



# Hermann Heinrich Gossen: a *Wirkungsgeschichte* of an ignored mathematical economist

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**Abstract** *Considers a Wirkungsgeschichte of Hermann Heinrich Gossen, focusing on the reactions of the three stars of the Marginal Revolution: William Stanley Jevons, Léon Walras and Carl Menger. Although Hermann Heinrich Gossen is today known as one of the forerunners of the Marginal Revolution, it was only in 1879 that Jevons mentioned him in the second edition of the Theory of Political Economy, which contributed greatly toward making Gossen's name known among English-speaking readers. Later, in 1885, Walras wrote a famous article in the Journal des Economistes, entitled "Un économiste inconnu: Hermann-Henri Gossen". Investigates a Wirkungsgeschichte of Gossen, an ignored German mathematical economist.*

## Introduction

Although Hermann Heinrich Gossen is today known as one of the forerunners of the Marginal Revolution, he remained unknown for a long time after the publication of his life's work, *Entwicklung der Gesetze des menschlichen Verkehrs und der daraus fließenden Regeln für menschliches Handeln* (1854). In fact, the rediscovery of his work took place 25 years after his death. He seemed to be working in complete isolation. He had no forerunners nor successors. In this paper we consider a *Wirkungsgeschichte* of this ignored economist, with special attention to the reactions of the three stars of the Marginal Revolution: William Stanley Jevons, Léon Walras and Carl Menger. Jevons, who learned about Gossen from his friend, Robert Adamson, wrote about him in the second edition of his *Theory of Political Economy*. According to Jevons, Adamson noticed the existence of Gossen's book by reading the *Theorie und Geschichte der National Oekonomie* (1858) by Julius Kautz.

Since this book is a natural starting point for our discussion, let us see what Kautz said in his 1858 book:

*Eine formelle Theorie und Philosophie des Genusses (und noch dazu auf mathematischer Grundlage!) [Kautz's exclamation] hat in jüngster Zeit Fr. [sic] Gossen in seinem Werke: Entwicklung der Gesetze des menschlichen Verkehrs 1854 (S. 1 bis 45 und sonst) zu liefern gestrebt. Manches Gute, aber freilich auch Breite enthält in dieser Beziehung Mischler's National=Oekonomie 1. S. 175-184 (Kautz, 1858, p. 9).*

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Recently, Baron [*sic*] Gossen tried to offer a formal theory and philosophy of pleasure (besides the mathematical foundation!) [Kautz's exclamation] in his work: 9 1854 (p. 1-45, etc.). In this relationship Mischler's National=Oekonomie 1 (pp. 175-84.) has many good points, and of course also breadth (author's translation).

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In this very simple comment we find two different characterizations of Gossenian economics. One is that it is based on the wants of consumers. As such, this book is oriented toward subjective value theory. In fact, it is almost Mengerian in nature, beginning with the sentence, "*Das menschliche Leben ist eine ununterbrochene Kette und Entwicklung von Bedürfnissen*" ("The human life is a continuous chain and development of needs") (Kautz, 1858, p. 2). Gossen was also understood in this context. Second, the above comment refers to the mathematical aspect of Gossen's work: see the parenthesis with exclamation mark. It is difficult to say which aspect most intrigued Adamson, Jevons and Walras; but if they were only interested in the first aspect, then they could rely on Mischler as well, whom Kautz mentioned in the above quote. As can be seen from the comment, he even held Mischler in higher estimation. This leads us to the conjecture that Adamson and Jevons were attracted to the second aspect of Gossenian economics. In August 1878 Adamson finally succeeded in getting a copy of Gossen's book (see Georgescu-Roegen, 1983, p. liv).

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Walras contacted Hermann Kortum, a professor of mathematics at Bonn University, and nephew of Gossen. Kortum sent Walras some information about Gossen's life, enabling Walras to write an article in the *Journal des Economistes*, entitled "*Un Economiste Inconnu: Hermann-Henri Gossen*" (1885). Although Walras recognized Gossen as an economist of the first rank, he asserted his own priority as well[1]. Walras also undertook a French translation of Gossen's work. However, this was never published by Walras himself[2].

Menger seemed rather indifferent to Gossen compared with the other two figures of the Marginal Revolution, which had much to do with his anti-mathematical inclination. After getting a copy of Gossen's work in 1886 (see Kauder, 1965, p. 82), Menger read it without enthusiasm[3]. Compared with the intense marginal notes to Roscher, Mill and Rau, showing his great interest in these economists, Menger did not read Gossen eagerly[4]. As Emil Kauder points out, an influence on Menger's Grundsätze is impossible, since Menger obtained a copy of Gossen's book only after the publication of his major works (see Kauder, 1965, pp. 81-2).

It is well known that Gossen was an important topic in the correspondence between Jevons and Walras, and also between Walras and Menger. In the paper we shall also examine those letters that are related to Gossen's work and life.

### Jevons and Gossen

As noted already in the introduction, Robert Adamson played an essential role in helping Jevons understand the basic tenets of Gossenian economics. In his short letter to Jevons dated April 20, 1879, Adamson noted the source of his knowledge of Gossen's work:

Your card has just reached me. The notice of or rather reference to Gossen's work was in Kautz, *Geschichte der National-Ökonomie*. If you wish, I shall send you pages etc. when I get home (Black, 1977, p. 52).

In his letter to Jevons later in April Adamson wrote about the second edition of Jevons's *Theory of Political Economy*. In this letter it is clear that Jevons had asked Adamson for his cooperation concerning Gossen. However, Adamson seemed rather reluctant. Here is an excerpt of his letter:

I am very glad to know that your new edition is so far advanced and am only sorry that it should have been out of my power to offer you any assistance, even in regard to Gossen's book. If you are printing anything like a full account of that work, you might let me see the proof of the passage (Black, 1977, p. 55).

The following letter shows that Jevons had already sent him a draft or perhaps a proof of the preface to *The Theory of Political Economy*. Since this letter is dated May 6, it is highly possible that Jevons had sent him the preface late in April or at the beginning of May:

Your preface I like very much and I think the account of Gossen's book is as good as could be given without entering a minute analysis of it. I have only had to note one or two slight misprints (Black, 1977, p. 60).

But two days later Adamson confessed his concern over the title page of Gossen's book:

Gossen calls himself on the title page of his book *Royal Prussian Government Assessor – Out of Employment*. I am puzzled with the last terms and shall ask Ward more definitely about them. So soon as I know I shall send you the exact translation for your preface (Black, 1977, pp. 61-2).

Adamson's puzzlement is not surprising. On the title page of Gossen's book is written "*von Hermann Heinrich Gossen, Königlich preußischem Regierungs-Assessor außer Dienst*". If the meaning was "Royal Prussian Government Assessor – out of employment", as in the above quote, this would not be ideal for those including Jevons and Adamson trying to make Gossen known in the English-speaking world. Adamson was puzzled, because he thought that Gossen was fired, which was possibly not too far from the truth. However, the expression, "*Königlich preußischem=Assessor außer Dienst*" should be translated as "Royal Prussian Government Assessor, retired", as in the preface to *The Theory of Political Economy*. Notwithstanding the fact that Gossen was forced to resign, Adamson's translation was not quite right[5].

Next we turn to the correspondence between Walras and Jevons, also with special attention to their opinions on Gossen. Below is a part of Walras's letter to Jevons dated 17 February 1879:

*J'ai réussi tout dernièrement à me procurer pour six semaines un exemplaire de l'ouvrage de Gossen que vous m'avez signalé, et j'ai trouvé ce livre si remarquable que j'ai voulu en garder la traduction que j'ai faite avec l'aide d'un de mes collègues et qui va être terminée sous peu de temps* (Black, 1977, p. 21).

Quite recently, I have succeeded in obtaining for six weeks a copy of Gossen's work which you have indicated. I found the book so remarkable that I decided to translate it, which I did with the help of one of my colleagues, and will be soon finished (author's translation).

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Walras wrote that he obtained a copy of Gossen's book for six weeks. In the letter he did not indicate how he succeeded in getting a copy, but later in an article in the *Journal des Economistes* he explained the route through which he managed to get one, and he also mentioned the role of Charles Secrétan, whose name does not appear above. The following is Jevons's answer from 21 February:

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I have decided to print the second edition of my "Theory of P.E." without waiting for the full bibliography, but I will put the list in the appendix and also give a full preface with references. My idea now is to produce a considerable volume with full references, descriptions and quotations from works on the math. method, also including translations of Cournot's and your works, and with the best abstract I can get of Gossen (Black, 1977, p. 22).

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As was often the case in his correspondence with Adamson, Jevons first discussed the second edition of his work. He wrote that he intended a translation of Cournot and Walras and also an abstract of Gossen's work. As Collison Black points out, "this idea was never carried into effect" (Black, 1977, p. 22, n. 3). In the second edition of *The Theory of Political Economy* we find no translations of Cournot or Walras nor the abstract to which Jevons referred. What he wrote was at best an "account of Gossen's book", as Adamson said in the above-mentioned letter, and an evaluation of Gossenian economics from his own perspective. Today no information exists as to whether Jevons really attempted translations of Cournot and Walras.

After a year or so Walras again wrote to Jevons, this time with a bit of new information on Gossen:

*De tous ces écrivains qui nous ont précédés, un seul, selon moi a eu vraiment un sentiment sûr et profond quoique imparfait du mouvement et de l'équilibre des forces économiques: c'est Gossen. Je suis parvenu tout dernièrement, à force de recherches, à me mettre en rapport avec un neveu à lui, professeur de mathématiques à l'Université de Bonn, le Dr. Hermann Kortum, qui m'a promis de me fournir des détails sur la vie de son oncle . . . Je publierai ma traduction de son livre, cell du vôtre (on n'a pas le droit d'abrégé des livres de cette importance) . . .* (Black, 1977, pp. 95-6).

Among all the writers who preceded us, only one person in my opinion – notwithstanding his imperfections – had really certain and profound sentiments of the movement and equilibrium of the economic forces: Gossen. Quite recently, with much research I was able to contact his nephew, professor of mathematics at Bonn University, Dr Hermann Kortum, who promised to furnish me with details of the life of his uncle. I shall translate his book as well as yours. (One does not have the right to abridge books of such importance . . .) (author's translation).

Walras said that among the forerunners of the new economic discourse Gossen was the best, a very high estimation indeed, which we also encounter later in his article in the *Journal des Economistes*. Second, he indicated that he contacted Hermann Kortum, a nephew of Gossen, who helped to gather biographical information on his uncle. Third, Walras said that he planned to publish a translation of Gossen's work as well as that of Jevons. Walras went as far as to say that books of such importance could not be abridged and the whole content had to be translated, a very polite statement to other economists indeed. This is interesting when we consider that Jevons told Walras that he intended to translate the latter's work. Do these facts show a warm friendship between

the two economists? It is possible, but I am inclined to the interpretation that they were both strategically trying to promote the new paradigm of the Marginal Revolution. In some of the letters of the three stars we encounter a very serious argument over who first discovered the new way of thinking in economics, but sometimes they also felt that it was better for them to cooperate to promote their work, at least for the time being.

Now we consider Jevons's response to Walras. After writing that he resigned his professorship of economics because of bad health, Jevons again mentioned Gossen:

In a former letter you told me you had learned some particulars of the life of Gossen. I wish that you would either publish these yourself or send me the facts that I may publish them in your name in some English journal (Black, 1977, p. 144).

Walras's letter intrigued Jevons. He too was eager to know the details of the ignored economist. He recommended Walras publish facts on Gossen and he was also prepared to do likewise in English journals. The latter part of the second sentence can be interpreted as an example of cooperation between the major figures of the Marginal Revolution. Jevons and Walras wanted to make it known that Gossen was an important player in the field of economic theory, thus presenting a united front against the anti-mathematical faction in the mainstream economics at that time. Concerning the methodology of economics, that is whether or not economics can be nearer to natural sciences by using mathematics, Jevons and Walras could unite in fighting their common enemies, whereas Menger certainly could not.

Finally, we examine the preface to the second edition of the *Theory of Political Economy*, and especially Jevons's comments on Gossen therein[6]. After explaining how Robert Adamson obtained a copy of Gossen's book, Jevons indicated two important contributions of Gossenian economics: that marginal utility decreases with the amount consumed, and the marginal condition for the maximization of utility. These two findings are described as follows by Jevons:

The natural law of pleasure is then clearly stated, somewhat as follows: *Increase of the same kind of consumption yields pleasure continuously diminishing up to the point of satiety* (italics by Jevons) (Jevons, 1879, p. xxxvi).

Hence he draws the practical conclusion that each person should so distribute his resources as to render the final increments of each pleasure-giving commodity of equal utility for him (Jevons, 1879, p. xxxvii).

Theoretically speaking, the second finding is much more important than the first, but Jevons – see the emphasis by Jevons himself – seemed to think quite the opposite. We know that students of the history of economics call these findings Gossen's first and second law respectively, thus paying homage to Gossen. Acknowledging his contribution this way did not prevent Jevons from seeing some weak points. The first of these points concerns the form of the utility functions Gossen posits in the *Entwicklung der Gesetze des menschlichen Verkehrs*. Jevons said:

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Instead of dealing, as Cournot and myself have done, with undertermined functions, and introducing the least possible amount of assumption, Gossen assumed, for the sake of simplicity, that economic functions follow a linear law, so that his curves of utility are generally taken as straight lines. This assumption enables him to work out a great quantity of precise formulas and tabular results, which fill many pages of the book. But, inasmuch as the functions of economic science are seldom or never really linear, and usually diverge very far from the straight line, I think that the symbolic and geometric illustrations and developments introduced by Gossen must for the most part be put down among the many products of misplaced ingenuity (Jevons, 1879, p. xxxix).

In modern jargon, the problem is whether the derivative of the utility function is linear or not. In Gossen's case, as Jevons pointed out in the above quote, the derivative of the utility function is taken to be linear, making calculations very easy even for those without a mastery of mathematics. It is arguably only because of mathematical simplicity that Gossen assumed these functions to be linear. Seen from this angle, Jevons's criticism is wide of the mark, and gives readers the wrong impression when he says that "this assumption enables him to work out a great quantity of precise formulas and tabular results". Gossen's assertions do not depend on the shape of the utility function, and specifically of the marginal utility function. To be sure, the theorems expounded in the *Entwicklung der Gesetze des menschlichen Verkehrs* are still valid even if we do not assume the functions to be linear.

### Walras and Gossen

In this section we examine the relationship between Walras and Gossen, with reference mainly to the correspondence between Walras and Kortum as well as the former's article in the *Journal des Economistes*[7]. By examining the letters between Walras and Kortum, we can gather the details of the exchange of opinions between the two concerning Gossen. The first letter from Walras to Kortum, dated February 21, 1880, begins with the following passage:

*Ayant appris tous récemment, après d'assez longues recherches, que vous étiez le neveu de feu M. Herman Heinrich Gossen, ancien assesseur du gouvernement prussien à Cologne, je prends la liberté de vous écrire pour vous demander s'il vous serait possible de me procurer un exemplaire de l'ouvrage de cet auteur . . .* (Jaffé, 1965a, p. 642).

Quite recently, after long research, I discovered that you are a nephew of the late Mr Hermann Heinrich Gossen, a former Prussian government assessor of Cologne. I dare to write you to ask whether it is possible to procure a copy of the work of this writer for me . . . (author's translation).

First, Walras asked Kortum whether it is possible to get a copy of Gossen's book through him. Perhaps Walras thought that Kortum still had copies of his uncle's life work. After explaining how he got to know the work and also how important it was for economic science, Walras said that he was planning a French translation of Gossen's work, one of the often repeated topics in Walras's correspondence with other economists:

*Mon désir serait de publier une traduction en français de l'Entwicklung des Gesetze des menschlichen Verkehrs de Gossen en accompagnant cette traduction d'une introduction sur la vie de l'auteur et sur la portée de son oeuvre. Pour cela, j'aurais besoin d'un exemplaire de l'ouvrage et de détails circonstanciés sur la carrière de l'auteur* (Jaffé, 1965a, p. 643).

I would like to publish a French translation of the *Entwicklung des Gesetze des menschlichen Verkehrs of Gossen*, accompanied with an introduction on the life of this writer and the importance of his work. For that, I need a copy of the work and every detail of the career of the writer (author's translation).

In the above quote Walras repeated once again his desire to obtain a copy of Gossen's work through Kortum as well as his intention to translate it into French. For this purpose he badly needed a curriculum vitae of the writer. This sudden letter from Switzerland pleased Kortum. Five days later he answered Walras in the following way:

*Ihr Brief von 21. d. M. hat mir und meiner Mutter, welche von allen Geschwistern meines unverheiratet gestorbenen Oheims H. Gossen allein noch lebt, eine herzliche Freude bereitet (Jaffé, 1965a, p. 644).*

Your letter of the 21st of this month pleased me and my mother very much. Among the sisters of my uncle, H. Gossen, dying unmarried, my mother is the only one still alive (author's translation).

As Kortum said in the letter, Walras's enquiry and especially his high estimation of Gossen's work made him and his mother, one of Gossen's sisters, very happy. Regarding the hope of getting biographical information on Gossen from Kortum, the latter wrote:

*Ich habe gefunden, dass ich nach so langer Zeit über manchen Punkt selbst Untersuchungen anstellen muss, um Ihnen zuverlässiges berichten zu können. Ich hoffe aber bald im Stande zu sein, das Versäumte nachzuholen (Jaffé, 1965a, p. 644).*

I have found that after such a long time I have to investigate myself many points to give you reliable information. I hope to be soon in a condition to make up for this neglect (author's translation).

So Walras had to wait – at least for a while – for Kortum to gather information on Gossen. In his letter Kortum was eager to know how Walras discovered his address. In fact, Walras's thorough research into Gossen was causing some annoyance to one of his relatives, as Kortum described as follows:

*Vielleicht ist eine uns bis jetzt unerklärliche Anfrage, welche ohne Angabe der Veranlassung im April vorigen Jahres von polizeilicher Seite an entferntere Verwandte von uns in Cöln gerichtet wurde, auf Ihre Anregung zurückzuführen (Jaffé, 1965a, p. 644).*

Perhaps an enquiry in April last year from the police without stating the motivation, that remains inexplicable to us to this day, made to one of our far relatives in Cologne, can be attributed to your proposal (author's translation).

In the next letter to Kortum Walras indicated how he had researched Gossen and how he got Kortum's address:

*La personne qui m'a donné votre nom et votre adresse est le baron de Manteuffel avec lequel j'ai été mis en rapport ici il y un an par mon collègue et ami M. de Senarclens Professeur de droit romain (Jaffé, 1965a, p. 650).*

The person who gave me your name and your address is Baron Manteuffel who was introduced to me a year ago by my colleague and my friend, Mr de Senarclens, professor of Roman law (author's translation).

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Thus it was Freiherr Otto von Manteuffel who gave information on Kortum, which was made possible by the cooperation of Walras's colleague, Arthur de Senarclens (see Jaffé, 1965a, p. 650, n. 2, 3). He had introduced Walras to Manteuffel the previous year.

As we know already, Walras's first letter to Kortum is dated February 21, 1880. Perhaps, irritated by the delay, Walras was longing for Kortum's answer. But at last it came:

*Endlich bin ich in der Lage, Ihnen auf den beiliegenden Blättern die gewünschten Notizen über meinen Onkel H. Gossen übersenden zu können* (Jaffé, 1965a, p. 708).

I am finally in a condition to be able to send you the notes on my uncle, H. Gossen, which you need, on the enclosed sheets (author's translation).

Since this letter is dated 29 June 1881, Walras had to wait for more than 16 months for biographical information on Gossen. But it was worthwhile for Walras to wait for the answer. The letter brought some new information on Gossen, concerning his unpublished drafts. In Kortum's own words:

*Aus der Zeit nach dem Erscheinen des Buches finden sich unter dem Nachlass noch zwei kleinere Manuskripte volkswirtschaftlichen Inhalts. Das eine, ohne Überschrift, scheint mir eine ausführliche, vermutlich nie gedruckte, Kritik von Rau's System der Nationalökonomie; das andere ist ein bis in kleinste Details ausgearbeiteter Entwurf zu einer in Form der Aktien-Gesellschaft zu gründenden Darlehns-Casse* (Jaffé, 1965a, p. 709).

Among the unpublished papers, there are two small manuscripts concerning economics, written after the publication of the book. The one, without signature, seems to be a detailed, perhaps never published, critique of Rau's System of Economics. The other is a plan of the credit bank in the form of a limited liability company, which was worked out down to the smallest detail (author's translation).

Kortum mentioned two manuscripts that were available to him: one is about Rau's economics and the other concerns Gossen's plan of a savings institution. The first manuscript might be of interest to those historians of economic thought eager to learn about Gossen's predecessors. Rau's textbook was very famous at least in German-speaking areas, acquiring many readers including Carl Menger, who read it thoroughly in the 1860s. Since Gossen seems to be rather isolated in the history of economic thought, this manuscript allows readers to investigate the origins of Gossenian economics, including the latter's relationships to Rau. The second manuscript is perhaps related to Gossen's interest in the insurance business. Gossen, with his friend, founded an insurance company, which was under his direction in 1849. He later gave up the management of the company (Georgescu-Roegen, 1983, p. 1).

It took three years for Walras to complete his article on Gossen. In the following letter to Kortum he reported that he had sent a manuscript to the editor of the *Journal des Economistes*.

*J'ai le plaisir de vous annoncer qu'ayant envoyé il y a quelques jours à M. de Molinari, Rédacteur en Chef du Journal des Economistes à Paris mon travail sur votre oncle sous la forme d'un article intitulé: "Un économiste inconnu: Hermann-Henri Gossen", j'ai reçu de lui une lettre par laquelle il me promet de le publier dès qu'il aura de la place libre* (Jaffé, 1965b, p. 15).

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I am pleased to announce that several days ago I sent my work on your uncle entitled, “An unknown economist: Hermann-Henri Gossen” to Mr Molinari in Paris, the editor in chief of the *Journal des Economistes*. I received a letter from him in which he promised to publish it as soon as there is a place for it (author’s translation).

As we can see, the editor of the journal promised Walras he would publish his article when room became available. One year after sending Kortum the above letter, Walras received the following letter, obviously written to thank him for sending his published article on Gossen. The letter is filled with Kortum’s heartfelt thanks for making his uncle’s name known to the academic world which had totally ignored Gossen during his lifetime, and also his regret that the completely neglected economist could not enjoy the reputation himself. This is perhaps one of the most beautiful letters which we find in the *Correspondence of Léon Walras and Related Papers*, edited by William Jaffé. At the same time, substantially – it seems to me – this was the end of their correspondence:

*Vor einigen Tagen habe ich die Nummer des Journal des Economistes mit Ihrem Artikel über meinen verstorbenen Onkel Gossen erhalten. Mutter und ich haben Ihre Arbeit mit getheilten Gefühlen gelesen: mit dem aufrichtigsten, wärmsten Dank für Sie, der dem Verstorbenen in so liebenswürdiger, loyaler und selbstlosen Weise (Sie treffen mit ihm nicht nur in den Ideen, sondern auch in den Charaktereigenschaften zusammen) zur späten Anerkennung geholfen hat, und mit der wehmüthigen Empfindung, dass ihm selbst die Freude dieser Anerkennung, welche ihn glücklich gemacht haben würde, nicht zutheil geworden ist (Jaffé, 1965b, p. 46).*

Several days ago I received the number of the *Journal des Economistes* with your article on my late Uncle Gossen. My mother and I have read your work with ambivalent feelings: *with warmest thanks to you*, who, in such a friendly, loyal and selfless way, have helped the dead to obtain recognition (you resemble him not only in your ideas, but also in character) but also with the sad feeling that he could not share this pleasure of recognition, which would have made him happy (author’s translation).

Next we turn to Walras’s article. In this article in the *Journal des Economistes* Walras introduced Gossen’s work as a book written by a great but completely ignored economist, at least at the time when Walras was writing. In Walras’s own words:

*Pour ma part, j’irai plus loin et je dirai que, parmi les exemples également nombreux d’injustice scientifique, il n’y en a pas d’aussi criant que celui de l’ingratitude témoignée à Gossen. Il s’agit d’un homme qui a passé complètement inaperçu et qui est, à mon sens, un des plus remarquables économistes qui aient existé (Walras, 1896, 1990, p. 314).*

For my part, I would go much further and would like to say that among similar examples of a number of scientific injustices, there has not been the same ingratitude shown to Gossen. The matter is about a person who died completely unnoticed and is in my view one of the most remarkable economists who ever existed (author’s translation).

In this quote Walras described Gossen as one of the most remarkable economists, possibly the highest compliment which one can expect from someone who is engaged in the same line. Walras termed Gossen’s neglect a case of scientific injustice, also using the word “*criant*”. This means that researchers did not pay due attention to Gossen. After mentioning a letter of Jevons to Walras from 15 September 1878, Walras went on to the former’s comments in the second edition of *The Theory of Political Economy*, published in 1879.

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As readers can tell, the following summary is almost completely based on Jevons's explanation in the *Theory of Political Economy*:

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*Un an après, c'est-à-dire dans l'été de 1879, M. Jevons publiait la seconde édition de sa Theory of Political Economy et, dans une préface inédite, il donnait des détails circonstanciés sur la manière dont l'ouvrage de Gossen avait été découvert et sur son contenu. M. Robert Adamson l'avait trouvé, quelques années auparavant, mentionné dans la Theorie und Geschichte der National Oekonomik de Kautz, ouvrage paru en 1858, comme contenant un théorie du plaisir et de la peine. Il l'avait vainement demandé par la publicité, et, en août 1878 seulement, l'ayant trouvé par hasard dans le catalogue d'un libraire allemand, il avait réussi à l'acquérir (Walras, 1896, 1990, p. 315)*

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A year later, that is in the summer 1879, Mr Jevons published the second edition of his *Theory of Political Economy*. In the preface he gave detailed information on how the work of Gossen was discovered and on its content. Several years before, Mr Robert Adamson found it mentioned in the *Theorie und Geschichte der National Oekonomik* of Kautz, published in 1858, as a work consisting of a theory of pleasure and pain. He asked for it by posting an advertisement, but in vain. In August 1878 he found it in the catalogue of a German bookstore by chance and succeeded in obtaining it (author's translation).

Walras refers to the much enlarged preface to the second edition of Jevons's work and the latter's comments on Gossen. As already stated, Jevons made clear that Robert Adamson had helped him to get information about Gossen. Walras explained the process by which Adamson had noticed the existence of Gossen's book as well as how he had finally succeeded in getting a copy of the *Entwicklung der Gesetze des menschlichen Verkehrs*. All in all, the above description is a reproduction of what Jevons wrote in the second preface to his work.

After quoting Jevons's comments at length, Walras explained how he himself had found Gossen's rare book. Since this process is interesting and also complicated, Walras's explanation deserves to be quoted at full length:

*Mon premier soin fut de chercher un exemplaire de l'ouvrage de Gossen; J'eus beaucoup de peine à me le procurer. MM. Vieweg et fils, éditeurs à Brunswick, me firent savoir que Gossen avait vécu vers 1850 à Cologne . . . En même temps que je faisais chercher l'ouvrage en librairie, je m'adressais à diverses bibliothèques publiques. Enfin, M. Halm, bibliothécaire à Munich, l'envoya à son beau-frère, mon collègue et ami M. Charles Secrétan, avec qui j'en pus faire, dans le premières semaines de 1879, une lecture attentive et une traduction complète (Walras, 1896, 1990, p. 318).*

My first interest was to look for a copy of the work of Gossen; I made great efforts to obtain it. Vieweg and Son, a publishing company in Braunschweig, informed me that Gossen had been in Cologne around 1850. At the same time that I was looking for the book in bookstores, I made enquiries at various public libraries. At last Mr Halm, a librarian in Munich sent it to his brother-in-law, Mr Charles Secrétan, my friend and colleague. With him I read the book attentively and made a translation in the first weeks of 1879 (author's translation).

Walras made great efforts to obtain a copy of Gossen's life work. From the publishing company of the *Entwicklung der Gesetze des menschlichen Verkehrs* he got the information that Gossen was in Cologne around 1850. At the same time he tried very hard to obtain a copy, including a search in various public libraries, which finally ended in a success: Halm, a librarian in Munich, sent Charles Secrétan, his brother-in-law, a copy. With the help of Secrétan

Walras translated Gossen's work into French during the first few weeks of 1879. As we know from Walras's letter to Jevons, he had access to a copy of Gossen's book for six weeks. Putting the information together, this means that Walras accomplished a translation in six weeks, showing how intensively he and Secrétan worked. Gossen's book is 277 pages long and it would not be an easy task to translate it within six weeks, even supposing complete mastery of German.

### Menger and Gossen

It was through Johan Baron d'Aulnis de Bourouill that Walras learned of Menger. In this section we begin by considering how d'Aulnis explained the essence of the Mengerian economics to Walras[8]. Below is d'Aulnis's letter to Walras of 22 June 1883, shortly after Menger had published his work on the methodology of economics:

*Je fis connaissance de ces jours avec un livre nouveau et excellent de M. Carl Menger professeur de l'Université de Vienne, sur la méthode des études sociales, notamment l'écon. pol. Leipzig, 1883. Répondant à une correspondance avec lui, il m'envoya son livre: Grundsätze der Volkswirtschaftslehre (1872[sic], Vienne, Dr Carl Menger), un livre de théorie pure avec des idées de mathématiques! [author's exclamation] (comparaison de quantités distinctes) et arrivant par là à la doctrine sur le taux d'échange. Le livre est bien intéressant (Jaffé, 1965a, p. 766).*

Recently I got to know a new, excellent book by Mr *Carl Menger*, professor at the University of Vienna, on the method of social sciences, especially political economy, Leipzig, 1883. In a correspondence with him he sent me his book: *Grundsätze der Volkswirtschaftslehre* (1872[sic], Vienna, Dr Carl Menger), a book of *pure theory* with mathematical ideas! [author's exclamation] (comparison of distinct quantities), arriving at the doctrine of the rate of exchange. The book is quite interesting (author's translation).

This letter is important in that it conveyed new information on the Austrian economist to Walras, and also because of d'Aulnis's characterization of the *Grundsätze der Volkswirtschaftslehre*. D'Aulnis said clearly that it was based on mathematical ideas. In what sense is it possible to say that Menger's economics is based on mathematical ideas? It is certain that the Mengerian economics is made possible by extensively using numerical examples. Consider the famous Mengerian table showing the maximization logic of a consumer. This table consists of numerical examples. Or think about his price theory, which again consists of numerical examples. Thus it is not completely wrong to say that the Mengerian economics is based on mathematical ideas. Nevertheless, we all know that Menger did not advocate using mathematics in economics; and if we define mathematical ideas in the stricter sense to mean mathematical formulations, Menger was, to be sure, no friend to this methodology.

That d'Aulnis was serious is evident in the following passage:

*Comme il est en train de préparer une nouvelle édition de son livre, nous pouvons espérer qu'il rendra la méthode mathématique un peu plus populaire en Allemagne (Jaffé, 1965a, p. 766).*

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Since he is in the process of preparing a new edition of his book, we can expect that he will render the mathematical method a little bit more popular in Germany (author's translation).

Gossen: ignored  
mathematical  
economist

D'Aulnis mentioned here a new edition of the *Grundsätze*, which was in fact published only after the death of Menger. Interestingly enough, d'Aulnis hoped that through this new edition the mathematical method would be much better accepted in Germany. This evaluation is, at best, quite wide of the mark. Who could expect Menger to use more formal mathematical models in the second edition of his *Grundsätze*, after one reads his correspondence with Walras?

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At any rate this letter was a first step for Walras to get information on Menger. It is quite possible that the above description of the Mengerian economics interested Walras, who sought for someone who shared the same methodology. After thanking Walras for sending a copy of the "*théorie mathématique de la richesse sociale*", Menger confessed that he was not a supporter of the mathematical method in economics[9]. Using terminologies such as "empirical laws" and "exact laws", which remind us of the *Untersuchungen* published just before this letter, Menger tried to show that mathematics was not an all-purpose tool in economics:

*Allerdings gehöre ich nicht zu den eigentlichen Anhängern der mathematischen Methode der Behandlung unserer Wissenschaft. Ich bin nämlich der Meinung, dass die mathematische Methode der Hauptsache nach eine solche der Darstellung, der Demonstration und nicht der Forschung ist. Jedes nationalökonomisches Gesetz, ob dasselbe, wahr oder unwahr, ein bloss empirisches oder exactes, ein Gesetz der historischen Entwicklung oder der grossen Zahlen ist u. s. f. lässt sich nämlich in mathematische Formeln kleiden, oder aber durch graphische Darstellungen demonstrieren. Dergleichen ist für manche Probleme unserer Wissenschaft sehr nützlich, berührt indess das Wesen der Forschung nicht. Nur in sehr wenigen Fällen, in jenen nämlich, in welchen es sich um die Bestimmung reiner Grössenverhältnisse handelt, vermag die Mathematik als solche, uns zu neuen Ergebnissen der Forschung zu führen; aber auch in diesen Fällen ist die Mathematik keine Methode, sondern nur eine Hilfswissenschaft der Polit. Oekonomie (Jaffé, 1965a, p. 768).*

However, I do not belong to the real supporters of the mathematical method of our science. I am of the opinion that mathematical method is chiefly a method of *description* and of *demonstration*, but not method of research. Whether it is true or untrue, or whether it is simply an empirical law or an exact law, or whether it is a law of historical development or the law of large numbers, etc. every economic law can be *dressed* in mathematical formulae or *demonstrated* by using graphical description. Such a thing is very useful; however it does not touch the essence of research. Only in very few cases, namely in cases where the matter is a determination of purely quantitative relations, can mathematical method *as such* lead to new results of research. Yet also in these cases mathematics is not a method, but only a complementary science of political economy (author's translation).

First, Menger asserted that mathematical method served only as a means of demonstration, but that it was not a method of research. In the *Untersuchungen* he classified the methodology of economics under "empirical laws" and "exact laws". Mathematical economics had not been given an independent position in the methodology of economics in the *Untersuchungen*, a viewpoint he repeated in the above letter to Walras. Economic laws, Menger said, can be described by using mathematical formulations and graphical expositions. Menger agrees with mathematical economists that mathematical method can lead to new

results regarding quantities, but not beyond that. At best the new method can only help economists to solve economic problems. Menger's viewpoint is clear. When dealing with quantitative analysis, mathematics might be of some help to economists. Also in this case Menger refused to accept that there is a such thing which can be called the mathematical method. The above quote implies that for Menger economic science is something quite other than that which mathematical economists think. For mathematical economists the main target of economics is quantitative analysis, but Menger has something different in mind.

In the latter part of the letter Menger gave some information about books written using mathematics[10]. One has to pay attention to the fact that Menger referred to Gossen in this letter:

*Da Sie sich, verehrter Herr College, für die mathematische Methode sehr interessieren, dürfte es Ihnen vielleicht von Werte sein, zu erfahren, dass ausser Cournot u. Gossen u. Jevons eine lange Reihe nationalökonomischer Schriftsteller, die ich bei Ihnen nicht citirt finde, dieser Methode bereits vor langem gefolgt sind (Jaffé, 1965a, p. 768).*

My honourable gentleman, since you are greatly interested in mathematical method, it might be important for you to know that besides Cournot, Gossen and Jevons, a long series of writers of economics whom you did not cite followed this method for a long time (author's translation).

After the above-quoted passage Menger mentioned seven writers who might be of interest to Walras:

N. F. Canard, *Principes d'Economie Politique*, Paris, 1801.

C. Kröncke, *Das Steuerwesen nach seiner Natur und seinen Wirkungen untersucht*, Darmstadt und Giessen, 1804.

Graf Georg von Buquoy, *Die Theorie der Nationalwirtschaft nach einem neuen Plane und nach mehreren eigenen Ansichten dargestellt*, Leipzig, 1815.

Karl Heinrich Rau, *Grundsätze der Volkswirtschaftslehre*, 7, Ausgabe, Leipzig und Heidelberg, 1863.

Francesco Fuoco, *Saggi Economici II*, Pisa, 1827.

Hans von Mangoldt, *Grundriss der Volkswirtschaftslehre*, Stuttgart, 1863.

I. H. von Thünen, *Der isolirte Staat, Rostock II 1842-50*, 2. Auflage (Jaffé, 1965a, p. 769).

Of the seven works referred to above, Mangoldt and Thünen are well-known examples of mathematical economists in the German-speaking areas in the nineteenth century. Menger read Rau's textbook very eagerly in the 1860s, as shown by the marginal notes transcribed by Emil Kauder. Interestingly, Menger commented on the work, paying special attention to the fact that Rau had already used a kind of price curve in the appendix. It is highly possible that Menger was one of the first who noticed the existence of the price curve in Rau's work. Canard, at the top of the list, is the only writer mentioned from the French-speaking areas. Compared with these works, Kröncke, Buquoy and Fuoco are minor figures in the history of economic thought.

Since this letter articulates substantial criticism of mathematical economics, Walras had to take up his pen to defend his case. But Walras seemed to understand the background of the *Methodenstreit* as well as Menger's position in this quarrel when he wrote:

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*Nous nous sommes évidemment posé le même problème, Monsieur; et nous avons évidemment entrepris de le résoudre par la même méthode, c'est à dire par la méthode rationnelle ... très opposée au courant de pur empirisme qui règne actuellement dans l'économie politique allemande (Jaffé, 1965a, p. 771).*

Sir, we have evidently posed the same problem and we have evidently tried to solve it using the same method, that is by using the rational method, quite opposite to the pure empiricism which actually dominates German political economy (author's translation).

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mathematical  
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Here Walras tried to show that they shared a common methodology which he called the rational method, forming a striking contrast with the prevailing methodology of German economics at that time. We have no information as to whether or not Walras read the *Untersuchungen*, but somehow he knew that the empirical method was dominant in Germany in the 1880s. In the above quote Walras emphasised that he and Menger were friends to the rational method, without further explaining what it meant. However:

*J'avoue que je ne comprends pas bien comment la méthode mathématique de recherche ne serait pas la méthode mathématique d'exposition et réciproquement. Mais vous paraissez accorder que la méthode mathématique est une méthode de recherche quand il s'agit de déterminer des rapports quantitatifs (Jaffé, 1965a, p. 771).*

I admit that I do not really understand why the mathematical method of research is not the mathematical method of exposition and vice versa. You would admit, however, that the mathematical method is a method of research when it comes to the determination of quantitative relations (author's translation).

Walras was confident that mathematical exposition was nothing more than mathematical method. Furthermore, he tried to persuade Menger, saying that Menger himself would admit that mathematical method is a method of research when dealing with quantities. Concerning these points Walras and Menger were diametrically opposed. As seen from the above letter to Walras, Menger adhered to the opinion that mathematical method and mathematical exposition using graphs, etc. were two different things which could not be confused with each other. Also, regarding quantitative relations between economic variables, he refused to call a mathematical procedure a method. To repeat, for Menger, there were only two methods in economics, the exact method and the empirical method, excluding any other methods from consideration.

Finally, Walras mentioned the seven works which Menger had given for reference. In a postscript to this letter, he wrote:

*Je connaissais de nom tous les ouvrages d'application des mathématiques à l'économie politique que vous m'indiquez; mais il y en a plusieurs que je n'ai pas lus (Jaffé, 1965a, p. 773).*

I know all the names of the works with application of mathematics to political economy which you indicated; but there are some which I have not read (author's translation).

Certainly, Walras had read Canard. But of the other six books, we have no evidence as to whether he had read them or not, and if so to what extent. Since most of these were written in German, it was difficult for Walras to read them thoroughly without any help.

The next letter from Menger to Walras is a long one and deserves a detailed treatment. As can be seen from the above letter, Walras tried to convince Menger that they shared the same methodology, which he called the rational method. Yet, Menger rejected this offer as follows:

*Nun bin ich tatsächlich der Meinung, dass die in der sogenannten reinen Nationalökonomie zu verfolgende Methode nicht schlechtweg die mathematische, ja auch nicht schlechtweg die rationelle genannt werden könne. Wir untersuchen doch nicht nur Grössenverhältnisse, sondern auch das WESEN der volkswirtschaftlichen Erscheinungen (Jaffé, 1965b, p. 3).*

Now I am in fact of the opinion that the method to follow in the so-called pure economics cannot be called *mathematical* nor *rational*. We investigate not only quantitative relationships but also the ESSENCE of economic phenomena (author's translation).

As in the former letter to Walras, Menger was obviously against the mathematical method. Furthermore, he refused to admit a rational method in economic science, thus rejecting Walras's effort to compromise between them. Still another point is the newly-introduced terminology, "*analytisch-synthetisch*", or "*analytisch-compositiv*". Using an example of price theory, Menger tried to explain what it meant. Let us endeavour to understand his point:

*Wollen wir zu der Erkenntniss der Gesetze gelangen, welche den Austausch der Güter beherrschen, so ist es nötig, dass wir zunächst auf die Motive zurückgehen welche die Menschen beim Austausche der Güter leiten, auf die von dem Willen der Tauschenden unabhängigen Tatsachen, welche mit dem Austausche der Güter in ursächlichem Zusammenhange stehen. Wir müssen zurückgehen auf die Bedürfnisse der Menschen, die Bedeutung, welche die Befriedigung der Bedürfnisse für diese letztern hat, auf die Quantitäten der einzelnen Güter welche sich in dem Besitze der einzelnen wirtschaftenden Subjecte befinden, auf die subjective Bedeutung (den subjectiven Wert), welche concrete Güterquantitäten für die einzelnen wirtschaftenden Subjecte haben u. s. f. Mit einem Worte wir müssen zunächst zu den einfachsten von dem menschlichen Willen unabhängigen Tatsachen zurückgehen, welche die Menschen zum Austausche der Güter veranlassen und sie bei diesem Geschäfte beeinflussen (Jaffé, 1965b, p. 4).*

If we would like to arrive at an understanding of the laws which dominate the exchange of goods, then it is necessary that we first of all go back to the motives which lead people in the exchange; and to the facts which are independent of wills of the exchange bodies, standing in the causal relation with the exchange of goods. We must go back to human needs, the meaning which the satisfaction of needs has for the human; to the quantities of each good which are in the possession in each economic subject; and to the subjective meaning (subjective value) which concrete quantities of goods have for each economic subject, etc. In a word we must first of all go back to the simplest facts which are independent of human wills, leading people to the exchange of goods and are influential therein (author's translation).

Obviously, this account is based on Menger's methodology. As we see in the last part of the quote, we have to reduce economic phenomena to human wants, which constitute their simplest elements. Nowhere in the quote did he explain why human wants constitute the simplest elements of the economy. Nor can we find an explanation as to why economists have to turn to each subject to grasp the economic phenomena. The same can be said of the *Grundsätze* as well as the *Untersuchungen*. Thus his analytical method, as explained above, is *de facto* closely related to methodological individualism, without giving account

of the necessity of this combination. After the first stage, researchers are expected to turn to the second part, that is the synthetic or composite part. In this stage researchers should try to grasp the exchange phenomenon by relating it to the efforts of economic man to obtain higher satisfaction.

This methodology has its root in the *Grundsätze*. In the preface to the first edition, his account runs briefly as follows:

*Wir waren in dem Nachfolgenden bemüht, die complicirten Erscheinungen der menschlichen Wirthschaft auf ihre einfachsten, der sicheren Beobachtung noch zugänglichen Elemente zurückzuführen, an diese letztern das ihrer Natur entsprechende Mass zu legen und mit Festhaltung desselben wieder zu untersuchen, wie sich die complicirteren wirthschaftlichen Erscheinungen aus ihren Elementen gesetzmässig entwickeln* (Menger, 1871, 1968, VII).

In what follows I have endeavoured to reduce the complex phenomena of human economic activity to the simplest elements that can still be subjected to accurate observation, to apply to these elements the measure corresponding to their nature, and constantly adhering to this measure, to investigate the manner in which the more complex economic phenomena evolve from their elements according to definite principles (Menger, 1871, 1950, pp. 46-7).

Although he wrote about the simplest elements of the human economy, he never referred to the details of these elements. It is possible that he had already developed a kind of methodological individualism as well as the intention to relate it to the simplest elements of the economy, as we know from the detailed description of the economic agents in the text. Yet, in the preface, we find no explicit comments from Menger concerning this point. Furthermore, in the above quote from the *Grundsätze*, one finds a contrast between the simplest elements and the complex phenomena of human economy. The word “complex”, cannot be found in the letter.

As can be expected, a much more detailed account can be found in the *Untersuchungen*:

*Der Weg, auf welchem die theoretische Forschung zu dem obigen Ziele gelangt, ein Weg, wesentlich verschieden von Bacon's empirisch-realistischer Induction, ist aber der folgende: Sie sucht die einfachsten Elemente alles Realen zu ergründen, Elemente, welche, eben weil sie die einfachsten sind, streng typisch gedacht werden müssen. Sie strebt nach der Feststellung dieser Elemente auf dem Wege einer nur zum Theile empirisch-realistischen Analyse, d. i. ohne Rücksicht darauf, ob dieselben in der Wirklichkeit als selbständige Erscheinungen vorhanden, ja selbst ohne Rücksicht darauf, ob sie ihrer vollen Reinheit überhaupt selbständig darstellbar sind* (Menger, 1883, 1969, pp. 40-1).

But the way by which theoretical research arrives at the above goal, a way essentially different from Bacon's empirical-realistic induction, is the following: it seeks to ascertain the *simplest elements* of everthing real, elements which must be thought of as strictly typical just because they are the simplest. It strives for the establishment of these elements by way of an only partially empirical-realistic analysis, i.e. without considering whether these in reality are present as *independent* phenomena; indeed, even without considering whether they can at all be presented independently in their full purity (Menger, 1883, 1985, p. 60).

Here is a full account of the way by which it is possible to reach exact laws. The expression, “the simplest elements” is common to the *Grundsätze*, *Untersuchungen*, and the letter to Walras. In the above quote this method contrasts well with “empirical-realistic induction”. In the *Grundsätze* Menger



was of the opinion that the simplest elements could be found by close observation by researchers, thus trying to base these elements on reality. In the *Untersuchungen* he took a completely different approach. He emphasised that the effort to relate these elements to reality was in vain. They were not expected to exist in reality in their pure forms. In addition he went on to explain the concrete image of the simplest elements:

*Die ursprünglichsten Factoren der menschlichen Wirthschaft sind die Bedürfnisse, die den Menschen unmittelbar von der Natur dargebotenen Güter . . . und das Streben nach möglichst vollständiger Befriedigung der Bedürfnisse . . .* (Menger, 1883, 1969, p. 45).

The most original factors of human economy are the needs, the goods offered directly to humans by nature . . . and the desire for the most complete satisfaction of needs possible (Menger, 1883, 1985, p. 63).

Putting these two quotes from the *Untersuchungen* together, we know the background of his assertion in the letter. Menger's assertion in the letter was written using almost the same vocabulary as in the *Untersuchungen*, I am certain that the Mengerian terminology, "*analytisch-synthetisch*", or "*analytisch-compositiv*", can be understood without any recourse to Kantian philosophy; the assertion only reflects his message in the *Untersuchungen*.

Now we must turn to Menger's relation to Gossen, the main topic of this section. In his letter to Walras, dated January 27, 1887[11], Menger, after thanking Walras for sending him *Théorie de la Monnaie*, mentioned Gossen in the following way:

*Auf Gossen wurde ich bereits von Jean d'Aulnis aufmerksam gemacht . . . Es besteht, wie ich festgestellt habe, nur in einigen Punkten, nicht aber in den entscheidenden Fragen zwischen uns Übereinstimmung, bez. Ähnlichkeit der Auffassung. Ich werde in der demnächst erscheinenden neuen Auflage meiner Grundsätze dies klartstellen und den Verdiensten Gossen's nach jeder Rücksicht Rechnung zu tragen suchen* (Jaffé, 1965b, p. 176).

Jean d'Aulnis has already called my attention to Gossen. As I found out, there is some correspondence or similarity of views between us on some points, but not concerning the decisive questions. I shall make this clear in the new edition of my *Grundsätze* which will appear soon and try to appreciate Gossen's contribution from every point (author's translation).

The letter shows, first of all, that Menger got information on Gossen from d'Aulnis, a Dutch economist, with whom Jevons and Walras also corresponded. Second, Menger denied that there were essential similarities between him and Gossen, saying that their points of view were not the same concerning the decisive questions. Menger bought a copy of Gossen's work in 1886, prior to the writing of this letter. In the meantime he had a chance to glance over the book. Third, he told Walras that he was planning to publish the second edition of the *Grundsätze*, in which readers would find a detailed explanation of Gossen's contributions. Although he used the expression "soon", we know that this task was never accomplished.

This comprises almost all that exists on the subject in the correspondence between Menger and Walras. Menger did indeed mention Gossen in his published works, as we show in the following. In his review article in the

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*Handbuch der politischen Oekonomie* edited by Gustav Schönberg, Menger commented on the various articles including those written by Schönberg himself[12]. After the comments his methodological arguments began. He discussed the often repeated classification of empirical and exact laws as well as the importance of the latter in economic science. Then almost at the end of the review article one finds the following comment on the new direction of the “exact national economy”, in which Menger mentioned Gossen *en passant*:

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*Dann wird aber auch die Zeit kommen, wo die so hingebungsvollen Bestrebungen der Bearbeiter der exacten Nationalökonomie: eines Boehm, Walras, Wieser, Pierson, Marshall, Sidgwick, eines Gossen, Jevons und Anderer zu Ehren kommen und jene Beachtung finden werden, welche so ernsten, auf die Reform der reinen Theorie hinzielenden Forschungen gebührt* (Menger, 1887, 1970, p. 31).

Then the time will come, when serious research on the reform of pure theory by devoted practitioners of exact national economy, Boehm, Walras, Wieser, Pierson, Marshall, Sidgwick, Gossen, Jevons and others will be deservedly given honour and notice (author's translation).

In Menger's opinion all of the writers mentioned above were striving for a new direction in economics, which he called “exact national economy”. Böhm-Bawerk and Friedrich von Wieser were pupils of Menger. They did not sympathize with the mathematical method. As we know already, Walras and Jevons were trying to make the importance of the mathematical method understood in academic circles. In retrospect Gossen also belonged to this group. Yet, in the above quote, all of these were grouped together. For Menger it was still necessary to defend this direction against the German Historical School, but he never mentioned the mathematical method in economics in his published works.

Menger's indifference to Gossen can be attributed to the following: first, he was a man of high social prestige and did not share Walras's or Jevons's sympathy with Gossen. Walras tried to get a post in France, but in vain. He was substantially excluded from French academism. Jevons was in no better position. He continued to feel resentment against the English Classical School, represented by Ricardo and Mill. Menger was a man of the establishment in the true sense of the word. He was a teacher of Rudolf and had close contact with the court. Second, one has to think about his indifference to the marginal utility theory, a new paradigm in economic theory. His main work was dedicated to Roscher, possibly hoping to get support from the great master of German economics at that time. Yet, unlike Böhm-Bawerk and Wieser who sought to make their mentor a superstar of the Marginal Revolution, Menger had no intention to revolutionize economics in any way[13]. When he said that he only wished to continue the German tradition in the preface to the *Grundsätze*, he not only tried to be humble about his work, thus seeking support from the German academic world, but at the same time he spoke quite honestly about his relationship with German economics. Menger was a traditionalist, not a revolutionist. Thus as Howey pointed out:

In general we can say that, although Menger talked about the Austrian School, no one could gather from his words in any of his publications after 1871 down to his death that the Austrian School had the slightest connection with the Marginal Utility School. He either did not admit the connection, or wished to minimize it, or took it for granted (Howey, 1960, p. 142).

### **Some counter-factual exercises in the history of economic thought**

Some counter-factual detective exercises are interesting to consider. If Robert Adamson had not had the opportunity to read Kautz's work, would Jevons have published the preface to the second edition of his main work as we read today? It is a possibility. Since Jevons also communicated with D'Aulnis, it is possible that Jevons would have noticed the existence of Gossen via D'Aulnis. The same can be said of Walras. Seen from this perspective, a key person might be D'Aulnis who was playing an important role behind the scenes.

Menger's attitude *vis-à-vis* Gossen was completely different from those of Walras and Jevons. He was not interested in the mathematical method in economics as such. Consequently he was utterly indifferent to Gossen. Assume that Robert Adamson had not had the opportunity to read Kautz's work and that Walras and Jevons had not communicated with D'Aulnis, and only Menger had contacted D'Aulnis. Would Menger have published a substantial article on Gossen? It is doubtful.

### **Notes**

1. I agree with Howey when he says, "In the course of the paper, Walras not only provided the main known facts on the life of Gossen but also set forth, not Gossen's claim to originality, but his own . . . He concluded that, although Gossen may have anticipated all or most of Jevons' discoveries as Jevons says that he did, Gossen had not anticipated his own" (Howey, 1960, p. 180).
2. This is a mystery in the history of economic thought. As Walras said, he sent the manuscript to G. Boccardo. It took a long time for researchers to ascertain that the manuscript was in the possession of Luigi Einaudi, the late Italian president. Horst Recktenwald, a well-known figure in the field of public finance but also in the history of economics, wrote to Mrs Einaudi. In 1965 he succeeded in getting a copy of the manuscript from her. Recktenwald planned to publish Walras's manuscript in the scarce books series of the *Wirtschaft und Finanzen*. Unfortunately, this has not been published. See Recktenwald (1987a; 1987b). Finally, Albert Jolink, Jan van Daal and others edited the French translation of Walras, thus making this translation available for general readers (see Gossen, 1854; Jolink and Daal, 1998).
3. Kauder said, "Menger did not approve of Gossen, rejecting his purely hedonistic approach, his emphasis on labor, and the application of mathematics in the realm of psychology" (Kauder, 1965, p. 82).
4. See the copies of Roscher (1866) and Mill (1864) in the Menger Library, Hitotsubashi University, Tokyo. Menger's marginal notes in Rau's textbook were already transcribed by Kauder (see Menger, 1963).
5. This passage was rewritten considering the discussions during the conference. My thanks go to Jürgen Backhaus, who indicated my misinterpretation in the previous draft.
6. For Jevons' introduction of Gossen's unknown book see Baloglou (1995, pp. 244-5), Georgescu-Roegen (1983, pp. liv-lv) and Maruyama (1986, pp. 232-4).

7. For the earlier scholarship see especially Baloglou (1995, pp. 245-7) and Georgescu-Roegen (1983, p. lv). Baloglou (1995) offers a good bird's-eye view of the development of mathematical economics in Germany, one of the frontiers in the field of history of economic thought. He also gives a good explanation of the reception of Gossen's economics. Georgescu-Roegen (1983) is a basic reference on Gossenian economics as well as the reception received by his work. Although the description in this section draws partly on these earlier works, I try to capture the arguments down to the smallest detail.
8. Howey may have been the first to mention this letter paying attention to D'Aulnis's inadequate characterization of the Mengerian economics (see Howey, 1973, p. 21).
9. The discussions in the correspondence between Walras and Menger concerning the methodology of economics are well-known in the previous scholarship (see especially Jaffé, 1935; 1976; Kauder, 1965; Maruyama, 1984). The description in this paper is partly based on the literature indicated here.
10. Howey interprets the following as Menger's positive interest in mathematical economics, thus reserving his final answer as to whether or not Menger was totally indifferent to mathematical economics throughout his life. Using Menger's letter to Feilbogen, Howey emphasises that Menger was interested in Cournot, whose name was also mentioned in the letter to Walras. Howey writes, "In the reply Menger listed ten mathematical works on political economy which he had in his library and offered to lend to Walras. A library of this kind and size would hardly be owned at this time, even by a bibliophile such as Menger, if he had only faint connections with mathematics. Further, one of the ten books was by Cournot" (Howey, 1973, p. 21). I doubt that the existence of mathematical economics in the Menger Library shows his positive interest in this new direction in economics. As Howey says, Menger was a great lover of books, and frequently bibliophiles buy books simply because they are included in the catalogues of second-hand bookstores! See also the following comment of Kauder, who mentioned Menger's letter to Feilbogen, but nevertheless confirmed his anti-mathematical inclination: "In his last years his opposition to mathematics grew somewhat weaker. In 1911 he wrote in a letter addressed to Ismar Feilbogen that he was interested in Cournot and in mathematics. This letter is a puzzle, as Menger owned all the economic works of Cournot and never read them ... Whatever the reasons for the strange letter, in his creative period Menger was a fanatical opponent of mathematical analysis and had written a methodology free from mathematics" (Kauder, 1965, pp. 90-1).
11. Georgescu-Roegen (1983) referred to this letter to Walras in his introduction to the English translation of the *Entwicklung* (see Georgescu-Roegen, 1983, p. liv).
12. Howey seems to be the first to mention this review article by Menger. See the following comment by Howey: "Menger listed together the names of Böhm-Bawerk, Walras, Wieser, Pierson, Marshall, Gossen, and Jevons on the last page of a review of Gustav Schönberg's *Handbuch der politischen Oekonomie in the Zeitschrift für das Privat- und öffentliche Recht der Gegenwart* ... but he did not identify them in any way with the idea of marginal utility" (Howey, 1960, p. 258, n. 11).
13. This is a widely accepted opinion. See Blaug's statement in his provocative paper presented at the Bellagio Conference: "Only biographical data can tell us why Jevons and Walras (and Gossen) each insisted on the novelty of his ideas, whereas Menger (and Lloyd and Longfield and Jenkin) did not" (Blaug, 1973, p. 11).

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