of moral statistics with the development of the economic sciences. In his eyes, in both fields thinkers initially argued with simple templates

¹⁹ „Die Aufgabe, den formalen, besonders den mathematischen Anforderungen zu genügen, zugleich eine ausgebreitete Sachkenntnis zu besitzen und beides im Dienst einer großartigen Auffassung zu verwerten, ist so schwer, daß wohl noch lange Zeit vergehen wird, ehe die Bevölkerungsstatistik leistet, was man von ihr fordern könnte“ (Knapp [1872] 1925, 23).

²⁰ „[D]ie Stellung des mittleren Menschen in diesem System [der Gesellschaft] ist unhaltbar, daher auch die Verbindung von Anthropologie und Sozialwissenschaften hinfällig“ (Knapp [1872] 1925, 36).

and analogies of the law of nature, but turned to an investigation of real conditions, not with the intention to reveal universal laws but to compare peculiarities (Knapp [1871] 1925, 15).

As we have seen in section II, Wagner explains the observed regularity of moral behavior by external causes. In his analysis of concrete data (1864), he provides many materialistic explanations. For example, he highlights connections between persons' geographical origin, physical constitution and the frequencies of marriages, births and different types of crime committed in certain cohorts (Wagner 1864, 32-34). Among the „great general causes which mainly dominate our actions“, Wagner counts the “condition of the physical world order, such as climate, age, season (perhaps even the soil conditions of the place of residence), human physical conditions, differences of sex, age, disposition, temperaments, [...] differences in the state of health” (Wagner 1864, 43-44). Some of Wagner's arguments fall within the category of population statistics as defined by Knapp. Wagner highlights observations that, according to Knapp, show people's struggle for existence, which he explains with materialistic factors. In this sense, Wagner, for example, draws a connection between the number of marriages and crop yields as well as the respective prices of grain (Wagner 1864, 16). According to Knapp, these considerations do not belong to moral statistics in a narrow sense, understood as an investigation of the social influences on human behavior.

To the long list of material and physical factors, however, Wagner adds “the economic and social conditions in total with all the manifold relationships, habits, customs, which are connected to them”²¹ (Wagner 1864, 43-44). It shows that Wagner emphasizes next to the material determinants also a social dimension of influence. He considers people as members of social groups in which norms and customs exist that influence their actions. Wagner points out that the economic and social determinants, although relatively stable, are not immutable: “These cultural conditions can be changed and reshaped, albeit slowly, but effectively and lasting, through the deliberate action of people. [...] In practical terms, this is precisely our task, to eliminate for example the causes and occasions to commit a crime, by improving the

²¹ „Es sind grosse allgemeine Ursachen, welche unsere Handlungen in der Hauptsache bestimmen: Verhältnisse der physischen Weltordnung, wie Klima, Witterung, Jahreszeit (vielleicht sogar die Bodenbeschaffenheit des Wohnorts), Verhältnisse der körperlichen Seite des Menschen, die Unterschiede des Geschlechts, des Alters, der Anlagen, der Temperamente, [...] die Unterschiede des Gesundheitszustands, endlich die wirthschaftlichen und socialen Verhältnisse in ihrer Gesammtheit mit allen den tausendfachen Beziehungen, Gewohnheiten, Sitten, welche sich daran knüpfen“ (Wagner 1864, 43-44).

material, spiritual and moral condition of the people”²² (Wagner 1864, 47-48). In the field of social policy, Wagner for example advocated for regarding pauperization as a structural problem that must be tackled at its root, e.g. by nationalizing specific branches of the economy (Hanel 1997, 552-553). Wagner assigns the possibility of influencing these conditions to the political leaders while he does not investigate how shared norms and customs develop and alter through social interactions of individuals.

Furthermore, Wagner hardly deals the individual’s internal motives for action. He shifts the responsibility to investigate human free will and its influence on individual action to the field of philosophy (Wagner 1864, introduction XVI-XVII). As shown above, Knapp also makes this criticism towards Quetelet. Despite Wagner’s statement to exclude these questions, he still makes a strong claim on this matter by characterizing individual motives and individual actions as insignificant deviations from the overall path drawn by the external causes: “The strangest thing, however, is that in this way we function as serving elements of a great mechanism [...]. We [...] believe that we can act completely free and self-determined, while we are on the whole only passively determined, while all our actions in aggregate are ruled by fixed, general causes and realize similar to the processes of the physical world order”²³ (Wagner 1864, 46). According to Wagner, the merit of moral statistics lies in its revelation of regularities in aggregate moral behavior and the unveiling of causal relationships in the social sphere (Wagner 1864, introduction XVI). He therefore sees a justified application of the statistical method in postulating the explanatory insignificance of individual internal motives of action. However, Hanel (1997, 536) shows that Wagner himself later regarded his perspective of moral statistics, published in his study of 1864, to be too mechanistic and further questioned the possibility to make strong claims about causal relations based on the statistical findings.

Wagner associates the regularity of aggregate moral behavior with terms like *harmony*, *natural organization* and *(physical and social) order* (Wagner 1864, 8, 46). The coordination of

²² „Diese Kulturzustände lassen sich, wenn auch langsam, so doch wirksam und nachhaltig durch die mit bewusster Absicht ausgeübte Thätigkeit der Menschen ändern und umgestalten. [...] Practisch ist gerade dies unsere Aufgabe, z.B. die Ursachen und Gelegenheiten zum Verbrechen durch Verbesserungen der materiellen, geistigen und sittlichen Lage der Bevölkerung zu beseitigen“ (Wagner 1864, 47-48).

²³ „Das Merkwürdigste dabei ist aber, dass wir in dieser Weise als dienende Glieder eines grossen Mechanismus fungieren, dennoch aber eine ganz beschränkte freie Bewegung besitzen, welche diesen Mechanismus nicht in seinem vorgezeichneten Gange stört. Ja, glauben wir doch darüber hinaus sogar noch vollkommen frei und selbstbestimmend zu handeln, während wir im Grossen und Ganzen nur bestimmt werden, während unsere Handlungen in der Masse betrachtet, von festen, allgemeinen Ursachen beherrscht werden und wie die Prozesse der physischen Weltordnung vor sich gehen“ (Wagner 1864, 46).

human behavior “is wonderfully carried out on its own as a result of the natural organization of human society” and does not call for “artificial” human intervention²⁴ (Wagner 1864, 46). He claims that there exists an ordering element of nature, which also structures human moral actions. While he emphasizes the social impact on human behavior, according to Wagner, the single individual, is only a small particle that, though it can move to a certain degree within the grid of external determinants, has hardly any influence on the social frame.

Wagner adopts in his interpretations of the statistical data Quetelet’s approach to infer general human inclinations to act in a certain way from the statistical observations. Like Quetelet, Wagner (1864, 8) speaks of human inclinations to commit a crime or to commit suicide (e.g. Wagner 1864, 23, 33). In Wagner’s eyes, these inclinations are due to biological factors, like age and sex, materialistic factors and social influences. In accordance with Quetelet, he regards these inclinations as shared propensities of all members of a characteristic group. Following Quetelet, Wagner declares the average observations the benchmark for all members of the referred group: a large amount of observations “necessarily [leads] to the establishment of a middle or average person who can be regarded physically, mentally, morally as typical of e.g. the observed nation” (Wagner 1864, 8). With reference to Knapp’s distinction, Wagner includes anthropological arguments here. According to Knapp, these are inappropriate in two ways. First, as a general critique, they concern explanations that are outside the research interest of moral statistics. Second – as a more concrete criticism – the notion of an average moral man implies a degradation of individual motives to act. As we have seen, in Knapp’s eyes, this is a false result based on an unjustified application of means of statistics.

Schmoller, in his essay on moral statistics (1871), focuses specifically on the moral development of the individual. According to Schmoller, the regularity of aggregate moral behavior is an expression of a similar moral development of individuals living together within a society – which Schmoller regards as an ethical or cultural community (1871, 23). In his eyes, freedom of action means to align one’s behavior to developed moral principles. Schmoller argues that the human being has a natural disposition to attain moral freedom. While at first mainly driven by natural, sensual motives, with a progressing moral development the

²⁴ „Aber was auf solche Weise niemals künstlich durch Menschenwillen und Menschengewalt durchgeführt werden könnte, das vollzieht sich wunderbarer Weise von selbst in Folge der natürlichen Organisation der menschlichen Gesellschaft“ (Wagner 1864, 46).

individual forms moral motives, which guides the individual's actions: "First a moral feeling, then his better knowledge, his intentions, finally maxims which become a mainstay of character are ready to establish the reign of the moral man over the natural man. Therein lies his true freedom"²⁵ (Schmoller 1871, 33). According to Schmoller, individual moral development necessitates membership in a social group and social interaction, for example within a family (Schmoller 1881, 25-29). On a societal level, he regards institutions to build a superstructure, which incorporate shared social norms and values. Schmoller describes the moral and cultural institutions as historically developed and believes that they manifest the moral progress of previous generation. In Schmoller's eyes, the state and the political leaders build the core of all institutions. They can influence shared social norms and customs considerably; however, not directly but indirectly through shaping moral and cultural institutions. The rules the political leaders manifest must furthermore be consistent with the individuals' overall values and ideals (Schmoller 1881, 51-53). According to Schmoller, the cultural community as a whole is in a historical process of continuous moral development, reaching ever higher stages of morality (Schmoller 1881, 49-51). Within this framework, the individuals develop ever higher levels of moral freedom through the interplay of their own moral dispositions and social interaction within the cultural community. Therefore, as members of a moral community they orient their action along shared principles. According to Schmoller, statistical regularity is thus a sign of overall moral progress: "Constancy [of observed moral behavior, A/N]" will be regarded as "the victory of the higher character-forming culture against the vagarious moods and inclinations of primitive people, - the victory of moral determination of will over changing sensual stimulation, the victory of spirit over matter"²⁶ (Schmoller 1871, 36). This quote underlines, that Schmoller regards the statistical regularity in observed moral behavior as an effect of the moral development of individuals within the framework of a progressing moral community. Schmoller assumes the existence of a moral ideal towards which all moral and cultural development continuously strives. In his essay on justice, Schmoller claims that contrary to classical political economists and their idea

²⁵ „Erst ein sittliches Gefühl, dann seine bessere Erkenntniß, seine Vorsätze, endlich zum Charakter gewordene feste Maximen sind bereit die Herrschaft des sittlichen Menschen über den natürlichen zu erhalten. Darin eben liegt seine wahre Freiheit“ (Schmoller 1871, 33).

²⁶ „Wir werden diese Constanz höher stellen, als den bunten Wechsel. Wir werden versucht sein, in ihr den Sieg der höheren, zur Charakterbildung heranreichenden Kultur gegenüber den wechselnden Launen und Neigungen roher Naturvölker zu sehen, - in ihr den Sieg sittlicher Willensbestimmung über die wechselnden sinnlichen Reize, den Sieg des Geistes über die Materie zu begrüßen“ (Schmoller 1871, 36).

of laws of nature (1881, 21), he does not make apriori normative assumptions. However, the idea Schmoller has about a moral ideal state itself contains a normative judgement. Myrdal ([1929]; 1932, 8) voices this criticism towards German ethical-historical economics; the considered economists do “not reject the definition of norms as a scientific task”. Schmoller criticizes those explanatory approaches that attribute the observed regularity primarily to physical causes. According to Schmoller, materialistic approaches are of little importance here; especially with regard to the culturally developed cultural societies, he believes to be observing at his time. In his eyes, spiritual or social causes are of superior importance for the present state of society. This idea shows that Schmoller is closer to Knapp’s notion of the research interest of moral statistics than Wagner is. Both Schmoller and Knapp emphasize that the investigations of moral behavior is concerned with normative decisions people make within a social or cultural surrounding. Note the contrast to Wagner, who beyond social influences also emphasizes physical causes of human action.

Herold (2019, 213-214) shows that Schmoller transferred his idea of the relationship between the individual and the cultural community to his later framework of research. According to Herold, Schmoller defined the investigation into emotions and natural dispositions of the human being as the basis for research in the social sciences: he demanded a psychological-anthropological foundation and thorough research into the development of motives guiding individual action. Herold asserts that Schmoller’s psychological-anthropological approach combined knowledge of the natural sciences, like a natural human disposition, with the study of social determinants of action. Therefore, it can be claimed that Schmoller also integrates an anthropological element into his explanations of moral behavior. However, Schmoller explicitly criticizes the approach of Quetelet and Wagner to infer human inclinations for a certain type of action from the frequencies observed in statistical studies: “The probability number now Quetelet and others, in an almost incomprehensible confusion, have made a psychological drive”²⁷ (Schmoller 1871, 29). He requires a deeper psychological examination and emphasized the historical conditionality of human inclinations to act in certain ways (Herold 2019, 212). Herold asserts that Schmoller understands social research as multi-levelled. On top of this foundation, Schmoller locates organizations: he considers for example families and companies. Institutions, which he perceives as abstract constructions, such as

²⁷ „Diese Wahrscheinlichkeitsziffer nun haben Quetelet und andere in einer fast unbegreiflichen Verirrung zu einem psychologischen Triebe gemacht“ (Schmoller 1871, 29).

legal relationships and market structures lie above the organizations (Herold 2019, 210-220). In this system, individuals who have a (biological) disposition to moral action develop moral principles through interaction in social groups or organizations. Social interaction takes place within the framework of abstract social institutions in which socially established norms manifest. These norms are also subject to a slow but continuous progression and the result of a historical process of human moral (or cultural) development.

IV. Conclusion

The comparison of the three economists' contributions to moral statistics reveals remarkably different views regarding the methodology of statistics as well as the reasons for the observed consistencies in aggregate moral behavior. Wagner promotes an approach of inferential statistics. From the observation of consistencies in specific data sets, he infers the operation of laws of nature that guide human behavior in general. Knapp considers statistics in the field of social sciences as a means of description. In his eyes, the purpose of statistical investigations concerning the formation and effect of ethical norms is to describe the peculiar characteristics of the social context in which shared norms emerge. According to Schmoller, quantitative data represent human behavior only superficially. Statistical studies can be helpful to expose real phenomena. However, in Schmoller's eyes, means of statistics are inappropriate to *explain* such phenomena. He promotes qualitative empirical studies.

Whereas Knapp, Wagner and Schmoller recognize the social impact on individual normative behavior, they differ in their views regarding the interplay of the individual and the society. While Wagner considers social norms and customs as external constant causes, Knapp and Schmoller claim that the social norms are only effective because they influence the development of individual moral principles and motives to act. Next to social factors, Wagner provides materialistic reasons for consistencies in human behavior. Knapp argues that although materialistic factors affect human actions in general, they do not significantly influence the type of actions that genuine moral statistics consider – individual normative actions. Normative or moral behavior, in Knapp's eyes, is a purely social phenomenon. Schmoller agrees that materialistic explanations are inappropriate to explain moral behavior. According to Schmoller, individual moral action means the ability to align one's own behavior to developed ethical principles. Knapp rejects anthropological arguments in moral statistical

studies. He criticizes Quetelet and Wagner who infer the existence of natural human inclinations to act in a certain way from the statistical data. In Knapp's eyes, the declaration of an average moral man ignores the plethora of possible individual motives to commit a certain action. Schmoller joins Knapp's concrete critique of Quetelet and Wagner. However, he also integrates an anthropological factor into his investigation of human moral behavior. According to Schmoller, the human being has a natural disposition to develop moral principles. However, Schmoller does not infer this notion from the quantitative statistical data of moral statistical studies but refers to psychological research.

As pointed out in the introduction, Knapp, Wagner and Schmoller published their contributions to moral statistics as young researchers. It would therefore be enriching for further research to investigate comprehensively if and how the arguments, Knapp, Wagner and Schmoller put forward, entered their later work or that of their successor. In this respect, it would also be interesting to examine how the three economists integrated their study on human moral behavior into their genuinely economic research.

While moral statistics aroused great interest in economics towards the middle of the 19th century and was referred to as a "fashion science", the engagement in moral statistics decreased towards the end of the 19th century. However, at the beginning of the 20th century there are still publications on moral statistics. Gottlieb Schnapper-Arndt (1908) already assigns moral statistics to the broader subject of social statistics²⁸. Furthermore, moral statistics was still being taught at German universities in the 1920s. Courses in "economic and moral statistics" and "population and moral statistics" for economists were held for example at Hamburg University until winter term 1927/28. At the beginning of the 20th century sociology constituted itself as a discipline independent of the economic science. It would be worthwhile to investigate how the different views on the social influence on human actions, developed in contributions to moral statistics, have been taken up in sociological theories.

²⁸ Schnapper-Arndt, Gottlieb (1908) *Sozialstatistik (Vorlesungen über Bevölkerungslehre, Wirtschafts und Moralstatistik)*. Leipzig: Klinkhardt.

References

- Böhme, Monika (1971) Die Moralstatistik. Ein Beitrag zur Geschichte der Quantifizierung in der Soziologie, dargestellt an den Werken Adolphe Quetelets und Alexander von Oettingens. In: Bog, Ingomar (Hrsg.) Neue Wirtschaftsgeschichte, Bd. 5. Köln, Wien: Böhlau Verlag.
- Desrosières, Alain ([1993] 2005) Die Politik der großen Zahlen. Eine Geschichte der statistischen Denkweise. Heidelberg: Springer.
- Hanel, Johannes (1997) Statistical Regularities, Freedom, and Social Policy. Wagner and Schmoller on Freedom under the Statistical Law of Large Numbers. Or Why Moral Statistics Precede Their Association for Social Reform. In: Backhaus, Jürgen G. (Hrsg.) *Essays on Social Security and Taxation. Gustav Schmoller and Adolph Wagner Reconsidered*. Marburg: Metropolis-Verlag.
- Herold, Jens (2019) Der junge Gustav Schmoller. Sozialwissenschaft und Liberalkonservatismus im 19. Jahrhundert. In: *Bürgertum Neue Folge. Studie zur Zivilgesellschaft*, Bd. 19. Göttingen: Vandenhoeck & Ruprecht.
- Knapp, Georg Friedrich ([1871] 1925) Die neueren Ansichten über Moralstatistik. In: *Einführung in einige der Hauptgebiete der Nationalökonomie*. München und Leipzig: Duncker & Humblot.
- Knapp, Georg Friedrich ([1872] 1925) Quetelet als Theoretiker. In: *Einführung in einige der Hauptgebiete der Nationalökonomie*. München und Leipzig: Duncker & Humblot.
- Knapp, Georg Friedrich (1905) Staatliche Theorie des Geldes. Leipzig: Duncker & Humblot.
- Schmoller, Gustav (1871) Ueber die Resultate der Bevölkerungs- und Moral-Statistik. In: *Sammlung gemeinverständlicher wissenschaftlicher Vorträge* (Ser. 6, 123): Berlin. Lüderitz.
- Schmoller, Gustav (1881): Die Gerechtigkeit in der Volkswirtschaft. In: *Jahrbuch für Gesetzgebung, Verwaltung und Volkswirtschaft im Deutschen Reich*, 5, pp. 19-54.
- Wagner, Adolph (1864) Die Gesetzmäßigkeit in den scheinbar willkürlichen menschlichen Handlungen vom Standpunkte der Statistik. Hamburg: Boyes & Geisler.

Vorlesungsverzeichnis der Rechts- und Staatswissenschaftlichen Fakultät der Hamburger
Universität, Wintersemester 1920/21 – Wintersemester 1927/28