

# SIR WILLIAM PETTY: AN UNPUBLISHED MANUSCRIPT<sup>†</sup>

By SHICHIRO MATSUKAWA\*

## I

The present manuscript which I found in 1969 among the Bowood Papers remains, apparently, still unpublished as far as I know.

The manuscript appears to have been written around 1670. It contains nothing exceptionally novel, but, everything considered, it cannot be regarded quite unworthy of publication though it is very brief consisting of no longer than 12 leaves and 3 lines. For I believe it provides us with some extremely important clues which may enable us to understand more clearly the birth and growth of Petty's socio-economic thoughts, methods and theories, especially "political arithmetic" or "political anatomy" and labour theory of value which he was the first to originate and establish.

As mentioned in Note 1, the manuscript has no title. Besides, it has neither date nor endorsement whatever. Here it will be called the DIALOGUE.

## II

First of all, let us try to infer under what circumstances or conditions the DIALOGUE might have been prepared. In this respect, mention has to be made at least to the following 6 points.

\* Professor (*Kyōju*) of Chuo University, Tokyo.

† I have first of all to express my gratitude to the Marquis of Lansdowne who in 1969 permitted me to read Petty-MSS. at Bowood. On that occasion, I made a rough catalogue of the MSS. and transcribed some of them. At that time, Dr. E.D. Pendry, University of Bristol, kindly helped me with my transcription. My sincere thanks are due to the Earl of Shelburne who in 1975 permitted me to check up the present transcript with the original at the Bodleian Library where the Bowood Papers had been deposited for cataloguing. In 1976 he allowed me to publish it in an academic journal and to read other Petty-MSS. at Bowood.

My sincere thanks are due also to Dr. C. Hill, the Master of Balliol College, Oxford, who has given me valuable suggestions and advice with regard to studies of Petty, and who in 1975 afforded me assistance and co-operation in transcription. I must also thank Dr. R.W. Hunt, formerly Keeper of Western Manuscripts at the Bodleian Library, and his staff; Mr. D.G. Vaisey, successor to Dr. Hunt in the Library who in turn recommended me to Miss M.D. Slatter. She has nearly 30 years' experience in archives and kindly helped me in checking up again my transcript with the original. According to her, Petty's handwriting, in a paper like this, obviously written very quickly, is one of the most difficult she ever met with. Indeed, without her co-operation, my transcript could not have been completed in the form in which it now appears.

Last but by no means least, I wish to thank Dr. A.S. Skinner, University of Glasgow, who gave me advice for the transcription of old manuscripts and reorganized my introduction, and Professor C.D. Goodwin, Duke University, who gave me kind suggestions for my introduction; Mr. R.F.L. Bancroft, British Library, and officers of the British Council, all of whom have given me every facility for my present work.

This work is part of the results of my studies in 1975 as Special Researcher at Chuo University, Tokyo.

1) Reference is made of the "Establishment" of 1667 (f. 4<sup>v</sup>); 2) there can be almost no doubt that a character called "Hanlan" (f. 8<sup>v</sup>) was Redmond O'Hanlon (*d.* 1681, see Note 7), and it was "about 1670" that he, upon his return to Ireland from France, started campaigns as a leader of the so-called Irish "outlaws" (*Dictionary of National Biography*); 3) the DIALOGUE was written unmistakably on the basis of the method of "political arithmetic" which Petty first espoused and named; but the wording is actually such that, instead of this term, the two separate words "politics" and "arithmetic", the latter as one of the methods of the former in many cases, are used frequently. As far as I read, it is in his own list of writings dated 6 October 1671, that Petty used for the first time "Political Arithmetick" (*The Petty Papers*, Vol. II, p. 260-62); 4) some figures and discussions in the DIALOGUE, such as the total population in the dominions under the King of England, are exactly corresponding or related to those found in two main works, *Political Arithmetick* (1690) and *The Political Anatomy of Ireland* (1691), both almost simultaneously written and completed during 1670-76; 5) the DIALOGUE frequently refers to a "book" or "manuscript", as for instance at the very outset, and there are reasons to think that the reference in some cases is probably to either of these two works; 6) the DIALOGUE appears to have been prepared in anticipation of the possible ever-increasing Anglo-French confrontation just after the Dutch War III which in 1674 ended in the final victory of England, for a comparative study is made here not at all between England and Holland but solely between England and France.

Out of these points, the first alone is indisputable.<sup>††</sup> Nevertheless, I am inclined to assume provisionally that the DIALOGUE must have been written in a stretch, as the very quick stroke of the pen indicates, some time between the late 1660's and the early 1670's.

### III

Let us summarize as much as possible in Petty's own words what he says in the DIALOGUE.

It begins with the definition of "politics" as "y<sup>e</sup> way how to keep a people in Peace & plenty" (f. 1<sup>r</sup>) and then concentrates arguments on, among other things, the total population in England and colonies under the King, the land and people in each dominion, the people's expenses, expenses of defence, the people's tax-bearing ability, special problems in new colonies (America and Ireland), especially religion in the latter.

These topics, it should be noted, are presented clearly in terms of facts and condensed finally into the question of estimating the wealth and strength of a nation, a theoretical problem which is probed in depth repeatedly.

Moreover, these arguments are featured prominently by the consistent line of reasoning mainly based upon the quantification of socio-economic phenomena in terms of the "Number, Weight and Measure" as seen in the typical questions and answers, such as "Can you apply Arithmetick to Every Thing" and "Unlesse They bee Mystically Spirituall

<sup>††</sup> In addition to these, we have to consider other points. As an example, we have to examine the relations between Petty's *Observations upon the Dublin Bills of Mortality, 1681* (1683) and "The Bills of Mortality for Dublin & London" (f. 7<sup>r</sup>) which is mentioned in order to prove that "England is 12 times as rich as Ireland" (f. 7<sup>r</sup>).

eternall &c.” (f. 11<sup>r</sup>).

What then is the central point in the whole arguments?

It boils down to the method of “how to Measure y<sup>e</sup> Naturall & Intrinsic strength of any Country” (f. 9<sup>r</sup>). From this naturally arise two problems.

First, the very core of national strength consists in the “difference” between the total population and the number of people required for the production of “food” essential to maintain the whole population, or the number of “Spare hands” (f. 9<sup>r</sup>-10<sup>r</sup>); “And y<sup>e</sup> greater y<sup>e</sup> difference, The Stronger y<sup>e</sup> Country” (f. 9<sup>r</sup>).

Another key problem, much more fundamental, is the method of how “to finde y<sup>e</sup> Par between lands and hands” (f. 10<sup>r</sup>, see Note 9). This is at first considered arithmetically merely as the question of “common denominacion”, then as the question of “Mony” and “labor”; and finally considered as the “Common denominator” are the “wages of a good husbandman” which are “equivalent to” the annual rent of “arable land” per acre (f. 10<sup>r</sup>-11<sup>r</sup>).

#### IV

These arguments and topics may be briefly commented on as follows.

The definition of “politics” explained as above coincides completely with the very object of “true Politicks”, i.e. social science in general, the systematic elucidation of that which was emphasized in “The Conclusion” of the *Natural and Political Observations upon the Bills of Mortality* (1662) by J. Graunt, one of Petty’s lifelong friends. By the way, “The Conclusion” is generally considered as actually written by Petty himself.

In addition, the object referred to can be said to be linked with mercantile policy at that time and to feature Petty’s arguments in almost all his work after the Restoration, including *A Treatise of Taxes & Contributions* (1662), *Verbum Sapienti* (1691, written in 1665), *Quantulumcunque concerning Money, 1682* (1695), *A Treatise of Ireland* (1699, written in 1687), many essays in *Political Arithmetick* published in 1680’s, and about 160 fragmental essays (the bulk of which was written after 1660’s) contained in *The Petty Papers* (2 vols. 1927).

Stimulated by the scientific movement in the 17th century Europe, the above-mentioned reasoning originated from the “Down Survey” of forfeited lands in Ireland accomplished under the supervision of Petty himself during the Cromwellian Settlement of this country. And it gradually grew up in connection with the process of deeper and wider considerations into the socio-economic problems at that time and finally developed into the scientific thoughts and economic theories, far surpassing the vulgar notion of mercantilism. Such inquiry into the depths and theoretical generalization commonly characterize all the pioneering works of Petty.

Let us go a little further into details.

On the one hand, the problem of measuring “y<sup>e</sup> Naturall & Intrinsic strength of any Country” is discussed from various angles in *Taxes* (Ch. V) and *Verbum Sapienti* (Ch. I-II) as well as “The Conclusion” of Graunt’s *Observations*. Moreover, it is also considered in

*The Petty Papers* (Vol. I, Sec. VIII). In this connection, it is to be emphasized that in *Political Arithmetick* (Ch. VI-X) the "Spare hands" are regarded as the very basis which generates the "superlucration" as potential motive power to promote the increasing wealth and strength in the Kingdom of England. And the idea "superlucration" was later conceptualized in economics as the accumulation of capital leading to the reproduction on a progressively increasing scale.

On the other hand, the idea "Par" is another key element in Petty's labour theory of value. It is proposed in *Taxes* (Ch. IV) in connection with the measure of value, but it is not fully explained there. In *The Political Anatomy* (Ch. IX), it is recognized as "the most important Consideration in Political Oeconomics" and finally elucidated as "the number of days food" through other demonstrations. In the DIALOGUE, it is explained as "wages of a good husbandman" which are "equivalent to" the annual rent of "arable land" per acre as aforesaid, though through a different line of reasoning.

Besides, there are mentioned in the DIALOGUE not a few topics, social, economic and theoretical. For instance, there are the poor, catholicism in Ireland, the mode of taxation, the expenses of the people, the nature of money, new colonies, etc. All of these are taken up in the above-mentioned works.

Nevertheless, the ways of consideration are not necessarily one and the same in all these works, and it is to be emphasized that there are several noteworthy differences between these works and the DIALOGUE. For instance, signs of Petty's view of religion and money are seen in his assertion that "Popery seemes to mee not a Matter of Religion but Policy" (f. 11<sup>r</sup>) and that "Mony is an artificiall Thing or rather No Thing though Solomon says it answers all Things, but Is rather y<sup>e</sup> Signe of a Thing" (f. 10<sup>r</sup>).

It is very strange, however, to note that in the DIALOGUE no word is said about the union of England and Ireland, or one of Petty's most favourite ideas. By the way, Petty's words "Gra[un]t has proved in his Bills of Mortality, That persons of from 16 (y<sup>e</sup>ares) to (6)70 y<sup>e</sup>ares old can Earne 6d per diem" (f. 6<sup>r</sup>, see Note 1, b) will possibly stir up the "disputed authorship" of his *Observations*. It is to be noted in this connection, however, that I myself have found in this work not a single passage about these people's daily earnings.<sup>†††</sup>

It is neither desirable nor pertinent for me to go further into details, but one cannot help recalling Graunt's words in "The Conclusion" of his *Observations* that "there is pleasure in doing something new, though never so little, without pestering the world with voluminous Transcriptions". The DIALOGUE in not more than 12 leaves and 3 lines is far from voluminous, but it contains something new, though of no exceptional novelty, and provides us with such important evidence as said at the very outset. And it is more than personal pleasure for me to have the DIALOGUE published in full.

<sup>†††</sup> As for my views on these and other related issues, please refer to "Origin and Significance of Political Arithmetic" (*The Annals of the Hitotsubashi Academy*, Vol. VI, No. 1, October 1955); "The 300th Anniversary of J. Graunt's *Observations* (1662)" (*Hitotsubashi Journal of Economics*, Vol. 3, No. 1, October 1962); "An Essay on the Historical Uniqueness of Petty's Labour Theory of Value" (*Hitotsubashi Journal of Economics*, Vol. 5, No. 2, January 1965);, William Petty, eine Studie zur Genesis seiner Arbeitswerttheorie" (*Jahrbuch für Wirtschaftsgeschichte*, 1969, Teil III).

A Dialogue on Political Arithmetic &c. [by Sir William Petty]<sup>1</sup>

- [f. 1<sup>r</sup>] A. Whence come you?
- B From reading a (book) manuscript that contaynes y<sup>e</sup> plainest politics I ever yet heard of.
- A Politiques can never bee plaine, You see Geometry, w<sup>ch</sup> considers y<sup>e</sup> most simple quantities (are) is extremely difficult The Science of Motions more, The Fabrick of Animation yet more, The Minds of Men yet more, But y<sup>e</sup> Genius of Multitudes, Which I take to bee Politiques, most of all, What do you Meane by Politiques.
- B Troth, I meane by Politiques not a quarter of all this, but y<sup>e</sup> way how to keep a people in Peace & plenty, that is able to resist y<sup>e</sup> petulancy of ambitious Conquerors & y<sup>e</sup> chagrin of discontented persons at home and to hinder y<sup>e</sup> land from bearing any Unusefull herb to make y<sup>e</sup> best use of all it produces.
- A. This is a plaine sort of politiques indeed, Now I meane by Politiques to get myselfe Or freinds into Sovereigne power or to bee dispensers & administrators of it next, or as neere as may bee to

<sup>1</sup> First, the title: "A Dialogue on Political Arithmetic &c.", is evidently not given by Petty but by the 6th Marquis of Lansdowne who edited *The Petty Papers* (1927) and *The Petty-Southwell Correspondence, 1676-1687* (1928). It is written on the cover of the MS. The MS. itself has no title.

Secondly, the MS. is not paragraphed. From the beginning to the end, it is written, so to speak, in one paragraph. The present paragraphing is made by myself after modern practice.

Thirdly, as regards spelling, punctuation, capitalization, abbreviation and other wording or lettering, no alteration has been made even if several obvious mistakes have been made. By the way, Petty does not seem to me to be consistent in his spelling of many words. For instance, 'acre—aker', 'ag<sup>t</sup>—agst—against', 'already—alredy', 'arithmetick—arithmetic', 'bee—be', 'common—comon', 'expençe—expense', 'labor—labour', 'lesse—less', 'maintaine—maintayne', 'mee—me', 'money—mony', 'oxe—ox', 'politics—politiques—politiques—pollitiques', 'souls—soules', etc. Nor is he consistent in his spelling of words ending in 'cion'. He sometimes but not invariably uses the contraction sign 'cōn'. He does use the contraction 'mill', which I have extended as 'mill[ion]' or 'mill[ions]'. He uses also 'p', 'an' or 'ann', which I have extended 'p[er]', 'an[num]' or 'ann[um]'.  
 Fourthly, on the left side margin of f. 5<sup>r</sup> and f. 11<sup>r</sup> some calculations are made by Petty's pen, and in the latter case some figures are crossed out. In these cases also no alteration has been made.

Fifthly, as regards signs used by me, the following explanation shall be referred to:

- a) Word or words enclosed in square brackets are supplied by me: [     ]
- b) Word, words, figure or figures enclosed in angled brackets are those which are crossed out by Petty: <     >
- c) Three double-hyphens enclosed in angled brackets are entries crossed out by Petty and are illegible: <===>
- d) Single underlined parts are inserted by Petty from interlined spaces above: \_\_\_\_\_
- e) Three hyphens show blank parts: ---
- f) Parts which are underlined by double hyphens are those which are difficult to decipher and conjectually supplied by me: =====
- g) Double underlined parts are those which repeated in the MS.: \_\_\_\_\_
- h) For foliation, sloping strokes are used: /

[f. 1<sup>v</sup>] those who have y<sup>e</sup> Naturall Right (to) unto it To bee able to find faults in any Mans doing or flaws in his Rights & Estates, who is in a better condicon y<sup>n</sup> Myselfe, or to make their Vertues seem faults (or wo[rse]) Unnecessary or Dangerous, to laugh downe any / any y<sup>e</sup> most solid proposall to turne it into ridicule by Similes & Comparisons, To call what I cannot understand a Notion, nay a Chymæra to magnify any frivolous matter w<sup>ch</sup> makes to my purpose To dazzle y<sup>e</sup> Eyes of y<sup>e</sup> Prince to gratify his personall appetites, raise his passions, stifle his reason, To know what Woman or Minister any forraigne Prince most affects y<sup>e</sup> personall fewds against men in Office both at home & abroad.

B Enough, Enough. D'y[ou] call this Politiques, This is at best but y<sup>e</sup> Ars aulica & at worst a Systeme of Knavery

A. 'Tis that which brings men to preferment, and those y<sup>t</sup> want it are for y<sup>e</sup> most part contemned if they have low spirits and if they have great Minds They are so feared (and) hated suspected & misrepresented that they do not live out halfe their dayes nor Eate their bread in quiett.

B. 'Tis too true what you say, But I think my Politiques as they are worke So they are wages also, & that Conscientia politicè y<sup>e</sup> Norm is a great feast. /

[f. 2<sup>r</sup>] A, Upon y<sup>t</sup> accompt let mee heare something of your politiques & your Manuscript I love a great feast. Have you good Wine to your feast.

B. I eat<sup>2</sup> on. Then my book sayes. That y<sup>e</sup> King of England has 10 Millions of subjects——about 7200<sup>m</sup> in England 1200<sup>[m]</sup> in Ireland, as many in Scotland & about 400<sup>m</sup> in Jersey Guernsey New England Virginia Maryland Carolina Jamaica The Bermudas Barbados y<sup>e</sup> Other Caryba=Islands, at Bombay Tangier at sea, and in forraigne Countryes. And these y<sup>e</sup> first dish of my feast. Ten Millions of People is y<sup>e</sup> Chine of Beefe, I doubt whether y<sup>e</sup> Majesty King of France hath 15 [Millions].

A Well what's next.

B My book sayes That in England 3 statute akers of land will maintayne a[n] Oxe or [a] Cow of 4 yeares old, That 4 will do it

<sup>2</sup> It may also read "say".

in Ireland & 5 in Scotland at a Medium, and that an Ox will increase in weight 100<sup>lb</sup> Every yeare till his 〈Maturity〉 full growth, & this shewes y<sup>e</sup> quality of y<sup>e</sup> land.

A But how many acres have you of this land?

B Oh I had forgot. England 25 millions, Ireland 18 & Scotland about 14 or 15 /

[f. 2<sup>v</sup>]

A. And how much Elsewhere?

B. That's no Matter Jersey & Guernsey are y<sup>e</sup> best peopled of all y<sup>e</sup> King's dominions. Tangier & Bombay if wee could fix them, of great advantage to y<sup>e</sup> Indian & Levant Trades. As for America, You must not reckon by Number of akers but by y<sup>e</sup> Number of servants & slaves, and by y<sup>e</sup> quality of such comodityes growing there which you find a good Market for. There are neere 400<sup>m</sup> souls and they employ 400 sayle of ships above 100 tons One with another, That [is] a description better y<sup>n</sup> I use to meet with in other bookes.

A, May I eat a bit before the rest of your dishes are serv[e]d up.

B. You may.

A. Why then from what you have said y<sup>e</sup> 400<sup>m</sup> Soules in America might with y<sup>e</sup> 1200<sup>m</sup> alreidy in Ireland have been better bestowed in Ireland than 〈these〉 in America, For If 25 millions of akers in England maintained above 7 mill[ions] of soules your 18 mill[ions] of Ireland may well have maintayned 1600<sup>m</sup>. What does your plaine Politician say to that?

[f. 3<sup>r</sup>]

B I dont remember<sup>3</sup> But I say for him. That your Objection is weighty. / And twas a fault in Government to let so many go to America. But I extenuate y<sup>e</sup> matter by saying. 1. That y<sup>e</sup> 150<sup>m</sup> which are in New England went out of Old England for feare of popery and therefore would not go into Ireland, where popery is 500 times, at least, as strong as in England. [2.] The rest went into America out of Pride because being decayed in their fortunes they would not live in England to endure the being compared with themselves formerly & others at present in a bettere condicion.

A. These 2 last arguments are pretty good, But you have bragged that

<sup>3</sup> It may also read "recollect".

you would use no arguments grounded upon y<sup>e</sup> humours & fancyes of men but only upon (y<sup>e</sup> Weight) Things considered in Number Weight & Measure. have you any of those?

B Meethinks I have. The people of England Scotland & Ireland do spend do spend --- weight of Tobacco, --- of Sugar. --- of Cocao Nuts --- [of] Indico --- of Ginger --- of Indico None of all which do grow very well at home & therefore, They sought land & found it in America which would beare these / comodityes.

[f. 3<sup>v</sup>]

A. This is somewhat. & like yourselfe But then, New England has no share in this Excise and I doubt your other 250<sup>m</sup> had they stayed at home might have earned as much money as would have bought them as much tobacco Sugar Cotton Indico Ginger & Cocao as they make in America For 250<sup>m</sup> people might have well earned at home 2 millions &  $\frac{1}{2}$  of pounds, & do you think y<sup>e</sup> nacon spends so much in those 5 Comodityes When as their whole Expense is but 50 Millions or  $\frac{1}{20}$  pt of what our American= Countrymen might have gotten at home. Besides what hazards & Inconveniencies have they endured, & what had even the Spanyards gotten by their better plantacions, some say not so much as y<sup>e</sup> Hollanders have gotten by herrings taken upon y<sup>e</sup> Coasts of England & Scotland

B. You have killed Mee, Let y<sup>e</sup> Bishops & Statesmen of former times take up y<sup>e</sup> Cudgells, I lay y<sup>m</sup> downe. /

[f. 4<sup>r</sup>]

A I begin to like your way of arguing from Number Weight and Measure, One may at least understand One another & come to issue, Other men would have justified our American Colonyes by showing—1st How fit it was to plant y<sup>e</sup> Gospell in those dark corners of y<sup>e</sup> world, 2. How Piously y<sup>e</sup> New England planters detested Ireland tho a land flowing w<sup>th</sup> Milk & honey, because annoyed with Popery. 3. The hopes of making y<sup>e</sup> Natives all good subjects in time 4. To keep up with y<sup>e</sup> Spanyards our old Enemyes who led y<sup>e</sup> Dance. 5. To support y<sup>e</sup> Trade of Shipping.

B. Enough Enough.

A But you have sayd that y<sup>e</sup> Number of y<sup>e</sup> American swarme is 450<sup>m</sup>.



That they might have earned 3 or 4 Millions yearly at home, That --- akers of land would have planted all y<sup>e</sup> sugar tobacco &c. which they can Vend That y<sup>e</sup> Value thereof is but --- And upon whole did readily conclude Twas an Unprofitable Undertaking. I approve your Method & praise your Candor. Pray go on, let's see your next dish. /

[f. 4<sup>v</sup>]

B This bang has discomposed Mee. Where did I leave off[f].

A. You told mee what subjects The King had in each of his dominions, what extend of land & y<sup>e</sup> quality thereof. You have also obliquely toucht that y<sup>e</sup> King of France hath but 15 millions of subjects and that y<sup>e</sup> Expençe of all the Kings subjects is about 50 millions.

B. My book sayes That the tenth part of this Expençe will maintaine 100<sup>m</sup> foot soldiers, 30<sup>m</sup> horse & 30<sup>m</sup> Men at Sea.

A. I apprehend that myselfe 100<sup>m</sup> foot cannot cost more y<sup>n</sup> 1500<sup>m</sup> pounds. Nor need y<sup>e</sup> charge of 30<sup>m</sup> horse 30<sup>m</sup> men at sea bee above 40<sup>lb</sup> Each viz 2400<sup>m</sup> In all 3900<sup>m</sup>, which is far short of 5000<sup>m</sup>. And I guesse that 300<sup>m</sup> will Defray y<sup>e</sup> Civil pt' of y<sup>e</sup> same, viz Judges Intelligencers Ambassadors &c And Consequently do not wonder that 5000<sup>m</sup> should perform y<sup>e</sup> whole, Nor that  $\frac{1}{5}$  thereof or 1000 should serve in time of Peace for I remember to have seen Establishment an<sup>o</sup> 1667, when y<sup>e</sup> charge of England was about 750<sup>m</sup> of Ireland 150<sup>m</sup> & Scotland much under 100<sup>m</sup>. /

[f. 5<sup>r</sup>]

B You say well. Why then is there so horrible a Clatter about taxes Since  $\frac{1}{50}$  pt' will suffice in times of peace &  $\frac{1}{10}$  in Extreme war.

A. Why say you, What sayes your book.

B. Because the way of taxing is not well understood, because there is a great Shynesse of taxing y<sup>e</sup> poore, Whereas I think That [they] ought to bee proportionally taxed as well as y<sup>e</sup> richest. For y<sup>e</sup> poorest man in y<sup>e</sup> world hath 300 dayes of y<sup>e</sup> 365 to Work in, Why should not hee Work as many dayes for y<sup>e</sup> King, as a man of 360<sup>£</sup> p[er] an[um] payeth of pounds to y<sup>e</sup> King.

A. I am cleare the poore ought to pay as well [as] y<sup>e</sup> rich in proportion, but what will that amount unto.

B To  $\frac{3}{5}$  of y<sup>e</sup> whole charge for y<sup>e</sup> Expençe of y<sup>e</sup> people is supposed to

bee 50 mill[ions]. and y<sup>e</sup> rent of all y<sup>e</sup> Lands of England being 25 Mill[ions] at 6-8<sup>d</sup> p[er] acre is but about 8 mill[ions] of Ireland one Mill[ion] and of Scotland about as much more in all 10 Millions, which is about  $\frac{1}{5}$  of y<sup>e</sup> whole product, Now If suppose the proceed of y<sup>e</sup> personall Estates makes another fifth, which is y<sup>e</sup> most, Then y<sup>e</sup> labor of y<sup>e</sup> people must bee  $\frac{3}{5}$  thus.<sup>4</sup> /

- [f. 5<sup>v</sup>]      A..      Take a little paines to explaine this new peece of Politiques more clearely.
- B      For Instance suppose if 50<sup>m</sup> Expense y<sup>e</sup> 7200<sup>m</sup> of England were 6<sup>£</sup> a head for they spend more y<sup>n</sup> either in Ireland or Scotland. Then y<sup>e</sup> whole Expenxe will bee 42 millions, Whereof y<sup>e</sup> land rent makes 8 & y<sup>e</sup> proceed of y<sup>e</sup> personall Estate 8 more      There remaines 26 mill[ions] for y<sup>e</sup> people to earne      Now of y<sup>e</sup> whole people, One half are above 16 yeares old and may earne 3<sup>s</sup> p[er] week or 8<sup>£</sup> p[er] an[um] w<sup>ch</sup> amounts to 28.800<sup>m</sup>, whereof  $\frac{1}{50}$  is 576<sup>m</sup> Which sum is y<sup>e</sup>  $\frac{3}{5}$  of above 800<sup>m</sup> whereas Wee have sayd that lesse y<sup>n</sup> 800<sup>m</sup> was y<sup>e</sup> Established Expenxe of England very lately. I conclude that a Tax layd as justly as it may bee makes y<sup>e</sup> burthen almost insensible in times of peace & tollerable in a time of such a[n] extreme War as requires 100<sup>m</sup> foot, 30<sup>m</sup> horse & 30<sup>m</sup> men at Sea.      Such a Sea force being y<sup>e</sup> greatest that ever was knowne, & 30<sup>m</sup> horse in a way of defence more y<sup>n</sup> even y<sup>e</sup> King of France can bring by Sea to annoy us with.
- [f. 6<sup>r</sup>]      A      I cannot confute you, nor can I easily believe this doctrine / how can y<sup>e</sup> raising of 5 millions bee tollerable.
- B      I say againe: By taxing y<sup>e</sup> people as well as y<sup>e</sup> Estates reall & personall, by taxing proportionably
- A.      There is some Knack or fallacy in this matter      Either there are not so many people as they count or there is not work for them or somewhat
- B.      As for the people The Harth books say there are 1400<sup>m</sup> families and then I dare say there are above 5 soules in each family at a Medium, in London there are about 8 in each family One with another.      So as I stick to it there are 7200<sup>m</sup> soules in England, That  $\frac{1}{2}$  of them are above 16 yeares old.      Gra[u]nt has proved in

<sup>4</sup> It may also read "this".

his Bills of Mortality, That persons of from 16 (yeares) to (6) 70 yeares old can Earne 6d per diem, (===) whereas I cannot have a laborer under triple y<sup>t</sup> (pa[yment]) wages. That there is work & Employment to bee had there is 4 acres of land to Each man woman & child If men cannot or will not work is y<sup>e</sup> Magistrates fault. What better prooffe would you have? /

- [f. 6<sup>v</sup>]
- A. Can you, tell mee in factu, somewhat that may satisfy mee herein.
- B. I believe I can. I am told that Ireland actually payes to y<sup>e</sup> King 300<sup>m</sup>£ per ann[um] that Scotland is above  $\frac{2}{3}$  of Ireland in Value & therefore might pay 200<sup>m</sup>. That y<sup>e</sup> Plantations might pay 100<sup>m</sup> In all 600<sup>m</sup> & that England is 12 times as rich as Ireland & may pay 3600<sup>m</sup> In all, 4200<sup>m</sup> as easily as Ireland now payes 300<sup>m</sup>£ Which sum of 4200<sup>m</sup>£ maintaynes y<sup>e</sup> 100<sup>m</sup> foot 30<sup>m</sup> horse & 30<sup>m</sup> men at sea, over & above y<sup>e</sup> Civill government estimated at 300<sup>m</sup>.
- A. I feare your standard of Ireland is Wrong, for I have seen it in print that y<sup>e</sup> farmers pay but 240<sup>m</sup>.
- B. True, But I assume y<sup>e</sup> farmers sware to a freind of theirs they made 297<sup>m</sup> & I am sure y<sup>e</sup> Griping of their officers comes to 10<sup>m</sup> more w<sup>ch</sup> is withheld both from King & Farmers. I say y<sup>e</sup> People pay 240<sup>m</sup> to y<sup>e</sup> King about 50<sup>m</sup> to y<sup>e</sup> farmer & 10<sup>m</sup> to their Officers In all 300<sup>m</sup>. and I say there is a Way & Method of levying y<sup>e</sup> Revenue with little or no diminution. /
- [f. 7<sup>r</sup>]
- A. Stay, let mee recollect what I have learned. First you say, That y<sup>e</sup> poorest can & ought to pay their proportions. 2. That there is an Easy method of apportionment. 3. & with little charge.
- B. I do so.
- A. Give mee leave to digresse and ask a Scurvy question. Which is. If there bee occasion to raise 160<sup>m</sup> men as you say, Might not y<sup>t</sup> army become Sovereigne.
- B. They may but tis Easily prevented.
- A. How?
- B. If there bee 10 Millions of soules there bee 1600<sup>m</sup> able to beare armes Viz 10 times as many as shall bee armed in y<sup>e</sup> greatest Necessity that is if France should bend its whole force against us.

Now 100 (===) Men with cudgells & having authority & y<sup>e</sup> purse may curb (One) ten who rebels and cannot long cohere. So as y<sup>e</sup> Militia consisting of 1600<sup>m</sup> is the Ultim<sup>t</sup> force of y<sup>e</sup> Nacon, whereof  $\frac{1}{10}$  or 160<sup>m</sup> can resist France. &  $\frac{1}{10}$  of that againe or 16<sup>m</sup> can defend and Execute y<sup>e</sup> lawes at home in times of peace.

A. I past over One point too slightly. What tollerable Reason can you give y<sup>t</sup> England is 12 times as rich as Ireland. /

[f. 7<sup>v</sup>]

B. You shall heare. The Bills of Mortality for Dublin & London shew y<sup>e</sup> proportion of y<sup>e</sup> Inhabitants of those 2 Cittyes to bee thereabouts. The Howsing of London to y<sup>t</sup> of Dublin as may bee seen in y<sup>e</sup> Hearthbooks is 20 times in Number & in Value above 30 times. The Shipping of Ireland is not above  $\frac{1}{10}$  pt in Value to y<sup>e</sup> Colliers of London, nor  $\frac{1}{50}$  of that of England, The Coynded money of England reckoned at 6 mill[ions] that of Ireland under 500<sup>m</sup>£. That Land rents of Estates<sup>5</sup> of England, 8 mill[ions] Those of Ireland above One Million. The Cattle of England are indeed not triple in Value to those of Ireland. The Howsing of Ireland I meane  $\frac{3}{4}$  of them not worth 10 shillings p[er] howse.

A. You have done this Work sufficiently & that in Number weight and Measure. And by y<sup>e</sup> way I begin to smell why Ireland pay above double to y<sup>e</sup> King of what England doth. for they pay 2<sup>s</sup> p[er] hearth w<sup>th</sup> which is more y<sup>n</sup> y<sup>e</sup> Rent of y<sup>e</sup> house &  $\frac{1}{5}$  of its Value.

[f. 8<sup>r</sup>]

B. (Who) Your Nose is good. I'll give you a thing or 2 more to smell to[o]. Which is Excise. / For in Ireland Malt is about 6<sup>s</sup> y<sup>e</sup> barrell, a barrell of malt makes a barrell of beere. This beere reckoned by Wine measure imposed by y<sup>e</sup> present farmers payes above 3<sup>s</sup>, Viz  $\frac{1}{2}$  y<sup>e</sup> Intrinsic Worth.

A. This [is] a hummer.<sup>6</sup>

B. Then as to y<sup>e</sup> quitrents put upon forfeited lands, I know lands charged worth 148 p[er] an[num] not worth above 185 before y<sup>e</sup> wars.

<sup>5</sup> Miss Slatter says: "I don't think this is correct but I am unable to decide positively what is intended. It seems possible that Petty, writing quickly, has repeated himself or changed his mind without deleting a word. It could be 'if' or 'of Rents' but it looks more like a capital 'E' than a capital 'R'".

<sup>6</sup> It may also read "trimmer".

A. These are faults of y<sup>e</sup> Government, why I have heard that in Ireland  $\frac{1}{2}$  a grayne of silver passes for 3<sup>d</sup>, and that y<sup>e</sup> same money which is but 21-6<sup>d</sup> at Hollyhead is 23<sup>s</sup> at Dublin although you have Covenants under hand & seal to the Contrary.

B (I praised you to reflect upon no body)

B Thats strange, I can say little to it. I think there bee many disproportionable things amongst them, but so It is, they do pay 300<sup>m</sup> and do ever now & then talk of calling a Parliament to Enlarge y<sup>e</sup> Revenue or give Subsidies, which makes mee stick to what I first propounded, That w<sup>th</sup> good Method & Order The King & State of England are very great. /

[f. 8<sup>v</sup>]

A. Your discourse hath been very edifying for I believe, That y<sup>e</sup> King in England Scotland & Ireland hath cleare of all anticipacions, more revenue than will answer y<sup>e</sup> establishments you spake of now in times of peace. Then I believe, That In case of war, Wee can upon your principles make a mighty defence, but In case of popery I can not tell what to think of Ireland. Where y<sup>e</sup> papists are 5 to One in some places above 100 for One & in severall places 20 for One, since Wee are so frighted in England where they are not above One of 100.

B What you say is true, yet In England Scotland & Ireland there are 7 Protestants to One papist. and therefore Wee may be pretty secure also ag<sup>t</sup> Popery, Nay I have seen a paper wherein by arguments of Number weight and measure The Protestants of Ireland seemed able to Keep downe any popish Insurrection there & at y<sup>e</sup> same time to resist a French Invasion.

A That's very great indeed (for if) & probable. For if Hanlan<sup>7</sup> bee a protestant, & if there were in Ireland<sup>8</sup> but 100 such as Hee, They might keep out both y<sup>e</sup> Turk Pope & French. For hee being but One defended himself against 8000 of y<sup>e</sup> army. Wherefore 100 Irish would do it ag<sup>t</sup> 800 thousand, w<sup>ch</sup> is a greater force than ever will bee sent agst Ireland. /

[f. 9<sup>r</sup>]

A. You have spoken of y<sup>e</sup> king's power in the present state of things, but pray if you can, show how to Measure y<sup>e</sup> Naturall & Intrinsic

<sup>7</sup> According to Miss Slatter, 'Hanlan' was probably a common variant of 'Hanlon'. And she noticed in the *Calendar of State Papers Domestic, 1679-80*, that "this character is indexed as Redmond Hanlan". I think this 'Hanlan' may be the name of the "most famous leader of" Irish "outlaws" in the latter half of the 17th century Ireland, Redmond O'Hanlon (*d.* 1681), "and his exploits were chronicled in France as those of Count Hanlon". (R.Bagwell, *Ireland under the Stuarts*, repr. London, 1963, Vol. III, p. 142-43.)

<sup>8</sup> The passages from "Ireland" to the end of this paragraph are written on the left side margin of f. 8<sup>v</sup>.

strength of any Country.

B I will try. First Measure y<sup>e</sup> Country geometrically as to its quantity figure & Scituation. 2. Number y<sup>e</sup> people. 3 Reckon what quantity of such food will suffice those people as that land will beare. 4. Compute (of) how much of such food the Land will produce. 5. Compute with how many hands y<sup>e</sup> same may be produced.

A. What then.

B Then, say That if y<sup>e</sup> last mencioned Number of hands bee equall to y<sup>e</sup> whole That The Country is very Weake as being able to spare none from Necessary labour, And y<sup>e</sup> greater y<sup>e</sup> difference, The Stronger y<sup>e</sup> Country.

A Pray favour me with an Example

B 1<sup>o</sup> Ireland hath 18 millions of English acres, 2 It hath 1200<sup>m</sup> soules. 3. That Land will feed Oves & Boves, Sheep & Oxen. which yeild Beefe Hides tallow hornes, Milk butter cheese Wooll & Sheepskins by all which comodities People may bee fed and clothed. even without bread their rusks or other drink y<sup>n</sup> milk & water I guesse a pound of flesh & a pottle of milk may [feed] each Soule p[er] diem at a Medium between great & small I also guesse y<sup>t</sup> 25<sup>lbs</sup> of sheeps wooll will cloth a man that lesse then a hide & 4 sheepskins will / will supply all that is to [be] made of leather, & y<sup>t</sup> the tallow of an Oxe & 4 Sheep will furnish Candles Sope &c. 4. I know that 4 of those acres will feed an Oxe of 3 yeares old or 10 Sheep. That an Oxe of 3 yeares old weighs near  $3\frac{1}{2}$  [cwt.]. That One quarter of Boves are Milch-Cowes that a Milch cow will give p[er] an[um] as many pottles of Milk as there bee dayes in y<sup>e</sup> yeare That Ireland will feed 4500<sup>m</sup> boves or 3500<sup>m</sup> of boves & 10000<sup>m</sup> Oves That a Sheep will carry 3<sup>lbs</sup> of wooll. That an Ox will give 40 or 50<sup>lbs</sup> of tallow That 10 Sheep will yeild as much. 5. I think that (3)4500<sup>m</sup> Cowhard[s] & Shephards will keep all those Cattle That as many more Women may make y<sup>e</sup> butter cheese &c and as Many more May tan y<sup>e</sup> leather make shoes Spin weave & dresse y<sup>e</sup> Clothes & make clothes and build such houses as will content Nature To bee short I suppose That about 150<sup>m</sup> must labor & that where 150<sup>m</sup> can labor 300<sup>m</sup> must Eate.

[f. 9<sup>v</sup>]

A What then?

- [f. 10<sup>r</sup>]
- B Then I say that 1800<sup>m</sup> of akers 3500<sup>m</sup> Boves 10000<sup>[m]</sup> of Sheep & 300<sup>m</sup> people may feed 1200<sup>m</sup> / and Consequently That there being 1200<sup>m</sup> in all, That 900<sup>m</sup> are Spare hands & may bee employed to luxury Ornament War Sciences, Superstitions &c.
- A. This already is more than is usually taught, Pray let mee [be] so bold as to ask whether you [have] any method to make finde y<sup>e</sup> a Par between lands and hands.<sup>9</sup> So as to talk of both by one denomination, as arithmeticians do in fractions, for when you ask what  $\frac{1}{7}$  &  $\frac{1}{3}$  make added together, They will answer  $\frac{10}{21}$  pts' neither expressing themselves by thirds or seventh but by a New comon denominacion of 21 parts, because of 21 you may take both a Third and Seaventh part.
- B That common denominacion is Mony for if 40 acres of land are worth 10<sup>£</sup> p[er] an[num] & y<sup>t</sup> One man can Earne 10<sup>£</sup> p[er] an[num], Then Money is y<sup>e</sup> Common denominator by which y<sup>e</sup> Par is made.
- [f. 10<sup>v</sup>]
- A. Mony is an artificiall Thing or rather No Thing though Solomon sayes it answers all Things, but Is rather y<sup>e</sup> Signe of a Thing. For If men were excellently Versed in accompts Mony were not necessary at all and many places as Barbados &c have made shift without it & so they do in Banks. / I know not how to expresse what I would be at. but I was once taught that 12 parts of silver was Equall to One of Gold, because a Man could in a day make or find 12 times as much silver & gold, and y<sup>t</sup> an<sup>10</sup> (Ounce) a bushell of wheat was worth 5<sup>s</sup> because twas Equal labor to produce a bushell of wheat as an Ounce of silver, & when the difficultyes change them then Prices change also.  
=====.
- B I think I smell your Meaning. Proceed thus. 1<sup>o</sup>. Find a sort of food & clothing will bee produced by less y<sup>n</sup> your whole land such is wheate & hemp. 2. Suppose one Man may bee fed w<sup>th</sup> 10 bushells of wheate p[er] an[num] & that  $\frac{1}{2}$  an acre will beare so much. & that  $\frac{1}{12}$  of an aker will [bear] sufficient hemp. Then 600<sup>m</sup> akers will beare wheate for your 1200<sup>m</sup> soules & 100<sup>m</sup> akers more will beare clothing. Suppose you would produce Wheate by y<sup>e</sup> help of as many horses as 300<sup>m</sup> akers will feed with grasse & hay.

<sup>9</sup> Miss Slatter says: "It seems to me that Petty had first written 'to make a Par between lands and hands'. I still think the word written between the lines over the word 'make' is 'finde y<sup>e</sup>'. If Petty had deleted 'make a' the words would be 'to finde y<sup>e</sup> Par between [lands and hands]'".

<sup>10</sup> Presumably Petty forgot to cross out this word.

[f. 11<sup>r</sup>]

That y<sup>e</sup> whole <Which> makes <well> 1000<sup>m</sup> of akers, which perhaps requires 500<sup>m</sup> husbandmen, the double whereof for children makes One millions, Then y<sup>e</sup> difference between y<sup>e</sup> akers is 1700<sup>m</sup> & y<sup>e</sup> difference between the hands 700<sup>m</sup>. Wherefore 700<sup>m</sup> hands are equivalent to 17<sup>mm</sup><00> of acres. / So as 7 men are Equivalent to 170 acres or One Man to 24 acres, Or rather One adult husbandman to 48 acres, So as If arrable land be 6.8<sup>d</sup> per acre, y<sup>e</sup> Rent is 16<sup>ē</sup> p[er] an[um], The wages of a good husbandman beeing thereabouts.

$\frac{3 \ 2}{(1 \ 7)0} (24 \frac{1}{2})$

A. This Par is not exact.

B. No No, This is onely y<sup>e</sup> way of investigation, I was not exact in y<sup>e</sup> data or y<sup>e</sup> Suppositions, & consequently The Par is no truer then y<sup>e</sup> suppositions Were, Neither Is one or y<sup>e</sup> Other very wide from y<sup>e</sup> mark.

A Can you apply Arithmetick to Every Thing.

B Unlesse They bee Mysticall Spirituall eternall &c.

A I see nothing of Arithmetic in your Way, Which Every [body] doth not know & can do.

B True; Every body can Add Substract Multiply divide, but every body have not materialls to worke upon, Nor are there many who can state & reduce politicall questions into termes of Number weight & Measure, But are like y<sup>e</sup> fellow who when hee learned to Write, knew not at all w<sup>t</sup> to write.

A Could you tell mee, by this Arithmetic what is to bee said for & ag<sup>t</sup> Popery concerning w<sup>ch</sup> there [is] so much a doe in y<sup>e</sup> King's dominions.

[f. 11<sup>v</sup>]

B I believe I can because Popery seemes to mee not a Matter of Religion but Policy / for the question is Who is supreme. The B[isho]p of Rome? Or all y<sup>e</sup> people of England Scotland and Ireland, represented in their King & his Peeres, as also in 500 nay 900 Eminent gentlemen chosen by themselves. And whether The Pope can give greater Rewards & punishments in Great Britaine & Ireland then those: Whether The Pope can command beleife, better than y<sup>e</sup> Common Sense of ourselves & all these, Whether y<sup>e</sup> Law written by God in y<sup>e</sup> hearts of all these jointly & severally, bee not as legible as y<sup>e</sup> Dictates of y<sup>e</sup> Pope, Whether by y<sup>e</sup> same rule



that hee is supreme here, hee bee not so all the world over, Whether hee bee (lineally) in a direct line discended from Adam whose heire by Right of paternall power is Universall Monarch. These questions may be reduced to Number weight & measure and cleared better than by most of y<sup>e</sup> wayes in use.

A. Tis probable, but—you [give] no nearer way.

B. Yes, I can soon state some other questions, As for Instance, what is profit or loss from Popery in Ireland.

A. Let mee heare but That.

[f. 12<sup>r</sup>]

B. There [are] 1200<sup>m</sup> soules in Ireland whereof  $\frac{1}{2}$  are under 16 yeares old so as there are but 600<sup>m</sup> fit to heare Preaching, & whereas A Preacher may be heard by 600 hearers There must be 1000 Preachers or Priests in Ireland, but There are of all sorts neare 6000 whereof about 4000 are Papists, / and spending 25<sup>£</sup> p[er] an[um] One w<sup>th</sup> another, are a losse of 100<sup>m£</sup> to the Nacion.

A. They are such a losse as superfluous priests but not as popish priests.

B. But tis well known That y<sup>e</sup> Romish Religion abounding with rites & Ceremonies Requires 4 times as many churchmen as the Protestant (relig[ion]) Worship doth. For if y<sup>e</sup> Roman Worship were legall in Ireland I cannot think these would bee lesse y<sup>n</sup> 10<sup>m</sup> Churchmen Viz 2 or 3 secular priests to Each parish Whereof there are about 2200, and as many Regulars as Secular, so as both would neare reach y<sup>t</sup> Number. Whereas There bee scarce 500 protestant Ministers in Ireland, although That Religion bee only legall there.

A. Now you come home to y<sup>e</sup> point, and what you say is anent<sup>11</sup> true in Spayne. Pray Go on.

B. There bee at least a dozen more holydayes kept by y<sup>e</sup> papists then protestants, On which The former will not work, Now if there bee 900<sup>m</sup> papists in Ireland whereof  $\frac{1}{2}$  do or may work, then the dayes Wages of the rest is above 11<sup>m£</sup>. So as y<sup>e</sup> losse is 12 times 11<sup>m£</sup> or 132<sup>m£</sup> p[er] an[um].

A. This is right; yo[u]r next.

B. The dayes of abstinence, (now in Ireland and since y<sup>e</sup> Wednesdays

<sup>11</sup> It may also read "almost".

[f. 12<sup>v</sup>] were taken of[f]) are 104 Fridayes & Saturdayes 35 dayes besides Fridayes & Saturdayes in Lent, which with Eves & Ember Weekes do make above 160<sup>days</sup> or  $\frac{4}{9}$  of the whole yeare, or y<sup>e</sup> food of 400<sup>m</sup> soules p[er] an[num]. / Now If there never was brought out [of] Ireland into England fleshmeate for above 100<sup>m</sup> in any One yeare and since The bringing thereof doth so greatly empoverish England & Enrich Ireland. How much more would bee then gayned by transporting 4 times as much fleshmeate (for 4 times) into y<sup>e</sup> stomach, of y<sup>e</sup> Irish papists. I say If the Computations currant in England were true this article would amount to a Million, tho[ugh] I charge it but at 100<sup>m</sup>£.

A. Very well. go on.

B Before y<sup>e</sup> yeare 1641, when Rebellion of papists was not feared, The Charge of the army was not so much (per an[num]) by above 100<sup>m</sup> p[er] an[num] as It hath been ever since y<sup>e</sup> same was (reduced) ended. I conclude That Popery is a pecuniary damage to Ireland of about 400<sup>m</sup> which in y<sup>e</sup> Country where y<sup>e</sup> Rents are scarce a Million is very considerable.

A. But could you not bring arithmetically arguments as well for Popery. For I see you are not Killing of Men but trying your Sword. Pray let me heare.

[f. 13<sup>r</sup>] B. I told you before That y<sup>e</sup> 18 Millions of acres in Ireland with  $4\frac{1}{2}$  millions of Cattle with y<sup>e</sup> moderate labour of  $\frac{1}{4}$  of y<sup>e</sup> people can give a livelyhood to y<sup>e</sup> other  $\frac{3}{4}$  Or That all y<sup>e</sup> people / working None need worke full 2 dayes in y<sup>e</sup> week. Why Then should not all the Rest bee days of Worship to God & his Saints.