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SOME BRITISH EMPIRICISTS
IN THE
SOCIAL SCIENCES
1650 – 1900
The Raffaele Mattioli Lectures were delivered by
Richard Stone at the Università Commerciale Luigi Bocconi
in Milano, from 20th to 21st October 1986.
FIRST LECTURE
THE POLITICAL ARITHMETICIANS

William Petty (1623-1687)
Charles Davenant (1656-1714)
Gregory King (1648-1712)
William Petty, Professor of Anatomy at Oxford
CHAPTER 1

William Petty
and the Birth of National Accounting

1. Brief Life

William Petty, the originator of national accounting, was one of the most remarkable products of the English seventeenth century, an age of great intellectual vigour, scientific curiosity and inventiveness. In Petty these qualities were reinforced by exceptional versatility, a brilliant wit, great practical acumen and unbounded energy. His mind was like a geyser, constantly spouting ideas which he pursued with irrepressible enthusiasm, and he managed from modest beginnings to carve out for himself an amazing career: professor of anatomy at Oxford while still in his twenties, reader in music at Gresham College, London, Physician-General to Cromwell’s army in Ireland, land surveyor, cartographer, naval engineer, adviser both to the Cromwell government and, after the Restoration, to Charles II and James II, friend of the foremost scientists of his time, joint initiator of the Royal Society and, what is most interesting to us economists, founder of ‘political arithmetick’. Not surprisingly, he got going early in life. The story of his boyhood and early manhood reads like a picaresque novel and is worth recounting in some detail.

Petty was born at Romsey in Hampshire on 26 May 1623, the son of Antony Petty, a cloth maker and dyer. His mother’s surname is not known but her first name was Francesca: could she have been Italian, one wonders. William went to the local school, where he acquired some mathematics, a competent smattering of Latin and the rudiments of Greek. His chief amusement as a child was ‘to look on the artificers, e.g. smiths, the watch-makers, carpenters, joiners etc.; and at twelve years old he could have worked at any of these trades’. He had a
satirical turn of mind and a talent for drawing caricatures which earned him in his town the reputation of ‘a perfect cheiromantes’.

Around the age of twelve or thirteen, his imagination fired by tales of adventure, he thought he would try his fortune by embarking as cabin boy on a ship that plied between England and France. He had managed to save a few shillings, one of them a gift from an aunt when he embarked. When he reached France he invested this small capital in a few ‘pitiful brass things with colour’d glass in them instead of diamonds and rubies’ and on his first return home sold them to the young fellows of his town ‘whom he knew had sweet-hearts’. He also brought back a present for his good aunt, ‘a bracelet bought in France for 4d but judged to be worth 16d’. After ten months at sea he broke his leg while on board ship and his mates, who did not like a cabin boy who knew more about the art of navigation than they did and probably laughed at them for their ignorance, took him ashore and left him to fend for himself in a small inn near Caen. The locals looked after him and he recovered.

Disenchanted with a sailor’s life, he decided to give up the sea, stay on in Caen and resume his studies. To this end, with characteristic directness, he offered himself as a pupil to the Jesuit Fathers of Caen. As he tells us,

‘I made verses to the Jesuits, expressing my desire to return to the muses, and how I had been drawn from them by reading legends of our contryman, Cap’n Drake, in these words:

Rostra ratis Dracis nimis admiratus, abivi
Nauta scholam fugiens, et dulcia carmina sprevi.’

The Jesuit Fathers took him in, allaying his religious scruples by promising to do nothing to upset his faith except pray for his conversion.

It was not in Petty’s nature to subsist on charity. After his recovery he had had to pay one écu to ‘la Grand Jane, ye farrier’s wife’ for setting his leg, 10 sous to the apothecary who doctored him and 8 sous for a pair of crutches. With what money he had left, supplemented by ‘the remainder of two cakes of beeswax’,
he set up in trade, buying and selling improbably heterogeneous articles such as playing cards, white starch, 'hayre hats', tobacco pipes and shreds of parchment 'wherewith to size paper'. He also gave lessons. As 'le petit matelot Anglais qui parle Latin et Grec' he had excited much curiosity and one imagines much goodwill in the neighbourhood. One gentleman asked him to teach him English, another navigation, which he did in Latin. Thus he earned enough money to support himself and pursue his studies.

By the time he left Caen, aged about fifteen, he had 'obtained the Latin, Greek and French tongues, the whole body of arithmetic, the practical geometry and astronomy conducing to navigation and dialling' and had also managed to save £4. With these qualifications he came back to England and entered the King's Navy, in which he served until 1643. In that year, 'when the civil war betwixt the King and Parliament grew hot', he returned to the Continent with the intention of resuming his studies.

This time he went to Holland. By now he had saved £60 and this enabled him not only to support himself but also to take charge of his brother Anthony, who apparently accompanied him. William spent two years in Holland, matriculating as a student of medicine at Leyden on his twenty-first birthday, studying 'vigorously' at Leyden, Utrecht and Amsterdam and making friends with everybody who was anybody in Dutch academic circles. At the end of 1645 he went to Paris to continue his medical studies at the School of Anatomy there, armed with letters of introduction to Thomas Hobbes. Hobbes had left England for political reasons and was at the time engaged in writing his Leviathan. He took the young man under his wing and introduced him to some of the most influential political exiles there, such as the Marquis of Newcastle, and, more importantly, to his friend the mathematician Marin Mersenne, at whose house the cream of the philosophical, literary and scientific world of Paris used to meet. With his zest for life and eagerness to learn, Petty must have enjoyed himself immensely in Paris, in spite of the fact that his finances were at times at a very low ebb: there was one week, as he told Aubrey, when he had
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to survive on two pennyworths of nuts. Somehow or other he managed to straighten out his financial affairs and in 1646 returned to Romsey, as he tells us, ‘bringing back my brother Anthony, whom I had bred, with about ten pounds more than I had carried out of England’.

His father had recently died and Petty took on the management of the family business, improving it by a number of mechanical devices of his own invention. But he could not be expected to settle down as a clothier in a small town. He got to know some of the leading philosophers and scientists in London and was ‘admitted to several clubs of the virtuosi’, in particular the London Philosophical Society, nicknamed ‘the Invisible Club’, whose membership included Samuel Hartlib, Robert Boyle, John Wallis and John Wilkins, all future founders of the Royal Society. Another friend was John Graunt, with whom he was later to collaborate on the Observations upon the Bills of Mortality and who was then an influential City merchant with a good standing in the Parliamentary party.

In London Petty resumed his medical studies and at the same time tried to exploit commercially his mechanical ability. In 1647 he invented an instrument which would enable two copies of any writing to be made simultaneously and was granted a patent upon it for seventeen years. The device was not a success and, as Hull suggests, it may have been this experience which later prompted the remarks about ‘the poor inventor’, whose brains are picked by others and who gets no thanks, in chapter xi of the Treatise on Taxes.

Petty announced his invention in a pamphlet on education which he wrote in 1647 and in which he advocated the institution of schools where children would be taught manual trades as well as reading and writing ‘since few children have need of reading before they know or can be acquainted with the things they read of; or of writing, before their thoughts are worth recording, or they are able to put them in any form’. This pamphlet he dedicated to Hartlib, who was well known as a patron of scientists and scholars, and Hartlib sent it on to Boyle with a letter of introduction which shows why Petty was always so readily admitted to the friendship of eminent men.
WILLIAM PETTY

'I have put into your hands the design of the history of trade; the author is one Petty, twenty-four years of age, a perfect Frenchman, and a good linguist in other vulgar languages, besides Latin and Greek; a most rare and exacting anatomist and excelling in all mathematical and mechanical learning; of a sweet natural disposition and moral comportment. As for solid judgement and industry, altogether masculine."

Boyle, who was later to become famous as a chemist, was then only twenty but was already one of the central figures of the Invisible Club. The two young men got on well together and remained friends for life.

Political events now gave a new twist to Petty’s career. In 1646 Oxford had surrendered to the Parliamentary army and shortly afterwards the university was reorganised. In 1648 Wilkins was appointed Warden of Wadham College and the Philosophical Society apparently followed him en masse, including Petty who was now bent on getting a degree. Their ranks swelled by some of the local talent, including Christopher Wren, the future architect of St. Paul’s who was then an undergraduate at Wadham, they continued their meetings either at Wilkins’ house or at Petty’s lodgings, which being at an apothecary’s were convenient for inspecting drugs.

In 1649 Petty took the degree of doctor of physic. He was made a fellow of Brasenose College and deputy to the Professor of Anatomy, and succeeded to the professorship at the beginning of 1650. At about the same time he became Vice-Principal of his college and, through the good offices of his friend Graunt, Reader in Music at Gresham College, London. This college had been founded in the reign of Elizabeth by the financier Thomas Gresham and was administered by the City corporation.

A strange event occurred at the end of 1650. A certain Anne Green was hanged at Oxford for the murder of her illegitimate child. She seemed to take a long time in dying but was eventually certified dead. The body was put in a coffin and taken to the dissecting room. At this point Petty and his colleague Dr. Thomas Willis appeared on the scene and, recognising signs of

life, attempted successfully to revive the supposed corpse. She lived, it is said, to marry and become the mother of other children. This episode added considerably to Petty’s reputation.

In April 1651 the university granted Petty two years’ leave with an allowance of £30 a year. It is not sure what he did in the following months but it is supposed that his intention was to travel. However, the position changed completely at the end of the year, when he was appointed Physician-General to the Parliamentary army in Ireland and to the commander in chief, General Ireton. A fact which may have some bearing on this appointment is that Oliver Cromwell had recently been elected Chancellor of Oxford University. However that may be, Petty’s new post carried a salary of £1 per diem and he was allowed to take private patients, which brought in an additional £400 a year, as he tells us himself in his will.

Petty arrived in Ireland in 1652 and put his practical talents to good use in reorganising the army medical services, but the war was over. There was, however, another problem. The Commonwealth had decided to ‘resettle’ Ireland, that is expropriate the Irish landowners who had resisted Cromwell and divide the forfeited estates among the government’s numerous creditors; in particular the soldiers, who were owed large arrears of pay, and the ‘adventurers’ who had financed the equipment of the army. In order to carry out this plan it was necessary to survey the country and map out the forfeited estates. This task was in the hands of Benjamin Worsley, the Surveyor-General. Petty considered Worsley a charlatan and his methods inefficient and proposed an alternative scheme of action.

After some false starts and a good deal of acrimony Petty’s scheme was accepted at the end of 1654: he was to survey, measure and map all the forfeited lands, together with all Crown and ecclesiastical lands, within a period of thirteen months from a date eventually agreed on as 1 February 1655, at a rate of payment of a little over £7 per 1000 acres of fruitful profitable land and £3 for Church and Crown lands. Petty employed a workforce of about a thousand, which he organised on the principle of the division of labour. Many of those engaged in making the measurements were soldiers, which was just as