

# Reforming Political Economy using Statistics: The Words and Deeds of Quetelet and Whewell

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This “curious separation between abstract theory and empirical work” (Blaug 1976) found... much support among political economists and statisticians. In the middle decades of the nineteenth century, Ricardian economics reigned supreme and was unaffected by the fact-gathering of the statisticians. (Maas 2005, 71)

## I. Introduction

It is no exaggeration to say that quantifying – and thereby rendering scientific – economic enquiries is what economists have pursued for a very long time. This laborious pursuit appears to have resulted in great success. Mainstream economics is thoroughly mathematical in its hypothetico-deductivist methodology, although it is abandoning its over-theoretical orientations of the 1970s and 1980s. Moreover, it is exclusively statistical not only in empirically testing the consequences drawn from mathematical models but also in capturing or redefining the fact in question in as few dimensions as possible.

However, as it is with many historical victories, the history of quantification of economics has its early, unrewarded heroes, whose merits found recognition much later. Among them are William Whewell (1794–1866) and Adolphe Quetelet (1796–1874). The former was trained in mathematics at Cambridge during its math-centred revival and became a powerful polymath in early-Victorian Britain, whose writings encompassed various topics from mathematics, natural and social sciences to morality and even theology. As an economic writer, he presented the earliest mathematical formulation of Ricardo’s economics and attempted to show a methodological vice in the unduly deductivist economics. However, neither his earliest enterprises nor his underlying intentions were well understood among his friends or foes, and his words remained unheard like ‘voices in the wilderness’ (Blaug 1958). Quetelet was trained in mathematics too, in Paris, under the supervision of P.-S. Laplace, and, in Belgium, gave birth to statistics in the modern sense or, more precisely, on a probabilistic basis. He is notable in the history of economics for his

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magnum opus *Sur l'homme*, which was later to be a critical influence on Jevons' statistical work and on social statistics (Sozialstatistik) of the German historical school (Mosselmans 2005). However, Quetelet's methodological impact is hardly, if at all, seen in contemporary economic literature.

Hence, it may be surprising that these two scholars were in close contact with each other and discussed not only mathematics and natural science but also political economy, or the application of statistics to it. One fact substantiated below is that Whewell sought an alliance with Quetelet to establish the statistical section in the British Association for the Advancement of Science. This was an attempt to reform the study of *political economy* using *statistics*, as initially, this alliance was with anti-Ricardian Cantabrigians such as Thomas Robert Malthus, Richard Jones, and Charles Babbage. As Goldman (1983) observes, academics led the movement for establishing the statistical section in 1833 to reform political economy methodologically; therefore, it was distinctive from the middle-class enthusiasm for social reform, which led to the establishment, for example, of the Manchester Statistical Society in the same year. Moreover, as Henderson (1996) maintains, Whewell played an essential role, although behind the scenes, in founding the statistical section, a foundation that was so irregular in procedure that it has been called a coup d'état. Therefore, it is reasonable to examine the intellectual relationship of Whewell and Quetelet in the history of economics. It involves specific questions, such as what the English anti-Ricardian supposed that Queteletian statistics could do for economic research, and what the Belgian statistician thought of English orthodox economics and Whewell's methodological assault upon it. This study undertakes preliminary observations to answer this series of questions, focusing on Quetelet.

The paper is organised as follows. The next section discusses the acquaintance of Quetelet and Whewell in approximately 1830, in relation to the Cambridge scientific scene. These years also witnessed a great development in Quetelet's intellectual approach to society, a theme found in section three. The fourth section deals with the establishment of the statistical section of the British Association, referring to Whewell and Quetelet rather than to Babbage and Jones, as is common in secondary literature on this topic. Quetelet's involvement in this institutional expansion was not passive but he was rather eager for the statistical section to begin collecting data and generalising them into laws. This is the emphasis of the next section. The final section contains some concluding remarks.

## **II. Quetelet, Whewell and Cambridge**

Quetelet visited Cambridge for the first time in 1827. He came across the Channel to find instruments for building an observatory at Brussels under the orders of William I

(of the United Kingdom of the Netherlands, from which Belgium won independence three years later). He visited many observatories in Britain, including that at Cambridge. His account of his business travel reads, 'When I visited the Observatory [at Cambridge] in November 1827... I was able to enter the premises through the courtesy of Mr. Sheepshanks, a member of Trinity College, who was very eager to show me in every corner of the establishment' (Quetelet and Garnier 1829, 64).<sup>1</sup> It is highly probable, as shown below, that it was during his stay in Cambridge that Quetelet got acquainted in person with Whewell, a college colleague and friend of Sheepshanks, although his account made no mention of Whewell.

Two years or so later, Quetelet attended the Heidelberg meeting of the German Naturalist Assembly (Deutscher Naturforscher Versammlung). Several men of science from Continental countries and the United Kingdom were delegates at this meeting, 'among whom I [Quetelet] was glad to see Professor Whewell again, with whom I had the honour to be acquainted at the University of Cambridge two years before' (Quetelet and Garnier 1830, 233). Quetelet noted that 'the witty speaking and wide and firm knowledge of this able professor added much to my enjoyment while staying at Heidelberg' (233).

Perhaps it was immediately after this reunion that Quetelet and Whewell entered into correspondence. The earliest of the 37 letters from Quetelet to Whewell, archived as part of the Whewell Papers at Trinity College, is dated 11 November, 1830, while the last is dated 17 December, 1860. The earliest of the 34 letters sent by Whewell to Quetelet held at the Royal Academy of Science, Letters and Fine Arts of Belgium is dated 15 May, 1832, while the last is dated 23 September, 1861. A brief look through these letters shows that the two scholars sent academic bulletins to each other throughout these decades; Whewell sent the *Transactions of the Cambridge Philosophical Society* to Quetelet, who sent *Nouveaux mémoires de l'Académie Royale* to him. The former was the journal to which Whewell contributed his three articles that mathematically formulated economic theories, and the latter featured many statistical accounts written by Quetelet.

As is well known, it was in the initial stages of this correspondence when Whewell was most prolific in publishing his opinion on political economy. Not only did he present two papers on the subject at the Cambridge Philosophical Society, both of which were published in *Transactions* (Whewell 1829; 1831), but also wrote an article in favour of Jones' monograph on wages (Whewell 1831) and another in opposition to Whately's lectures on economic methodology (Whewell 1833). However, less known is the fact that during this time, Quetelet was already forming ideas that would crystallise in his 1835

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<sup>1</sup> All quotations from French are my translations unless otherwise noted.

book, *Sur l'homme* (Stigler 1999, 59). His idea was to apply statistical theories and techniques such as the theory of errors and the least squares method to social studies, and to discover some constants or regularities in society using these means. This deterministic view of society was not at all inconsistent with the belief that everyone was able to act with free will, and was personified in his famous 'average man [l'homme moyen]', the hypothetical or ideal human being, who in Quetelet's view, should be deduced from social statistics. It is noteworthy that he was then developing this innovative weapon to apply it in a field that political economists dominated in Britain.

### III. Quetelet on 'mécannique sociale'

Quetelet explained the application of probability theory to various natural and social problems in his 1828 *Instructions populaires sur le calcul des probabilités* (Quetelet 1828). A year later, he narrated the history of this application in the Introduction to *Recherches statistiques sur le royaume des Pays-Bas* (Quetelet 1829).

A calculation was born in the middle of the seventeenth century. In the beginning, it was only useful in evaluating chances in gambling games, but soon developed and unexpectedly shed light upon several enormous problems, the solution to which was of the utmost interest to Man.... Political economy, in its turn, joined the ranks of science, and guided and enlightened the society, relying upon statistics on the one hand and upon history in its widest sense on the other. Facts were sought instead of words, sensible observations instead of faint hypotheses or unfounded systems.

Quetelet observed that attempts to apply probability calculations to social phenomena had often been accused of 'fatalism' (vi), an accusation that amounted to a denial of the supposition that 'there are probabilities of reproduction of events that have regularly taken place under the same influences' (vii). In fact, to him, it was these 'probabilities' or statistical regularities from which societal laws would emerge. Thus, he dared to declare war against popular prejudice. Morgan (1990, 7-8) finds in his statement a quintessential nineteenth-century understanding of statistical regularities and ascribes to his intellectual influence the fact that economics kept itself from statistical inference and testing throughout that century. Note, however, that in the appendix to *Recherches*, Quetelet refers to Say's *Traité d'économie politique* and attempts to infer the fluctuation in corn price over time from historical fragments. No matter how tenable her diagnosis, it is obvious that Quetelet supposed statistics to be useful in addressing the problems hitherto dealt with by

political economists.

It was just two years later, that Quetelet presented the concept of 'average man'. He introduced his *Recherches sur le penchant au crime au différens âges*, as follows.

The man which I considered is in society the analogue of the center of gravity in matter. He is a fictional being in regard to which all things happen in accordance with average results obtained for society. If the *average* man were ascertained for one nation, he would present the type of that nation. If he could be ascertained according to the mass of men, he would present the type of the human species altogether. (Quetelet 1831a, 1; quoted from Sylvester 1984, 3, in translation; for a similar statement see 1831b, 4)

This concept of 'average man' closely intertwines with his concept of law. 'Man submits to certain laws and yields to certain modifications without knowing he does, even when he believes himself to be acting of free will' (Quetelet 1831b, 1). The 'average man' is not observed but can only be statistically defined; it embodies the societal laws, which in turn regulate the movement of human beings, but only probabilistically. Quetelet proposed this research programme as '*mécanique sociale*' at that time, instead of the '*physique sociale*' he would use in his 1835 book, *Sur l'homme*.

Approximately two years later, Quetelet received a letter from Whewell,<sup>2</sup> who invited him to attend the Cambridge meeting of the British Association in 1833 to witness the irregular establishment of the statistical section. What he received simultaneously – enclosed with that letter or not – was a volume of *Transactions of the Cambridge Philosophical Society*, which contained Whewell's article 'Mathematical exposition of some leading doctrines in Mr. Ricardo's Principles of Political Economy'. In reply, Quetelet wrote 'You are one of the few mathematicians who seek to associate the political sciences with the mathematical sciences. I have read with much interest your work on this subject in the excellent Transactions of Cambridge that you were kind to let me receive' (14 May, 1833; Whewell Papers, Add.ms.a.211<sup>3</sup>). It was unclear whether Quetelet correctly understood Whewell's intention to assault Ricardo's economics; however, it seems that Quetelet

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<sup>2</sup> Whewell wrote to Quetelet on 2 April, 1833, 'You will probably have heard that we have begun to hold in England annual meetings of the friends of science like that which brought us together at Heidelberg. The next of these meetings takes place at Cambridge and begins on the 24th of June. I should be extremely glad to believe that there was any possibility of your attending this meeting, and I am persuaded that if you were to do so you would find there many persons and things which would interest you. If you can visit us at that time pray do: we will give you apartments in the College and do what we can to make your visit agreeable' (Quetelet Papers 2644).

approved Whewell's enterprise as mathematization of political economy.

#### **IV. Quetelet for the establishment of the statistical section in the BAAS**

How did the idea for a statistical section occur to the members of the British Association? Babbage, one of the five founding members, recalled it less than 30 years later, as follows:

At the Third Meeting of the British Association at Cambridge [which was held from 24 to 28 June] in 1833, I happened, one afternoon, to call on my old and valued friend the Rev. Richard Jones, Professor of Political Economy at Hailebury [*sic*], who was then residing in apartments at Trinity College. He informed me that he had just had a long conversation with our mutual friend M. Quételet, who has been sent officially by the Belgian Government to attend the meeting.... That M. Quetelet had brought with him a budget of statistical facts, and that as there was no place for it in any section, he (Professor Jones) had asked M. Quételet to come to him that evening, and had invited... Professor Malthus, Mr. Drinkwater [etc.]... to meet him, at the same time requesting me to join the party. I gladly accepted this invitation, and departed. I had not, however, reached the gate of Trinity College before it occurred to me that there was now an opportunity of doing good service to the British Association. I returned to the apartments of my friend, explained to him my views, in which he fully coincided, and I suggested the formation of a Statistical Section. We both agreed that unless some *unusual* course were taken, it would be impossible to get such a Section organized until the meeting in the following year. I therefore proposed that when we met in the evening we should consider the question of constituting ourselves provisionally a Statistical Section, and afterwards at the general meeting in the Senate House, that I should explain the circumstance which had arisen, and the great general advantage to the British Association of rendering such a Section a permanent branch of its institution.... The sanction of the General Meeting was then given to the establishment of the Statistical Section. (Babbage 1861, 506)

Babbage's recollection is, however, 'often inaccurate,' whether or not due to his 'self-promoting rewriting of history' (Snyder 2011, 378). First, it was not Jones but Malthus

who was then professor of political economy at Haileybury. Furthermore, Babbage ascribed the birth of the section to his own inspiration from 'a purely accidental circumstance' (Babbage 1861, 505); however, he was not the inventor of the idea, nor was its circumstance accidental. Whewell had written to Jones on 24 May, 1833 saying 'I want to talk with you about getting statistical information, if the British Association is to be made subservient to that, and which I think would be well' (Whewell Papers, Add.Ms.c.51<sup>154</sup>; Todhunter [1876] 2001, 2: 161). On 2 April, as quoted above, Whewell invited Quetelet to the meeting and promised to 'give you apartments in the College' (Quetelet Papers 2644). More than ten years later, Quetelet would write to Whewell stating 'I never forget that it was in your room at Cambridge that the [statistical] section was given birth to' (Whewell Papers, Add.Ms.a.211<sup>27</sup>). Thus, it was not accidental that Quetelet and Jones were both lodging in Trinity College when the Cambridge meeting was held. Whewell played an essential role behind the scenes.

As Whewell may have expected, Quetelet also played an important part in establishing the statistical section. He recorded his attendance of the Cambridge meeting in his report:

As this science [statistics] was not among those sciences that the committees had to deal with at Cambridge, we [Quetelet and Babbage] met at once to talk about it with Mr. Malthus and Mr. Jones, with whom I had had the honour to be acquainted. Some more people showed disposition to attend this quite intimate party, which soon so expanded that the Association, in its general meeting, recognised the sixth section for statistics.... Mr. Malthus was designated the president of the committee, but Mr. Babbage was proclaimed to take his place at his invitation and Mr. Drinkwater to be the secretary.... (Quetelet and Garnier 1835, 14)

Quetelet entered into details about how things were going with Whewell in his private memorandum.

It was this modest apartment [at Trinity College that Whewell gave him] that the most distinguished statisticians from England met for conversation, a meeting that would later be called again, with courtesy for the other sections, to take rank beside other branches of human knowledge. This was how this addition was accepted in the general meeting [of the Association]. (Quetelet Papers, 2644)

Drinkwater's minutes evince that the first but still unofficial meeting for a statistical section that the secretary attended was held on the morning of 27 June. It was at this meeting, attended by Malthus, Quetelet, Babbage, Jones and four other men, including the secretary (but not by Whewell), that 'the prospects and most desirable method of establishing the Section were discussed', 'Mr. Quetelet communicated... some of the results of his enquiries into the proportion of crime at different ages and in different parts of France and Belgium, and Babbage 'referred, in illustration of Mr. Quetelet's previous remarks, to the curves he had constructed of the number of persons committed for drunkenness in the Metropolis' (Drinkwater 1935, 140-41).

At 1 p.m. on 27 June, Adam Sedgewick, the president of the Association, inaugurated the general meeting:

The President stated, that the Members were aware that, in addition to the General Meetings, they had five distinct Sections.... Those five Sections had now been found insufficient, and he would announce to them the appearance of a new bantling, the offspring of yesterday. – A sixth Section had been formed, somewhat irregularly he must allow, but under the auspices of very distinguished men. He must call upon Professor Malthus or Professor Babbage to explain to the Meeting the reasons and circumstances of this proceeding. (Anon. 1833, 82)

Babbage stood up to reply to the president's request:

Babbage said, [the founders of the statistical section] were now asking for a bill of indemnity, for having broken the laws. The Section was formed for the purpose of promoting Statistical enquiries, which were of considerable importance. They had been assisted by a distinguished Foreigner, possessing a budget of most valuable information. He then entered on some details respecting the information given by Professor Quetelet. (Anon. 1833, 82)

Babbage announced the formation of the new section as a *fait accompli* and used the authoritative name of the Belgian statistician to make the audience accept it as such. Interestingly, this 'proceeding' is not recorded in the official report issued by the Association itself (BAAS 1833).

However, there remained concerns about not only the 'irregularity' but also the scientific nature of statistics, concerns that are recorded in the official report. At the general meeting the next day, which was the last one at Cambridge, the president could not but

deal with popular concerns in his concluding address:

Some remarks may be expected from me in reference to the objects of this Section, as several Members may perhaps think them ill fitted to a Society formed only for the promotion of natural science.... The science of morals and politics are elevated far above the speculations of our philosophy. Can, then, statistical inquiries be made compatible with our objects, and taken into the bosom of our Society? I think they unquestionably may, so far as they have to do with matters of fact, with mere abstractions, and with numerical results. Considered in that light they give what may be called *the raw material to political economy and political philosophy*; and by their help the lasting foundations of those sciences may be perhaps ultimately laid. (BAAS 1834, xxviii; emphasis added)

The president was most concerned that 'in moral and political reasoning, we have ever to do with questions', which would provoke the members into 'bad passions and party animosity', which might 'consume our whole fabric... [by] destroying all the principles by which we are held together' (xxix). Finally, the general committee, or the governing body of the Association, realised this anxiety by resolving that 'the inquiries of this Section should be restricted to those classes of facts relating to communities of men *which are capable of being expressed by numbers, and which promise, when sufficiently multiplied, to indicate general laws*' (xxxvii; emphasis in original). In other words, the section was confined to collecting data on political economy and political science and precluded from generalising those data into laws, at least for the time being.

What then did Quetelet think of this restriction? It seems that he wrote about it disappointedly or, at least, unsatisfactorily.

The Association, in the general meeting, recognised the sixth section for statistics but by confining this science within a purely numerical role. (Quetelet and Garnier 1835, 14)

Answers to these questions [presented in the statistical section] would be precious materials if they were committed to able hands that would render them beneficent to us. (16)

To Quetelet, the statistical section of the British Association had no room for such 'able hands' from the beginning. Possibly, he may have been returning home from Cambridge, in the hope that such 'able hands' might be available elsewhere.

## V. Quetelet on political economy

Quetelet did not return home immediately after the Cambridge meeting of the British Association, but stayed in London for a while. He did attend a meeting of the Political Economy Club in the metropolis. This was not a regular meeting, open only for its members as a rule, but a subscription meeting, with the rule suspended. Malthus was among the audience, to whom Tooke gave an oral presentation as to whether or not 'legislative interference, in behalf of Children employed in Factories, [is] consistent with sound policy; and if so, under what modifications' (Political Economy Club 1882, 114). Quetelet accounted for the meeting as follows:

The most learned men in the political sciences hold meetings in London, where they discuss topics of study and exchange opinions with each other. These discussions, completely scientific and friendly, and usually attended by twenty to thirty persons, follow a banquet and deal generally with recent political questions. I was strongly invited to one of their meetings, which discussed the question of labour imposed upon children in factories. At this meeting were a number of the most distinguished economists in England, such as Mr. Malthus, Mr. Senior, Mr. Tooke, Mr. Lewis, Mr. Whately and Mr. Babbage. Mr. Vandeweyer, our ambassador plenipotentiary to London, has not lost his interest in the subject of his early study and also belongs to this Club, and attended the same meeting. (Quetelet and Garnier 1835, 16)

It is not clear whether Quetelet knew that the Club was originally formed with Ricardo as its pivotal figure. Either way, the account above did not convey any critical feelings that Quetelet might be alleged to have had toward British political economy, or theoretical economics, in general. Moreover, considering that this account was inserted at the end of his report on statistical studies at the British Association, we can safely suppose that he would bring his social statistics to bear upon the field that political economists dominated in Britain.

After returning to Brussels, Quetelet came to rely almost exclusively upon Whewell for information on statistical studies in Britain, as Quetelet 'can no longer draw upon our friend Babbage' (25 December, 1834; Whewell Papers, Add.ms.a.2117). Under this circumstance, Quetelet started explicitly communicating his ideas to Whewell, one of which crystallised in his 1835 *Sur l'homme*.

I am leaving in a couple of days for Paris, where a sufficiently enlarged

work of my composition is going into print. I would like to have been able to present it at the statistical section of the British Association.... My new work aims to examine how Man develops in physical, intellectual, and moral terms. I determine what I call the average man, which is to the social system what the centre of gravity is to matter.... We also have the theory of arbitrary constants. It is surprising to see how Nature, while giving us free will, nevertheless confines us within such conditions that we can neither weaken her providence nor derange her laws.... Please do not think I am insane. I have shown no sign of aberration.... You are greatly successful in the application of mathematics to political economy. (22 August, 1834; Whewell Paper, Add.ms.a.211<sup>6</sup>)

However, Whewell began to be somewhat critical of Quetelet's research programme.

I received your work "L'Homme" with great pleasure, both as a mark of your kindness, and for the interest of the work itself. Your researches are as curious and interesting as anything expressed by means of numbers can be. The Statistical Section of the Association met at Dublin, and had some important papers.... The Statistical Society in London was engaged before the meeting in drawing up a large collection of questions for circulation. They will, I have no doubt, obtain a great deal of information, but my opinion at present is that they would go on better if they had some zealous *theorists* among them. I am afraid you will think me heterodox, but I believe that without this there will be no zeal in their labour and no connexion in their results. Theories are not very dangerous, even when they are false (except when they are applied to practice), for the facts collected and expressed in the language of a bad theory may be translated into the language of a better when people get it; but unconnected facts are of comparatively small value. (2 October, 1835; Todhunter [1876] 2001, 2: 228–9; emphasis in original)

Whewell began to suppose that even a false economic theory could be useful in collecting statistical data and finding causal relations among them, while Quetelet believed that it was possible to find constants or laws in data using statistical theories and techniques. Quetelet seems to have given up hope of agreeing with Whewell on this point after almost 20 years.

I know you do not like moral statistics too much. (Quetelet to Whewell, on 17 August 1847; Whewell Papers, Add.ms.a.211<sup>28</sup>)

## VI. Concluding remarks

The initial challenge for both Whewell and Quetelet was making political economy or, generally, social studies ‘scientific’, which had different meanings for both. On the one hand, Whewell found that orthodox political economy was at once logically erroneous and empirically unfounded and welcomed statistical methodology for collecting data, and thereby, for constructing an alternative political economy. However, this attempt, paradoxically, made him gradually realise the essential role of ideas in science.

I left a copy of my “Philosophy” [Whewell’s *Philosophy of the Inductive Sciences*] directed for you when I quitted England and I hope it has reached you by this time. When you have time to read it, you will find that, when I spoke of your finding it too idealistic, this was not because I supposed you inclined to materialism. I do not know how the case may be with you, but most of my own countrymen have been of late in the habit of understanding the maxim, that “all our knowledge is derived from experience,” in such a sense as to overlook the importance of ideas, and *it is one main object of my book to correct this error.* (Whewell to Quetelet, 28 June, 1840; Todhunter [1876] 2001, 283; emphasis added)

At the same time, he gradually turned his criticism of orthodoxy political economy from a scientific or methodological perspective to an anti-utilitarian one. Considering this transition in his thoughts about political economy, it is reasonable to suppose that he tried to make a positive contribution to the discipline when he returned to the task of mathematically formulating economics in 1850 (Whewell 1850).

On the other hand, Quetelet was not as critical of orthodox political economy as Whewell, and diagnosed it as semi-scientific; that is, in his view, political economy was ready for but still lacking in such core hypotheses as the ‘average man’, a concept that could be statistically deduced and quantitatively defined, but was not observable in itself. In reply to Whewell’s letter, Quetelet answered,

I have tried to convince myself of your plan at first and confess that I am not in favour of your idea of disregarding the moral and political sciences. It seems to me, on the contrary, that it was these, in particular, which you should have dealt with, sticking to what you say in your

preface. (Quetelet to Whewell, 8 July, 1840; Whewell Papers, Add.ms.a.211<sup>22</sup>)

The two scientists may have been at cross-purposes from the beginning, in their discussions about reforming political economy; however, this task seems to have enabled them to develop their own views of whether social 'science' was possible at all and, if yes, how?

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In other words, Russian wealth stratification is the worst of any of the major economies analyzed in the World Inequality Database. Things are not improving, either: the share of Russia's national wealth owned by the middle class has dwindled over the past decade, as white collar workers have struggled against a weakened ruble and the repercussions of the 2008 financial crisis. Russia's millionaires and billionaires have moved most of their wealth abroad. "How the Economy Organizes Itself in Space: A Survey of the New Economic Geography," Working Papers 96-04-021, Santa Fe Institute. As the example of Silicon Valley makes clear, the economic analysis of location--the geography of the economy--is the subfield of economics to which the typical buzzwords of complexity apply most obviously and dramatically. At the aggregate level; its dynamic landscapes are typically rugged, and the evolution of the spatial economy typically involves "punctuated equilibria," in which gradual change in the driving variables leads to occasional discontinuous change in the resulting behavior. Quetelet worked during an era of specialization in the sciences, yet his interests cannot easily be contained within a few disciplines. Even avoiding anachronistic labels of Quetelet of which sociologist, criminologist and climate scientist are all possible his work covered an enormous range of topics in the natural sciences and what would become the social sciences. This book too cannot escape the limitations Quetelet's long and productive life imposes on the historical researcher. The following is in some sense a biography but will pay almost no attention to Quetelet's family life. It is the story of the father of modern statistics but will contain no equations.